



2022 AHFE International

International Conference on Applied Human Factors and Ergonomics

jointly with

Global Issues Challenge: Human Factors in Disease Control and Pandemic Prevention

1st International Symposium on Creative Technology and Digital Media

1st International Conference on Human-Centered Aerospace Systems and Sustainability Applications

2nd International Conference on Human Dynamics and Design for the Development of Contemporary Societies

3rd International Conference on Creativity, Innovation and Entrepreneurship

4th International Conference on Industrial Cognitive Ergonomics and Engineering Psychology

4th International Conference on Human Factors for Apparel and Textile Engineering

5th International Conference on Human Factors in Artificial Intelligence and Social Computing

5th International Conference on Kansei Engineering

5th International Conference on Additive Manufacturing, Modeling Systems and 3D Prototyping

5th International Conference on Advanced Production Management and Process Control

5th International Conference on Interdisciplinary Practice in Industrial Design

5th International Conference on Human Factors in Aging and Special Needs

5th International Conference on Human Factors in Accessibility and Assistive Technology

6th International Conference on Human Factors and Wearable Technologies

6th International Conference on Human Error, Reliability, Resilience, and Performance

6th International Conference on Human Factors in Communication of Design

6th International Conference on Human Factors in Virtual Environments and Game Design

7th International Conference on Design for Inclusion

7th International Conference on Cognitive Computing and Internet of Things

7th International Conference on Human Factors and Simulation

7th International Conference on Human Factors in Management and Leadership

8th International Conference on Human Factors in Cybersecurity

8th International Conference on Human Factors and Systems Interaction

8th International Conference on Human Factors in Robots, Drones and Unmanned Systems

8th International Conference on Human Factors, Business Management and Society

8th International Conference on Human Factors in Energy

8th International Conference on Human Factors in Training, Education, and Learning Sciences

9th International Conference on The Human Side of Service Engineering

9th International Conference on Human Factors, Software and Systems Engineering

9th International Conference on Architecture, Sustainable Urban Planning and Infrastructure

9th International Conference on Safety Management and Human Factors

10th International Conference on Affective and Pleasurable Design

10th International Conference on Human Factors in Transportation

10th International Conference on Ergonomics in Design

11th International Conference on Cross-Cultural Decision Making

11th International Conference on Human Factors and Ergonomics in Healthcare and Medical Devices

11th International Conference on Digital Human Modeling and Applied Optimization

13th International Conference on Physical Ergonomics and Human Factors

13th International Conference on Usability & User Experience

13th International Conference on Neuroergonomics and Cognitive Engineering

13th International Conference on Social & Occupational Ergonomics

23rd International Conference on The Human Aspects of Advanced Manufacturing: Managing Enterprise of the Future

Final Program

24-28 July, 2022

Sheraton New York Times Square, USA

WWW.AHFE.ORG

Table of Contents

AHFE
International

Applied
Human Factors
and Ergonomics
Conference

2022

www.ahfe.org

OPENING PLENARY SESSION AND
KEYNOTE ADDRESS 1

TUTORIALS 2

CONFERENCE AT A GLANCE

TRACK ACRONYMS 3

SESSIONS OVERVIEW 4

DETAILED TECHNICAL PROGRAM

TUESDAY, JULY 26

8:00-9:30 10

10:00-11:30 14

12:00 -13:30 19

14:30-16:00 24

16:30-18:00 29

WEDNESDAY, JULY 27

8:00-9:30 33

10:00-11:30 38

12:00 -13:30 43

14:30-16:00 48

16:30-18:00 53

THURSDAY, JULY 28

8:00-9:30 58

10:00-11:30 63

12:00 -13:30 68

14:30-16:00 73

16:30-18:00 77

POSTER/DEMONSTRATION SESSIONS

TUESDAY, JULY 26

Group A 9:00-17:00 83

Group B 9:00-17:00 84

WEDNESDAY, JULY 27

Group C 9:00-17:00 85

Group D 9:00-17:00 86

THURSDAY, JULY 28

Group E 9:00-17:00 87

HOTEL LAYOUT 88

CONFERENCE EXHIBITS 89

CONFERENCE ORGANIZATION 89

AHFE2023 INTERNATIONAL CONFERENCE 90

Opening Plenary Session and Keynote Address

17:00-18:30 (EDT), Monday July 25, 2022
Room: Metropolitan East (Level 2)

INTRODUCTORY REMARKS

Waldemar Karwowski - General Conference Chair

Session Chair: Dylan Schmorrow

HUMAN-CENTERED AI IN THE AUGMENTED AGE

Dr. Michael van Lent

CEO and President of Soar Technology, Inc.



Dr. Michael van Lent is the CEO and President of Soar Technology, Inc. In this role, he leads SoarTech in its mission to develop human-centered artificial intelligence solutions for the military's toughest problems. He has 25+ years of experience in artificial intelligence research for the DoD and has led a wide range of research, development and commercialization efforts funded by DARPA, Navy, Army and Air Force RDT&E organizations. Dr. van Lent has published widely in academic journals and conferences and is a founding organizer of the AAAI Conference on AI and Interactive Digital Entertainment (AIIDE). He has contributed to the development of multiple military training applications and the commercial release of the Full Spectrum Warrior video game (Xbox, Windows). He previously worked the Naval Research Lab's Navy Center for Applied Research in Artificial Intelligence (NCARAI), applying genetic algorithms to evolve AI pilot models for air combat, and as Associate Director for Games Research at the University of Southern California's Institute for Creative Technologies (ICT), applying explainable AI and game technology to develop immersive training applications. Dr. van Lent holds a PhD in Computer Science from the University of Michigan, a Masters in Computer Science from the University of Tennessee, and a Bachelor of Arts in Computer Science from Williams College.

Conference program schedule is listed in
Eastern Daylight Time (EDT) - New York Timezone

**Access to the Conference Scientific and Technical Program
will be available through the AHFE Submission System**

Detailed access for all sessions will be sent to Registered Participants

CONFERENCE RECEPTION/BANQUET: MONDAY, JULY 25 • 19:00-22:00
METROPOLITAN BALLROOM WEST (LEVEL 2)

(BADGE REQUIRED)
Dress is business casual

Tutorials

Conference program schedule is listed in Eastern Daylight Time (EDT) - New York Timezone

PRE-CONFERENCE TUTORIALS

Half-day tutorials at introductory, intermediate, and advanced levels will cover the entire spectrum of the conference. Tutorials will be offered on Saturday, July 24 and Sunday, July 25. Tutorials registration is required. Tutorials coffee breaks on July 24-25, 2022: Murray Hill (Level 1)

JULY 24, 2022

TUTORIAL GROUP A - 9:00 - 12:30 (EDT)		ROOM
T-1	Fundamentals in Data Visualization and Dashboard Design Presenter: Abbas Moallem, San Jose State University	AHFE 1: Chelsea
T-2	Design, User Experience and Usability Presenter: Javed Sheikh, University of Sialkot	AHFE 2: Union Square
T-3	Prototyping HMI for Partially and Highly Automated Vehicles: A Balanced Human Systems Integration Approach Presenters: Marcel Baltzer, Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE Nicolas Herzberger, RWTH Aachen University IAW, Germany Joscha Wasser, Fraunhofer FKIE, Germany	AHFE 3: Sugar Hill

JULY 24, 2022

TUTORIAL GROUP B - 13:00 - 16:30 (EDT)		ROOM
T-4	Eye Tracking Methods and Applications Presenter: Jan Watson, Drexel University	AHFE 1: Chelsea
T-5	User-Centered Design: Creating Effective Personas Presenter: Everett McKay, UX Design Edge	AHFE 2: Union Square
T-6	Human Factors and Cybersecurity Presenter: Abbas Moallem, San Jose State University	AHFE 3: Sugar Hill

JULY 25, 2022

TUTORIAL GROUP C - 9:00 - 12:30 (EDT)		ROOM
T-7	Towards Data Science: Modelling Techniques in Predictive Analytics with Python Presenter: Javed Sheikh, University of Sialkot	AHFE 1: Chelsea
T-8	Cognitive Neuroscience for the Human Factors Practitioner and Fundamentals of Brain Imaging Presenter: Adrian Curtin, Drexel University	AHFE 2: Union Square
T-9	Next Generation Simulation and Training using Virtual Reality and Augmented Reality Presenter: Mahdi Ebnali, Harvard University	AHFE 3: Sugar Hill
T-10	Remote Measurement of Vital Signs Using AI for Health Monitoring and Cognition Presenters: Abhijit Sarkar, Virginia Tech Transportation Lynn Abbott, Virginia Tech	AHFE 4: Sutton Place

Conference Tracks

TRACK	ACRONYM
Human Factors in Artificial Intelligence and Social Computing	AISC
Additive Manufacturing, Modeling Systems and 3D Prototyping	AMMSP
Affective and Pleasurable Design	APD
Advanced Production Management and Process Control	APMPC
Transportation: Aviation	AVI
Cross-Cultural Decision Making	CCDM
Cognitive Computing and Internet of Things (IoT)	CCIoT
Creativity, Innovation and Entrepreneurship	CIE
Neuroergonomics & Cognitive Engineering	CN
Creative Technology & Digital Media	CTDM
Human Factors in Cybersecurity	CYBER
Global Issues: Human Factors in Disease Control and Pandemic Prevention	DCPP
Digital Human Modeling and Applied Optimization	DHMAO
Design for Inclusion	DI
Ergonomics in Design	ED
Human Factors and Ergonomics in Healthcare and Medical Devices	EHMD
Human Factors in Energy: Oil, Gas, Nuclear and Electric Power Industries	ENERGY
Human-Centered Aerospace Systems and Sustainability Applications	HCASSA
Human Dynamics and Design for the Development of Contemporary Societies	HDCS
Human Error, Reliability, Resilience, and Performance	HERRP
Human Factors in Accessibility and Assistive Technology	HFAAT
Human Factors in Aging and Special Needs	HFAS
Human Factors for Apparel and Textile Engineering	HFATE
Human Factors, Business Management and Society	HFBMS
Human Factors in Communication of Design	HFCD
Human Factors in Virtual Environments and Game Design	HFGD
Human Factors in Management and Leadership	HFML
Human Factors in Robots, Drones and Unmanned Systems	HFRDUS
Human Factors and Simulation	HFSIM
Human Factors, Software and Systems Engineering	HFSSE
Human Factors and Wearable Technologies	HFWT
Human Side of Service Engineering	HSSE
Industrial Cognitive Ergonomics and Engineering Psychology	ICEEP
Interdisciplinary Practice in Industrial Design	IPID
Kansei Engineering	KE
Transportation: Maritime	MAR
The Human Aspects of Advanced Manufacturing: Managing Enterprise of the Future	MFG
Physical Ergonomics & Human Factors	PEHF
Transportation: Road & Rail (RR)	RR
Safety Management and Human Factors	SMHF
Social & Occupational Ergonomics	SOE
Transportation: Space	SPACE
Human Factors, Architecture, Sustainable Urban Planning and Infrastructure	SUPI
Human Factors and Systems Interaction	SYSI
Human Factors in Training, Education, and Learning Sciences	TELS
Usability and User Experience	UUE

Conference at a Glance

Conference program schedule is listed in Eastern Daylight Time (EDT) - New York Timezone

#	SESSION TITLE	TRACK	ROOM
TUESDAY, JULY 26, 2022 - SESSION TIME: 8:00-9:30 (PAGES 10 - 14)			
1	Healthcare Information Systems: Techniques and Documentation	EHMD	AHFE 1: Chelsea
2	Cultural Values: From Localization to Globalization	CCDM	AHFE 2: Union Square
3	Plenary: Neuroergonomics and Cognitive Engineering	CN	AHFE 3: Sugar Hill
4	Design for Education	ED	AHFE 4: Sutton Place
5	Instinct Engineering	APD	AHFE 5: Murray Hill
6	Artificial Intelligence, Health and Safety Management	SMHF	AHFE 6: Bowery
7	Cycling and Trucking Safety	RR	AHFE 7: Bryant Park
8	Ergonomics in Architecture I	SUPI	AHFE 8: Columbus Circle
9	User Experience Applications in Automotive Industry	UUE	AHFE 9: Flatiron
10	Human Factors on Security and Crises Management	SYSI	AHFE 10: Gramercy
11	COVID-19 and Education Technologies	TELS	AHFE 11: Madison Square
12	Human Factors in Virtual Environments and Game Design I	HFGD	AHFE 12: Turtle Bay
13	Human Factors and Wearable Technologies I	HFWT	AHFE 13: Madison 1
14	HSSE Welcome/Plenary	HSSE	AHFE 14: Madison 2
15	Design, Accessibility, and Integration for Aging	HFAS	AHFE 15: Madison 3
REFRESHMENTS: 9:30 - 10:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
TUESDAY, JULY 26, 2022 - SESSION TIME: 10:00-11:30 (PAGES 14- 19)			
16	Kansei Engineering I	KE	AHFE 1: Chelsea
17	Human Factors in Disease Control and COVID-19 Pandemic Prevention	DCPP	AHFE 2: Union Square
18	Human Factors in Energy I	ENERGY	AHFE 3: Sugar Hill
19	DHM Applications	DHMAO	AHFE 4: Sutton Place
20	Interaction Design and Evaluation of Intelligent Networking Vehicles I	ED	AHFE 5: Murray Hill
21	Applications in Brain-Machine Interface and Human Robot Interaction	ICEEP	AHFE 6: Bowery
22	Advances in Maritime Education and Training	MAR	AHFE 7: Bryant Park
23	Human Aspects of Advanced Manufacturing I	MFG	AHFE 8: Columbus Circle
24	International Transportation Safety Management	SMHF	AHFE 9: Flatiron
25	Vehicle Automation I	RR	AHFE 10: Gramercy
26	Ergonomics in Architecture II	SUPI	AHFE 11: Madison Square
27	Usability and User Experience Applications I	UUE	AHFE 12: Turtle Bay
28	Future Ecosystem Opportunities	HFBMS	AHFE 13: Madison 1
29	Human-Autonomy Teaming and Simulation Applications	HFSIM	AHFE 14: Madison 2
30	Human Factors in Virtual Environments and Game Design II	HFGD	AHFE 15: Madison 3
REFRESHMENTS: 11:30 - 12:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
TUESDAY, JULY 26, 2022 - SESSION TIME: 12:00 -13:30 (PAGES 19 - 24)			
31	Design Communication I: Global Issues	HFCD	AHFE 1: Chelsea
32	Creative Design and 3D Printing	AMMSP	AHFE 2: Union Square
33	Emotion in Fashion Design and Intersection Areas	HDCS	AHFE 3: Sugar Hill
34	Augmenting Service Capabilities in the Post-Pandemic Era	HSSE	AHFE 4: Sutton Place
35	Education for Creativity, Design and Innovation	CIE	AHFE 5: Murray Hill
36	Laurence R. Young Memorial Panel on Human-Centered Automation Applications in Spaceflight	HCASSA	AHFE 6: Bowery
37	Human Factors in Aviation I	AVI	AHFE 7: Bryant Park
38	Diagnostic System and Techniques	EHMD	AHFE 8: Columbus Circle

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
TUESDAY, JULY 26, 2022 - SESSION TIME: 12:00 -13:30 (PAGES 19 - 24)			
39	Cognitive Computing and Internet of Things (IoT) I	CCIoT	AHFE 9: Flatiron
40	Apparel Ergonomics, Engineering and Performance	HFATE	AHFE 10: Gramercy
41	Product Design and Ergonomic Evaluation	PEHF	AHFE 11: Madison Square
42	Comfort and Interior Considerations in Automated Vehicles	RR	AHFE 12: Turtle Bay
43	Usability and User Experience Applications II	UUE	AHFE 13: Madison 1
44	Ergonomic Developments in Systems Interactions	SYSI	AHFE 14: Madison 2
45	Digital Business Transformation and Change Leadership I	HFBS	AHFE 15: Madison 3
13:30-14:30 LUNCH AT THE RESTAURANT OF YOUR CHOICE			
TUESDAY, JULY 26, 2022 - SESSION TIME: 14:30-16:00 (PAGES 24 - 28)			
46	Advanced Learning Technologies	TELS	AHFE 1: Chelsea
47	Theories, Methods and Teaching	DI	AHFE 2: Union Square
48	Human Factors in Software and Systems Engineering I	HFSS	AHFE 3: Sugar Hill
49	Human Performance in Air, Maritime, and Ground Transportation	HRRP	AHFE 4: Sutton Place
50	Competitiveness and Productivity in Contemporary Organization	APMPC	AHFE 5: Murray Hill
51	Research and Education in Design	HDCS	AHFE 6: Bowery
52	Behavioral Cybersecurity	CYBER	AHFE 7: Bryant Park
53	Emerging Research Innovations in Service Design, User Experience, and Design Research: Industry, Business, and Education	HSSE	AHFE 8: Columbus Circle
54	Design Strategies	CIE	AHFE 9: Flatiron
55	Assistive Technology and Sensory Accessibility	HFAAT	AHFE 10: Gramercy
56	Management and Leadership I	HFML	AHFE 11: Madison Square
57	Anthropometry	ED	AHFE 12: Turtle Bay
58	Emotional Engineering I	APD	AHFE 13: Madison 1
59	Systemic-Structural Activity Theory	CN	AHFE 14: Madison 2
60	Design Research Through Complex Scenarios and Complex Products I	ED	AHFE 15: Madison 3
REFRESHMENTS: 16:00 - 16:30 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
TUESDAY, JULY 26, 2022 - SESSION TIME: 16:30-18:00 (PAGES 29 - 33)			
61	Safety Culture and Human Factors	SMHF	AHFE 1: Chelsea
62	Ergonomic Risk Assessment Methods and Techniques	PEHF	AHFE 2: Union Square
63	Methods and Future Technologies in Transportation	RR	AHFE 3: Sugar Hill
64	Human Factors, Business Management and Efficiency	SOE	AHFE 4: Sutton Place
65	Ergonomics in Architecture III	SUPI	AHFE 5: Murray Hill
66	Usability and User Experience Applications III	UUE	AHFE 6: Bowery
67	Technologies to Support OSH and Wellbeing in the Workplace	SYSI	AHFE 7: Bryant Park
68	Digital Business Transformation and Change Leadership II	HFBS	AHFE 8: Columbus Circle
69	Robotic Systems and Users for Social Interactions	HFRDUS	AHFE 9: Flatiron
70	Product Design for Inclusion	DI	AHFE 10: Gramercy
71	Approaches and Methodologies in Design Field	HDCS	AHFE 11: Madison Square
72	Exploring Collaborations Using Extended Reality, Artificial Intelligence in User Experience, and Service Design in the Metaverse	HSSE	AHFE 12: Turtle Bay
73	Creative Technology and Media Application	CTDM	AHFE 13: Madison 1
74	Artificial Intelligence - Utilization and Innovation	AISC	AHFE 14: Madison 2
75	Fashion and Apparel Design	HFATE	AHFE 15: Madison 3

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
WEDNESDAY, JULY 27, 2022 - SESSION TIME: 8:00-9:30 (PAGES 33 - 38)			
76	Sensory Engineering and Emotion	APD	AHFE 1: Chelsea
77	Culture and Satisfaction	CCDM	AHFE 2: Union Square
78	Monitoring Physician or Patient in Medical Operations	CN	AHFE 3: Sugar Hill
79	Design Research Through Complex Scenarios and Complex Products II	ED	AHFE 4: Sutton Place
80	Automation, Digitalization in Maritime Operations	MAR	AHFE 5: Murray Hill
81	Advanced Technology and Engineering in Safety Management	SMHF	AHFE 6: Bowery
82	Human Factors Considerations for Electric Vehicle Infrastructure	RR	AHFE 7: Bryant Park
83	Public Transportation	RR	AHFE 8: Columbus Circle
84	Physical Ergonomics and Work-Related Issues	SOE	AHFE 9: Flatiron
85	Usability Evaluation	UUE	AHFE 10: Gramercy
86	Vulnerable Road-User Safety, Haptic Interfaces and Technological Interventions	SYSI	AHFE 11: Madison Square
87	Teaching/Learning Interaction	TELS	AHFE 12: Turtle Bay
88	Design Communication II: Creative Studies	HFCD	AHFE 13: Madison 1
89	Innovation in Additive Manufacturing Sector	AMMSP	AHFE 14: Madison 2
90	Design and Identity for Territories	HDCS	AHFE 15: Madison 3
REFRESHMENTS: 9:30 - 10:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
WEDNESDAY, JULY 27, 2022 - SESSION TIME: 10:00-11:30 (PAGES 38 - 43)			
91	Creating Value in Teams, Organizations, Communities, and Societies I	HSSE	AHFE 1: Chelsea
92	Design, Co-Creation and Innovation	CIE	AHFE 2: Union Square
93	Healthcare Strategies and Design in Pandemic Control and Management	DCPP	AHFE 3: Sugar Hill
94	Cognitive Assessment and Physical Strain of First Responders and Action Forces	CCIoT	AHFE 4: Sutton Place
95	Emotional Engineering II	APD	AHFE 5: Murray Hill
96	Applied Digital Anthropometry for Performance and Accommodation	DHMAO	AHFE 6: Bowery
97	Interaction Design	ED	AHFE 7: Bryant Park
98	Healthcare Advancement and Patient Safety	EHMD	AHFE 8: Columbus Circle
99	Musculoskeletal Disorders and Physical Wellbeing	PEHF	AHFE 9: Flatiron
100	Driver Performance, Behaviour, and Physiology I	RR	AHFE 10: Gramercy
101	Ergonomics in Urban Planning I	SUPI	AHFE 11: Madison Square
102	User Interface and Accessibility I	UUE	AHFE 12: Turtle Bay
103	Human Functions in Organizational Systems	SYSI	AHFE 13: Madison 1
104	Human-Related Social- and Technostress and Wearable Intelligence	HFBSM	AHFE 14: Madison 2
105	Analysis of Learning Strategies and Learning Performance	TELS	AHFE 15: Madison 3
REFRESHMENTS: 11:30 - 12:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
WEDNESDAY, JULY 27, 2022 - SESSION TIME: 12:00 -13:30 (PAGES 43 - 48)			
106	Human Factors in Software and Systems Engineering II	HFSSE	AHFE 1: Chelsea
107	Trust in Autonomous Dogfight Using Modeling and Simulation	HFSIM	AHFE 2: Union Square
108	Advanced Production Management and Process Control I	APMPC	AHFE 3: Sugar Hill
109	Design and Empathy I	HDCS	AHFE 4: Sutton Place
110	Creating Value in Teams, Organizations, Communities, and Societies II	HSSE	AHFE 5: Murray Hill
111	Culture and Innovation	CIE	AHFE 6: Bowery
112	Ergonomics in Design: Techniques and Applications	ED	AHFE 7: Bryant Park
113	DHM and Postural Performance	DHMAO	AHFE 8: Columbus Circle

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#	SESSION TITLE	TRACK	ROOM
WEDNESDAY, JULY 27, 2022 - SESSION TIME: 12:00 -13:30 (PAGES 43 - 48)			
114	Interface Design	ED	AHFE 9: Flatiron
115	Trust in Vehicle Automation	RR	AHFE 10: Gramercy
116	Ergonomics Design and Emotion	ED	AHFE 11: Madison Square
117	Virtual Environments and Ergonomics	PEHF	AHFE 12: Turtle Bay
118	Driver Performance, Behaviour, and Physiology II	RR	AHFE 13: Madison 1
119	Ergonomics in Urban Planning II	SUPI	AHFE 14: Madison 2
120	User Interface and Accessibility II	UUE	AHFE 15: Madison 3
13:30-14:30 LUNCH AT THE RESTAURANT OF YOUR CHOICE			
WEDNESDAY, JULY 27, 2022 - SESSION TIME: 14:30-16:00 (PAGES 48 - 52)			
121	Interaction Design in Transportation	SYSI	AHFE 1: Chelsea
122	Social Challenges and Digital Transformation	HFBMS	AHFE 2: Union Square
123	Urban and Environmental Design for Inclusion	DI	AHFE 3: Sugar Hill
124	Management and Leadership II	HFML	AHFE 4: Sutton Place
125	Fashion and Textiles for Well-Being and Sustainability	HFATE	AHFE 5: Murray Hill
126	Kansei Engineering II	KE	AHFE 6: Bowery
127	21st Century Design - Education, Principles, and Process	IPID	AHFE 7: Bryant Park
128	Design and Empathy II	HDCS	AHFE 8: Columbus Circle
129	Service Systems in the Intelligent Algorithms' Era: Responsible Entities Learning to Co-Invest in a Shared Future	HSSE	AHFE 9: Flatiron
130	Human Factors and Future Accessible Technologies	HFAAT	AHFE 10: Gramercy
131	Textile Design and Engineering	HFATE	AHFE 11: Madison Square
132	Cognitive Computing, Biomedical Engineering and Bioinformatics	ICEEP	AHFE 12: Turtle Bay
133	Emotional Engineering III	APD	AHFE 13: Madison 1
134	Cognitive Engineering I	CN	AHFE 14: Madison 2
135	Virtual Reality and Interaction Design	ED	AHFE 15: Madison 3
REFRESHMENTS: 16:00 - 16:30 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
WEDNESDAY, JULY 27, 2022 - SESSION TIME: 16:30-18:00 (PAGES 53 - 57)			
136	Innovative Healthcare Technology	EHMD	AHFE 1: Chelsea
137	Vehicle Automation II	RR	AHFE 2: Union Square
138	Usability and User Experience Applications IV	UUE	AHFE 3: Sugar Hill
139	Digitalization and Value Driven Strategic Marketing	HFBMS	AHFE 4: Sutton Place
140	Implementation of Novel Technology and Gamification for Training and Certification	TELS	AHFE 5: Murray Hill
141	Manned-Unmanned Teaming Applications	HFRDUS	AHFE 6: Bowery
142	Social and Cognitive Aspects of Cybersecurity	CYBER	AHFE 7: Bryant Park
143	Culture, Art and Building Design for Inclusion	DI	AHFE 8: Columbus Circle
144	Human Factors in Gamification and Serious Games	HFGD	AHFE 9: Flatiron
145	Human Factors and Wearable Technologies II	HFWT	AHFE 10: Gramercy
146	Advances and Innovation in Techniques for Aging Population	HFAS	AHFE 11: Madison Square
147	Design and Social Engagement	HDCS	AHFE 12: Turtle Bay
148	Designing Future Service Business: Digital – Sustainable - Resilient I	HSSE	AHFE 13: Madison 1
149	Exploring Implications and Disease Processes through Artificial Intelligence	AISC	AHFE 14: Madison 2
150	Human Factors for Textile and Society	HFATE	AHFE 15: Madison 3

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
THURSDAY, JULY 28, 2022 - SESSION TIME: 8:00-9:30 (PAGES 58 - 62)			
151	Cognitive Neuroscience for Design	APD	AHFE 1: Chelsea
152	Cognitive Engineering II	CN	AHFE 2: Union Square
153	Automobile and Road Design	ED	AHFE 3: Sugar Hill
154	Applications in Design, Human-Machine Interaction, Health and Artificial Intelligence	ICEEP	AHFE 4: Sutton Place
155	Risk Assessments, Disaster Response and Safety Management	SMHF	AHFE 5: Murray Hill
156	Social & Occupational Ergonomics I	SOE	AHFE 6: Bowery
157	Usability and User Experience Applications V	UUE	AHFE 7: Bryant Park
158	COVID-19 and Data-Driven Business Alignment	HFBMS	AHFE 8: Columbus Circle
159	Advanced Learning Techniques in Education I	TELS	AHFE 9: Flatiron
160	Human Factors in Software and Systems Engineering III	HFSSE	AHFE 10: Gramercy
161	Simulation and Occupational Safety	HFSIM	AHFE 11: Madison Square
162	Human Factors and Wearable Technologies III	HFWT	AHFE 12: Turtle Bay
163	Human Reliability Analysis	HERRP	AHFE 13: Madison 1
164	Human Factors in Energy II	ENERGY	AHFE 14: Madison 2
165	Designing the Inn(t)erface	HDCS	AHFE 15: Madison 3
REFRESHMENTS: 9:30 - 10:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
THURSDAY, JULY 28, 2022 - SESSION TIME: 10:00-11:30 (PAGES 63 - 67)			
166	Designing Future Service Business: Digital – Sustainable - Resilient II	HSSE	AHFE 1: Chelsea
167	Human Factors in Artificial Intelligence and Social Computing	AISC	AHFE 2: Union Square
168	Cognitive Computing for Healthcare and Wellbeing	CCIoT	AHFE 3: Sugar Hill
169	Ergonomics in Product Design	ED	AHFE 4: Sutton Place
170	Healthcare Issues and Risk Management	EHMD	AHFE 5: Murray Hill
171	Safety and Digitization in Maritime Operations	MAR	AHFE 6: Bowery
172	Physical Workload Assessment and Biomechanical Analysis	PEHF	AHFE 7: Bryant Park
173	Demographic Characteristics and Driver Performance	RR	AHFE 8: Columbus Circle
174	Ergonomics in Urban Planning III	SUPI	AHFE 9: Flatiron
175	Usability and User Experience Applications VI	UUE	AHFE 10: Gramercy
176	User Interaction and Systems Usability	SYSI	AHFE 11: Madison Square
177	Applied Human Factors in Society Operations I	HFBMS	AHFE 12: Turtle Bay
178	Maximizing, Measuring and Modifying Human Performance Using Simulation	HFSIM	AHFE 13: Madison 1
179	Advanced Production Management and Process Control II	APMPC	AHFE 14: Madison 2
180	Human Factors in Virtual Environments and Game Design III	HFGD	AHFE 15: Madison 3
REFRESHMENTS: 11:30 - 12:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
THURSDAY, JULY 28, 2022 - SESSION TIME: 12:00 -13:30 (PAGES 68 - 72)			
181	Design Communication III: Design Innovation	HFCD	AHFE 1: Chelsea
182	New Perspectives on Human Decision Making and Errors	HERRP	AHFE 2: Union Square
183	Explorations in Design Education	IPID	AHFE 3: Sugar Hill
184	Design for Health and Wellbeing	HDCS	AHFE 4: Sutton Place
185	Re-Balancing the Benefits of Digitalisation: Service Innovation, Empowerment and Regulation	HSSE	AHFE 5: Murray Hill
186	Innovation During Start-Up and Entrepreneurship	CIE	AHFE 6: Bowery
187	Software and Systems Engineering in Artificial Intelligence	AISC	AHFE 7: Bryant Park

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
THURSDAY, JULY 28, 2022 - SESSION TIME: 12:00 -13:30 (PAGES 68 - 72)			
188	Ergonomics in Interface Design	ED	AHFE 8: Columbus Circle
189	Emerging Techniques	EHMD	AHFE 9: Flatiron
190	Interaction Design: Applications and Techniques	SYSI	AHFE 10: Gramercy
191	Symposium: Digital Human Modelling By Women in Human Factors	DHMAO	AHFE 11: Madison Square
192	Safety Interventions and Training Programs	RR	AHFE 12: Turtle Bay
193	Ergonomics in Urban Planning IV	SUPI	AHFE 13: Madison 1
194	Human Factors in Aviation II	AVI	AHFE 14: Madison 2
195	Systems Design and Innovation	SYSI	AHFE 15: Madison 3
13:30-14:30 LUNCH AT THE RESTAURANT OF YOUR CHOICE			
THURSDAY, JULY 28, 2022 - SESSION TIME: 14:30-16:00 (PAGES 73 - 77)			
196	Applied Human Factors in Society Operations II	HFBMS	AHFE 1: Chelsea
197	Distance Learning and Pedagogy	TELS	AHFE 2: Union Square
198	Applications in Robots, Drones and Unmanned Systems I	HFRDUS	AHFE 3: Sugar Hill
199	Human Factors in Naval Aviation Training: Success and Challenges	HFSIM	AHFE 4: Sutton Place
200	Human Factors in Virtual Environments and Game Design IV	HFGD	AHFE 5: Murray Hill
201	Kansei Engineering III	KE	AHFE 6: Bowery
202	Human Performance, Improvement, and Variability	HFAS	AHFE 7: Bryant Park
203	Human Dynamics for Social Cohesion	HDCS	AHFE 8: Columbus Circle
204	Human-Centered Aerospace Systems and Sustainability Applications	HCASSA	AHFE 9: Flatiron
205	Service Innovation in a VUCA World	HSSE	AHFE 10: Gramercy
207	Emotional Engineering IV	APD	AHFE 12: Turtle Bay
208	User Research and Interaction Design	ED	AHFE 13: Madison 1
209	Occupational Safety and Safety Management	SMHF	AHFE 14: Madison 2
210	Interaction Design and Evaluation of Intelligent Networking Vehicles II	ED	AHFE 15: Madison 3
REFRESHMENTS: 16:00 - 16:30 • ROOM: EMPIRE BALLROOM (LEVEL 2)			
THURSDAY, JULY 28, 2022 - SESSION TIME: 16:30-18:00 (PAGES 77 - 82)			
211	Interconnect Systems and Vehicle Automation	RR	AHFE 1: Chelsea
212	Social & Occupational Ergonomics II	SOE	AHFE 2: Union Square
213	Ergonomics in Urban Planning V	SUPI	AHFE 3: Sugar Hill
214	System Interaction and User Perception	SYSI	AHFE 4: Sutton Place
215	Advanced Learning Techniques in Education II	TELS	AHFE 5: Murray Hill
216	Applications in Robots, Drones and Unmanned Systems II	HFRDUS	AHFE 6: Bowery
217	Cybersecurity in Software Development, Critical Infrastructure and Transportation Contexts	CYBER	AHFE 7: Bryant Park
218	Design for Disability	DI	AHFE 8: Columbus Circle
219	Organizational Factors	HFML	AHFE 9: Flatiron
220	Design Communication IV: Design Culture	HFCD	AHFE 10: Gramercy
221	Human Factors and the Design of Performance Products	IPIID	AHFE 11: Madison Square
222	Design and Sustainabilities	HDCS	AHFE 12: Turtle Bay
223	Innovation and Healthcare Technology for the Aging Population	HFAS	AHFE 13: Madison 1
224	HSSE Wrap-Up	HSSE	AHFE 14: Madison 2
225	Accessibility, Human Factors and Product Design	HFAAT	AHFE 15: Madison 3

<p>1</p>	<p>Healthcare Information Systems: Techniques and Documentation Co-Chairs: Helen Fuller and Galia Kondova, USA/Switzerland</p>	<p>EHMD</p>
<p>8:00-9:30 AHFE 1: CHELSEA</p>	<p>Electronic product information for human medicines: A blockchain solution Galia Kondova, Switzerland Describing and disarming health information system snares that capture and conceal characters Tim Arnold, Helen Fuller, Angela Laurio, USA How self-report affects digital health-related behavior change Yuan Yin, Yurong Yu, UK Applying user interface profiles to ensure safe remote control within the open networked operating room in accordance with ISO IEEE 11073 SDC Okan Yilmaz, Armin Janß, Klaus Radermacher, Germany Shared living providers (SLP) experience documentation burden while caring for individuals with intellectual and developmental disabilities (I/DD) Martina A. Clarke, Kathryn M. Cooper, Lisa L. Neitzke, USA</p>	
<p>2</p>	<p>Cultural Values: From Localization to Globalization Co-Chairs: Atsuo Murata and Toshihisa Doi, Japan</p>	<p>CCDM</p>
<p>8:00-9:30 AHFE 2: UNION SQUARE</p>	<p>Cross-cultural differences in thought and risk behavior – Implications for safety management Atsuo Murata, Toshihisa Doi, Japan Advertising and values: A study on cultural values manifested in advertising targeting the urban middle class in China Wenhua Li, Ziqi Ye, China On localization design in transnational marketing - the example of Starbucks Ifumi Akasaka, Japan A world of diverse opportunities – on the need for proactive career capital renewal in the globalizing society Agnieszka Cybal-Michalska, Poland Approaches to extending game-theoretic analyses to complex, real-world scenarios William Neal Reilly, Leonard Eusebi, USA Analysis on the preference intention and its influencing factors of standing passengers in subway carriages Ke Liu, Canqun He, Zhelong Hu, China Design strategy based on consumers' cognition of Cantonese cultural product in the new era Xingyi Zhong, Taiwei Sun, China Design thinking in public service innovation: The Singapore innovation lab as model Liyang Huang, Peng Xu, Yichen Meng, China</p>	
<p>3</p>	<p>Plenary: Neuroergonomics and Cognitive Engineering Chair: Hasan Ayaz, USA</p>	<p>CN</p>
<p>8:00-9:30 AHFE 3: SUGAR HILL</p>	<p>Neurotechnology for neuroergonomics application Frederic Dehais, France</p>	
<p>4</p>	<p>Design for Education Co-Chairs: Shijun Ge and Qianqian Lin, China</p>	<p>ED</p>
<p>8:00-9:30 AHFE 4: SUTTON PLACE</p>	<p>Construction of the educational model of vocational college students' career planning based on design thinking Qianqian Lin, Chenxi Wang, China Interdisciplinary curriculum design integrating design, technology, and business Ruowei Cao, Yuanbo Sun, Shijun Ge, Chenxi Wang, China Integrate design thinking into Chinese high school curriculum reform Shijun Ge, Yuanbo Sun, Ruowei Cao, China Online teaching platform of design thinking workshop Chenxi Wang, Yuanbo Sun, Qianqian Lin, Ruowei Cao, Yanan Che, China Exploration and practice of progressive PBL in costume design course: The example engineering and design college of Hunan Normal University Zhengtang Tan, Ziqin Luo, Shuang Lin, China</p>	

5	Instinct Engineering Co-Chairs: Shuichi Fukuda and Keiichi Muramatsu, Japan	APD
8:00-9:30 AHFE 5: MURRAY HILL	<p>Towards establishing benefit society Shuichi Fukuda, Japan</p> <p>Effect of category ambiguity on response duration in discrimination task Yoshimasa Tawatsuji, Keiichi Muramatsu, Japan</p> <p>Analysis of an actors' emotions and audience's impression of facial expression Hiroko Shoji, Naoki Takahashi, Yuri Hamada, Japan</p> <p>Emotional responses to motion sickness in autonomous driving Satoki Fujimoto, Kouyou Otsu, Tomoko Izumi, Japan</p> <p>Emotional responses to motion sickness in autonomous driving: An emotional design perspective Rute Alexandra Silva, Iara Margolis, Isabel Lisboa, Eduarda Pereira, Bernardo Providência, Nelson Costa, Portugal</p> <p>The smell of the scene - mapping the digital smell of scenes around Beijing Xiaotian Sun, China</p> <p>An investigation of user perceptions of anthropomorphic linguistic expressions in guidance from home appliances Kouyou Otsu, Tomoko Izumi, Japan</p> <p>Self-sustaining society (SSS) for the next generation Shuichi Fukuda, Japan</p>	
6	Artificial Intelligence, Health and Safety Management Co-Chairs: Matilde Alexandra Rodrigues and Nuno Barbosa Rocha, Portugal	SMHF
8:00-9:30 AHFE 6: BOWERY	<p>Validation of a video-based system to determine heart rate for stress monitoring Simão Ferreira, Nuno Rocha, Matilde Rodrigues, Portugal</p> <p>Work-related diseases as a challenge for institutionalised prevention in a changing world of work Marie Jelenko, Georg Effenberger, Austria</p> <p>Activity simulation in radiology: Chest x-ray in bed-ridden patients Florentino Serranheira, Kelly Fernandes, Cláudia Sá Dos Reis, Portugal</p> <p>Adverse events in dental care: A review towards notification Vanessa Torres, Filipa Carvalho, Portugal</p> <p>Alone at work: Some elements on the relationship between need of communication and health at work Jacques Marc, France</p> <p>What are the boundaries of stress monitoring technology acceptability? Simão Ferreira, Nuno Rocha, Matilde Rodrigues, Portugal</p> <p>Technology and young adult visual acuity degradation symptoms Bankole K. Fasanya, Olukunle O. Akanbi, Nihaar Usu, Temilade R. Adeyeye, USA</p>	
7	Cycling and Trucking Safety Co-Chairs: Susan Murray and Franz Lambrecht, USA/Germany	RR
8:00-9:30 AHFE 7: BRYANT PARK	<p>When cycling again - comparison of safety behaviors of between cyclists of shared bike, private bike and public bike in China Fan Zhou, China</p> <p>Use a bike-sharing and gain points: the factors influencing the bike-sharing choice during the use of a mobility-as-a-service (MAAS) application Eugénie Avril, Céline Lemerrier, Amaël Arguel, Loïc Caroux, France</p> <p>Attitude vs. Infrastructure: Influences on the intention to overtake cyclists Anja Katharina Huemer, Friedrich Maximilian Strauß, Germany</p> <p>SafeBike - a road safety program for young adolescent cyclists Franz Lambrecht, Carsten Sommer, Germany</p> <p>Digitizing buttons: A comparison of digital input modalities to replace physical buttons in truck cockpits Lasse Schölkopf, Alicia Kneuper, Veronika Hutmann, Frank Diermeyer, Germany</p> <p>Trucking industry's electronic logging devices vs. human behavior Susan Murray, Clair Reynolds Kueny, Elizabeth Cudney, USA</p>	

Tuesday, July 26

8	Ergonomics in Architecture I Co-Chairs: Xia Wei and Zaira Tello, Poland/Italy	SUPI
8:00-9:30 AHFE 8: COLUMBUS CIRCLE	<p>Sustainable design of commercial and residential complexes: An example of Wantun community project Xia Wei, Wojciech Bonenberg, Mo Zhou, Jinzhong Wang, Poland</p> <p>Frontier analysis of resilience research in design ecology Xiaoxi Pan, China</p> <p>Design of university roof public space based on multi-dimensional emotional experience Huang Keke, Guo Yongyan, China</p> <p>The effects of the San Gottardo Base Tunnel System on the transformation of cross-border land and its contribution to a more circular economy Zaira Tello, Italy</p> <p>Building elements from totora stems joined with mechanical systems Juan Hidalgo-Cordero, Patricio Hidalgo-Castro, Alfredo Ordoñez, Boris Orellana-Alvear, Ecuador</p> <p>Eisenman’s Conceptual-Generative Diagram: A creative interface between intention, randomness and imagination and space-form Ana Vasconcelos, Portugal</p>	
9	User Experience Applications in Automotive Industry Co-Chairs: Paridhi Mathur and Yusen Zhu, USA/China	UUE
8:00-9:30 AHFE 9: FLATIRON	<p>Tesla Model 3: Impact of vertical segmentation on visual search time Paridhi Mathur, Abbas Moallem, USA</p> <p>Methods to promote increased usage of voice interaction in a vehicle Karl Proctor, Lee Skrypchuk, Daniel Clifton, Mutlu Isik, UK</p> <p>The influence of music on color preference in vehicle environment Yusen Zhu, Ao Jiang, Junbo Dong, Yeming Pang, Yuqing Liu, Jiacheng Liu, Xiang Yao, Stephen Westland, Caroline Hemingray, China</p> <p>Design of electric bicycle for take-away delivery based on KANO model and TRIZ Theory Miao Liu, Yufeng Wu, China</p> <p>External human-machine interface design for automated vehicles based on analytic hierarchy process Jing Yang, Wumin Ouyang, China</p> <p>The effect of non-driving task takeover request message timing on novice drivers' driving trust Muyi Li, Ren-ke He, Yuan Yuchen, Chaomin Ma, China</p>	
10	Human Factors on Security and Crises Management Co-Chairs: Mário Simões-Marques and Francesca de Rosa, Portugal/Belgium	SYSI
8:00-9:30 AHFE 10: GRAMERCY	<p>Decision-making in disaster operations - intuition vs intelligent system support Mario Simões-Marques, Isabel L. Nunes, Portugal</p> <p>Exploring trust in unmanned systems with the Maritime Unmanned System Trust Game Francesca de Rosa, Christopher Strode, Belgium</p> <p>Education as a maritime safety improvement factor Armindo Frias, Pedro Água, Mario Simões-Marques, Portugal</p> <p>Ontologies for emergency management Anacleto Correia, Mario Simões-Marques, Pedro Água, Portugal</p> <p>High reliability organizing, resiliency and safety culture Yalda Khashe, USA</p> <p>Envisioning 21st century mixed-initiative operations for energy systems Roger Lew, Thomas Ulrich, Ronald Boring, USA</p>	

<p>11</p>	<p>COVID-19 and Education Technologies Co-Chairs: Lloyd Morris and Jorge Cruz-Cárdenas, Colombia/Ecuador</p>	<p>TELS</p>
<p>8:00-9:30 AHFE 11: MADISON SQUARE</p>	<p>Student motivation in the teaching process during the COVID 19: An experience of the international exchange for the learning of control charts Lloyd Morris, Dunia Duque, Olga Jasmin Salazar De Morris, Homero Murzi, Sandra Duran, Colombia</p> <p>Analysis of video conferencing platforms for online teaching during the COVID-19 pandemic Omar Córdor-Herrera, Janio Jadán-Guerrero, Carlos Ramos-Galarza, Ecuador</p> <p>Bibliometric analysis of the existing literature on COVID-19 and its impact on higher education Jorge Cruz-Cárdenas, Nora Oleas, Carlos Ramos, Sonia Cueva, Jorge Guadalupe-Lanas, Ecuador</p> <p>The transition from COVID-19 pandemic induced online learning to the future physical campus: Is the higher education ready? Paulina Kuforiji, John Kuforiji, USA</p> <p>How the COVID-19 pandemic fueled educational innovation in higher education Cristian Londoño, Aide Naranjo, Ecuador</p>	
<p>12</p>	<p>Human Factors in Virtual Environments and Game Design I Co-Chairs: Thomas Brett Talbot and Anton Nijholt, USA/Netherlands</p>	<p>HFGD</p>
<p>8:00-9:30 AHFE 12: TURTLE BAY</p>	<p>Open medical gesture: An open-source experiment in naturalistic physical interactions for mixed and virtual reality simulations Thomas Brett Talbot, Chinmay Chinara, USA</p> <p>A pilot study for a more immersive virtual reality brain-computer interface José Rouillard, Hakim Si Mohammed, François Cabestaing, France</p> <p>Measuring human influential factors during VR gaming at home: Towards optimized per-user gaming experiences Marc Antoine Moindreau, Tiago Henrique Falk, Alcyr Alves De Oliveira, Canada</p> <p>Mobile cross reality (XR) space for remote collaboration Yusuke Kikuchi, Ryoto Kato, Vibol Yem, Yukie Nagai, Yasushi Ikei, Japan</p> <p>Augmented reality: Beyond interaction Anton Nijholt, Netherlands</p> <p>Generation of walking sensation by providing upper limb motion Gaku Sueta, Ryoto Kato, Yusuke Kikuchi, Vibol Yem, Yasushi Ikei, Japan</p> <p>Exploring the design of the sign system of NTUH through wayfinding behavior in virtual environment Ching Yuan Wang, Ching I. Chen, Meng-Cong Zheng, Taiwan</p> <p>Investigating user experience of lighting quality in office workstations: A combined approach utilizing virtual reality and physical workstations Roxana Jafarifiroozabadi, Piers Macnaughton, Alina Osnaga, USA</p>	
<p>13</p>	<p>Human Factors and Wearable Technologies I Co-Chairs: Suresh Sethi and Ying-Chia Huang, USA/Taiwan</p>	<p>HFWT</p>
<p>8:00-9:30 AHFE 13: MADISON 1</p>	<p>Real-time breath pattern detection from helmet Yang Cai, Tomas Vancura, Haocheng Zheng, Lenny Weiss, USA</p> <p>Designing wearables devices to build emotional relationships Suresh Sethi, USA</p> <p>University footballers' preference for smart trousers Ying-Chia Huang, Wei-Hao Yang, Taiwan</p> <p>Using inertial measurement units (IMU) and comparative trajectory analysis for modeling micro-level human motion dysfunction Robert Gutierrez, Joe Hart, Laura Barnes, Mehdi Boukhechba, USA</p> <p>Actigraphy vs polysomnography measurements for sleep arousals J. Paige Little, Selina Ho, Lionel Rayward, Glenice Uhrle, Daniel Green, Mark Percy, Australia</p> <p>Automation of the collection and processing of physiological functions from wearable sensors Kristian Fodor, Zoltán Balogh, Slovakia</p> <p>Affective computing for stress, anxiety and cybersickness detection in virtual reality Belmir Jose De Jesus Junior, Tiago Henrique Falk, Yuvika Dandiwal, Helen Alemu, Canada</p>	

14	HSSE Welcome/Plenary Co-Chairs: Christine Leitner, Walter Ganz, Clara Bassano, Debra Satterfield, UK/Germany/Italy/USA	HSSE
8:00-9:30 AHFE 14: Madison 2	ISSIP Award Winner on AI and healthcare Jim Spohrer, USA Transformation in action: Digitalization for achieving sustainable social development Arman Abdrassilov, Ayazhan Mukanova, Asset Dosymkhanov, Kazakhstan	
15	Design, Accessibility, and Integration for Aging Co-Chairs: Shanshan Sun and Meng-Cong Zheng, China/Taiwan	HFAS
8:00-9:30 AHFE 15: MADISON 3	Assessment of flower stand and the sensory experience in horticultural activities Meng-Cong Zheng, Ching-i Chen, Iwen Yen, Taiwan Design research of elderly-oriented cultural and creative products based on user analysis Wei Ding, Shanshan Sun, China The kitchen product design oriented to the motor capability of armless people Mengjiao Bai Bai, Xiaodong Gong, China Human factors considerations in design for the elderly Ulugbek Ismatullaev, Alisher Saduakas, Kwanmyung Kim, South Korea Reducing work-related stressors in the care of people with dementia through music intervention - What factors matter? Elisabeth Ibenthal, Claus Backhaus, Germany Designing positive user experiences to encourage older adults' self-care Ana Cristina Barbosa Medeiros, UK Program for social and psychological rehabilitation of people with disabilities Oksana Kravchenko, Katherine Chupina, Oleksandr Safin, Andrii Bepalko, Kateryna Kravchenko, Evgeniy Balabushka, Serhii Vasyliiev, Yuliya Chernetska, Oleksandr Klochok, Ukraine Evaluation of local muscular load on the forearm in industry Ilona Kačerová, Marek Bureš, Jana Kleinová, Filip Rybníkář, Pavel Vránek, Czech Republic	
REFRESHMENTS: 9:30 - 10:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)		
16	Kansei Engineering I Chair: Wonseok Yang, Japan	KE
10:00-11:30 AHFE 1: CHELSEA	Remote cheering system with voice in live streaming Mirai Takatama, Wonseok Yang, Japan Learning to read music by differences in perception of information Misato Akiba, Wonseok Yang, Japan The effect of the visual stimulus on during rest about online learning Ryusei Anzai, Wonseok Yang, Japan Suggestions to make working in a sitting chair more comfortable Saeko Imura, Noriko Hashida, Ryuichi Yamazaki, Japan Reflection on ideas through verbalisation and the use of the results Yuki Asano, Japan Kansei evaluation of natto packages: Focusing on text mining and color analysis Toya Yahaba, Namgyu Kang, Japan Evaluation of elements layout design of ink painting posters based on aesthetics model Xiangyu Ma, Chengqi Xue, China	
17	Human Factors in Disease Control and COVID-19 Pandemic Prevention Co-Chairs: Karine Berthelot Quiet and Juliette Charbonneaux, France	DCPP
10:00-11:30 AHFE 2: UNION SQUARE	Cultural, recreational and tourist Cherkasy region under pandemic conditions Oksana Kravchenko, Marina Mishchenko, Viktoriia Isachenko, Inna Honchar, Yulia Lysenko, Olena Polishchuk, Yulia Pesotskaya, Ukraine Rare cancers and digital quest for authority during COVID 19 pandemic Karine Berthelot Quiet, Juliette Charbonneaux, France Challenges and associated mental stress during COVID-19 work adaptation among employees in Ireland Yanbing Chen, Carolyn Ingram, Vicky Downey, Mark Roe, Anne Drummond, Penpatra Sripaiboonkij, Claire Buckley, Elizabeth Alvarez, Carla Perrotta, Conor Buggy, Ireland Interdisciplinary communication and advice under uncertainty in a pandemic Manfred Dangelmaier, Wilhelm Bauer, Zimu Chen, Germany Lifestyle-related factors affecting physical inactivity issues among Filipino aging population during the COVID-19 pandemic: A multiple regression approach Joehanna Ngo, Yoshiki Kurata, Zyra Mae Sicat, Dannah Isabelle Buñas, Jaylord Gutierrez, Pamela Pangilinan, Pamela Ann Mae Pascual, Philippines	

18	Human Factors in Energy I Chair: Ron Boring, USA	ENERGY
10:00-11:30 AHFE 3: SUGAR HILL	<p>A review of historical street lighting solutions Olaoluwa Akinshipe, Clinton Aigbavboa, South Africa</p> <p>Progress on attempts to reduce energy consumption used for road illumination Olaoluwa Akinshipe, Clinton Aigbavboa, South Africa</p> <p>Effect of COVID-19 on energy demand management and monitoring at key international airports in South Africa Purity Shandu, Daramy Vandí Von Kallon, South Africa</p> <p>Avenues for utilization of agricultural wastes Omojola Awogbemi, Daramy Vandí Von Kallon, South Africa</p>	
19	DHM Applications Co-Chairs: Sofia Scataglini and Sudhakar Rajulu, Belgium/USA	DHMAO
10:00-11:30 AHFE 4: SUTTON PLACE	<p>An automated skeleton extraction system using videos and convolutional neural networks Miri Weiss Cohen, Andrea Vitali, Daniele Regazzoni, Israel</p> <p>Three-dimensional scalp shape prediction from face and neck shapes Daniel Park, Matthew Reed, USA</p> <p>Demonstrating the value of 3D models to support large-scale digital modifications at nuclear power plants Jeremy Mohon, Casey Kovesdi, USA</p> <p>A proactive ergonomics framework to assess A-Pillar vision obstruction H. Onan Demirel, Sriram Srinivasan, USA</p> <p>Methodology based on 3D thermal scanner and AI integration to model thermal comfort and ergonomics Consuelo Latorre Sánchez, Juan Antonio Solves, Joaquín Sanchiz Navarro, Ricardo Bayona Salvador, Jose Laparra, Nicolás Palomares, Jose Solaz, Spain</p> <p>Spacesuit and mobility performance changes K. Han Kim, Yaritza Hernandez, Sarah Jarvis, Jessica Knoblock, Nicholas Lopac, Hannah Weiss, Elizabeth Benson, Sudhakar Rajulu, USA</p>	
20	Interaction Design and Evaluation of Intelligent Networking Vehicles I Co-Chairs: Yichen Dong and Ge Li, China	ED
10:00-11:30 AHFE 5: MURRAY HILL	<p>Modeling user requirements for driver-vehicle interaction system in China Yichen Dong, Sakura Akahoshi, Jieun Lee, Yuchi Saito, Makoto Itoh, Japan</p> <p>How can I learn to use this car faster? : User education for intelligent connected car Ge Li, Yuanbo Sun, China</p> <p>Interactive design of car steering wheel touch screen interface based on Kano Model Ziqiang He, Dan Wang, China</p> <p>From the driver's point of view of information reception: Building a design strategy for aiding interaction with novice drivers Ziwen Han, Ying Zhao, Hao Yang, Nan Fu, Yifan Han, China</p> <p>Ease of use for interactive mode of intelligent connected vehicles: a case study of physical button and virtual interface Zihan Bi, Yuanbo Sun, Shuai Sun, Kaimin Guo, China</p> <p>External HMI for automated vehicles: adding a communication perspective for all road users Ruolin Gao, Marieke Martens, Netherlands</p> <p>Under the era of light health preservation: The influence of college students' study pressure on their choice of regimen Yao Fang, Zhaolin Lu, Yang Xu, Mengying Gao, Tongtong Zhao, China</p>	

21	Applications in Brain-Machine Interface and Human Robot Interaction Co-Chairs: Umer Asgher and Hasan Ayaz, Pakistan/USA	ICEEP
10:00-11:30 AHFE 6: BOWERY	<p>Building trust and safety correlates for autonomous systems using physiological, behavioral, and subjective measures Zohreh Zakeri, Azfar Khalid, Ahmet Omurtag, Greg Hilliard, Philip Breedon, UK</p> <p>Does acoustic feedback increase the accuracy of weight and force perception during fine motor activities? Jai Prakash Kushvah, Gerhard Rinkenauer, Germany</p> <p>Image classification for project-based learning to differentiate diagram and figures Asmara Safdar, Sara Ali, Muhammad Sajid, Umer Asgher, Yasar Ayaz, Pakistan</p> <p>Pupil dilation variation as an indicator of arousal regulation: Towards understanding operator functional state Brittany N. Neilson, Shannon P. Devlin, Sabrina M. Drollinger, Noelle L. Brown, Clara Sibley, Cyrus K. Foroughi, Joseph T. Coyne, USA</p> <p>Novel approach for sensing the humanoid hand finger position using non-contact TMR sensor Saeed Iqbal, Shahid Nawaz Khan, Muhammad Sajid, Sara Ali, Fahad Iqbal Khawaja, Yasar Ayaz, Pakistan</p> <p>A chain-driven live roller mechanism for loading and unloading packages on autonomous mobile robots in warehouses Muhammad Ammar, Muhammad Moeed Ahmed, Muhammad Abdullah Younas, Khezar Qayyum, Fahad Iqbal Khawaja, Umer Asgher, Sara Ali, Yasar Ayaz, Pakistan</p> <p>Personality prediction in human-robot-interaction (HRI) Anum Jaffer, Sara Ali, Fahad Iqbal Khawaja, Yasar Ayaz, Muhammad Sajid, Pakistan</p>	
22	Advances in Maritime Education and Training Co-Chairs: Charlott Sellberg and Gesa Praetorius, Sweden	MAR
10:00-11:30 AHFE 7: BRYANT PARK	<p>On the road to autonomous maritime transport: A conceptual framework to meet training needs for future ship operations Gholam Reza Emad, Saratkumar Narayanan, Aditi Kataria, Australia</p> <p>Patterns and variations in policy describing simulated assessment practices: Analyzing documents regulating maritime higher education Astrid Camilla Wiig, Norway</p> <p>Challenges of simulation training for future engineering seafarers - a qualitative case study Gholam Reza Emad, Aditi Kataria, Australia</p> <p>Exploring strengths and weaknesses in professional marine pilot education Gesa Praetorius, Charlott Sellberg, Sweden</p> <p>Transferring tacit knowledge during maritime pilot training: Assessment of methods in use Rikard Eklund, Anna-lisa Osvalder, Sweden</p> <p>EEG-based stress recognition in competency assessment using maritime navigation simulator Satinder Singh Viridi, Yisi Liu, Daniel Zhang, Singapore</p> <p>Analysis of an unmanned aerial vehicle accident using the perceptual cycle model Kirsty Lynch, Katie Plant, Victoria Banks, Aaron Roberts, UK</p>	
23	Human Aspects of Advanced Manufacturing I Co-Chairs: Nina Rußkamp and Nektarios Karanikas, Germany/Australia	MFG
10:00-11:30 AHFE 8: COLUMBUS CIRCLE	<p>New ways to design next generation CAM systems. An integrated approach of co-creation and process modeling Nina Rußkamp, Claas Digmayer, Eva-Maria Jakobs, Florens Burgert, Marisa Schirmer, Susanne Mütze Niewöhner, Germany</p> <p>Conductive design as an iterative process for engineering CPPS Franziska Kessler, Sebastian Lorenz, Felix Miesen, Jonas Miesner, Florian Pelzer, Marc Satkowski, Anselm Klose, Leon Urbas, Germany</p> <p>Insights into human factors at a truck manufacturing company Ian Barros Guimaraes, Nektarios Karanikas, Australia</p> <p>Understanding human factors to improve occupational safety in manufacturing: A case study Lucia Botti, Maniva Oliva, Riccardo Melloni, Italy</p> <p>Functionalized multilayer structures for burns treatment Emilia Visileanu, Alexandra Ene, Stelian Sergiu Maier, Diana Popescu, Alina Vladu, Romania</p> <p>Self-directed shop floor teams for industry 4.0 Bastian Pokorni, Erdem Gelec, Stephan Verhasselt, Stefanie Findeisen, Germany</p> <p>Realization of logistics operations within Nigerian manufacturing industries Ayodeji Dennis Adeitan, Clinton Aigbavboa, Oyindamola Cynthia Olubiyo, Adebayo Oluwasegun Adewole, South Africa</p>	

24	International Transportation Safety Management Co-Chairs: Bart Accou and Anne Garcia, Belgium/USA	SMHF
10:00-11:30 AHFE 9: FLATIRON	<p>Training in traffic safety culture based on risk factor analysis for urban road accident prevention: Case study Rio Verde – Goiás, Brazil Magaly Romão, Paulo Do Vale, Guilherme Rodrigues De Sousa, Anabela dos Santos Aleixo Simões, Brazil</p> <p>Perspectives on human performance and safety management in NTSB rail and highway accident investigations Anne Garcia, Meg Sweeney, USA</p> <p>Reanalyzing the FPSO CSM accident (2015) with a human factors approach to understand the contribution of organizational elements and complexities Josue Franca, Erik Hollnagel, Sweden</p> <p>Personal protective equipment availability, usage, and adaptability for seafarers Cecilia Osterman, Per Nilsson, Sweden</p> <p>Selection and implementation of evidence based safety performance indicators in aviation training Brian Dillman, Dimitrios Ziakkas, Jason Cutter, USA</p> <p>Expanded method of accident analysis and prevention – MAPAEX: An incident analysis in a railway company Sandra Beltran, Manoela Lopes, Rodolfo Vilela, Marco Querol, Gabriel Eroico, Ildeberto Almeida, Brazil</p>	
25	Vehicle Automation I Co-Chairs: Tom Driessen and Elisabeth Shi, Netherlands/Germany	RR
10:00-11:30 AHFE 10: GRAMERCY	<p>The Effects of multi-modal takeover request on distracted drivers’ takeover performance and perception Ye Yang, Mengying Deng, Yaohua Zhou, Mingjiang Shi, Ruixuan Gao, China</p> <p>Confidence horizon for a dynamic balance between drivers and vehicle automation: First sketch and application Nicolas Herzberger, Marcel Usai, Frank Flemisch, Germany</p> <p>Meeting user needs in vehicle automation Uwe Drewitz, Klas Arne Ihme, Michael Oehl, Franziska Hartwich, Cornelia Hollander, Rick Vosswinkel, Robert Ritschel, Juliane Maerker, Helge Ludwig, Victor Fäßler, Alexander Trende, Daniela Johannmeyer, Yvonne Brück, Mathias Niedling, Germany</p> <p>Identifying lane changes automatically using the GPS sensors of portable devices Tom Driessen, Lokin Prasad, Pavlo Bazilinsky, Joost de Winter, Netherlands</p> <p>Driving simulator study for the effects of autonomous vehicles on drivers behavior under car-following conditions Alessandro Calvi, Fabrizio D’Amico, Chiara Ferrante, Gaia Calcaterra, Italy</p> <p>Overall effects of non-driving related activities’ characteristics on takeover performance in the context of SAE level 3: A meta-analysis Elisabeth Shi, Klaus Bengler, Germany</p> <p>Development of empathic autonomous vehicles through understanding the passenger’s emotional state Nicolás Palomares, Javier Silva, Juan Manuel Belda-Lois, Sofía Iranzo, Begoña Mateo, Víctor De Nalda-tárrega, Jose Laparra, Jose Solaz, Spain</p>	
26	Ergonomics in Architecture II Co-Chairs: Jakub Świerzawski and Zihan Xu, Poland/China	SUPI
10:00-11:30 AHFE 11: MADISON SQUARE	<p>Exploration of landscape perception of Jinshan Peasant paintings village Hanrui Jia, Rui Xu, Youyuan Wang, Wenqian Qiu, China</p> <p>Metro public art from the perspective of semiotics Zihan Xu, Wuzhong Zhou, China</p> <p>Architecture on the edge of a city Nina Juzwa, Tomasz Konior, Jakub Świerzawski, Poland</p> <p>Modular fabric tensile structures A. Diogo, Cristina Carvalho, António Morais, Portugal</p> <p>The importance of the adobe brick for a sustainable architecture in Mexico Marcela De Obaldia, Fabiola Cortes Chavez, Alberto Rossa-Sierra, Mariel Garcia-Hernandez, Mexico</p> <p>Current economic limits of housing affordability in the Czech and Slovak Republic Daniela Spirkova, Petr Stepanek, Julius Golej, Barbora Brestovska, Slovakia</p>	

Tuesday, July 26

27	Usability and User Experience Applications I Co-Chairs: Daniela Quiñones and Po Jen Yang, Chile/Taiwan	UUE
10:00-11:30 AHFE 12: TURTLE BAY	<p>User eXperience heuristics for geoportals Daniela Quiñones, Andrés Barraza, Luis Rojas, Chile</p> <p>User experience study on self-checkout system of hypermarkets in Taiwan Po Jen Yang, I Wen Yen, Meng-Cong Zheng, Taiwan</p> <p>Eliciting potential for positive UX using psychological needs: Towards a user-centered method to identify technologies for UX in the car interior Valeria Bopp-Bertenbreiter, Stefan Klein, Doreen Engelhardt, Lena Rittger, Frederik Diederichs, Harald Widlroither, Matthias Peissner, Germany</p> <p>Designing a UX mobile app for hydration and sustainability tracking in academia Ana F. Curralo, Pedro Miguel Faria, Antonio Curado, Paula Azeredo, Sergio I. Lopes, Portugal</p> <p>User experience and service mode of telecare system with handheld devices Liang-Yuan Che, Chien-Hsiung Chen, Taiwan</p> <p>User experience of visual perception for smart central control system Hongyu Li, Chien-Hsiung Chen, Taiwan</p> <p>A user experience investigation on using augmented reality technology for explaining step-by-step instructions Tingyi S. Lin, Yin Ho Wang, Taiwan</p> <p>Value analysis of a smart product design by using bigdata mining Nan Hu, Jianghong Zhao, Danhua Zhao, China</p>	
28	Future Ecosystem Opportunities Co-Chairs: Minna Takala and Vesa Salminen, Finland	HFBMS
10:00-11:30 AHFE 13: MADISON 1	<p>Future ecosystem ensuring competitiveness in continuous co-evolution Vesa Salminen, Heikki Ruohomaa, Finland</p> <p>Matching B2B-partners in the sharing economy Luca Niederhauser, Toni Waefler, Sebastian Huber, Uta Juettner, Karina von dem Berge, Charles Huber, Simona Burri, Switzerland</p> <p>Regional innovation ecosystems fostering sustainable development Minna Takala, Taina Tukiainen, Finland</p> <p>Complex scenario design for investigating cognitive process for problem-solving collaboration Yingting Chen, Taro Kanno, Kazuo Furuta, Japan</p> <p>How information flows in industrial symbiosis and what are the gaps and discontinuities? Anne-Mari Järvenpää, Jussi Kantola, Vesa Salminen, Finland</p> <p>Are blockchain functions required for sharing economy business?: From the perspective of customers Young In Koh, Sung H. Han, Junseong Park, South Korea</p> <p>5G cottage network as technical platform in renewing innovations Heikki Ruohomaa, Vesa Salminen, Finland</p>	
29	Human-Autonomy Teaming and Simulation Applications Co-Chair: Catherine Neubauer, Niav Hughes Green and Kelly Dickerson, USA	HFSIM
10:00-11:30 AHFE 14: MADISON 2	<p>Novices as models of expert operators: Evidence from the NRC human performance test facility Jinchao Lin, Gerald Matthews, Niav Hughes, Kelly Dickerson, USA</p> <p>The importance of assessing both expert and non-expert populations to inform expert performance Stephen Mitroff, Emma Siritzky, Samoni Nag, Patrick Cox, Chloe Callahan-Flintoft, Andrew Tweedell, Dwight Kravitz, Kelvin Oie, USA</p> <p>Towards a consequential validity perspective for selecting participant groups in testing and evaluation studies for complex systems Nathan Lau, Ronald Boring, USA</p> <p>Studying control room operations on a shoestring budget - Reflections on the Rancor Microworld Thomas Ulrich, Ronald Boring, Roger Lew, USA</p> <p>Measuring driving simulator adaptation using EDA Marie-Anne Pungu Mwange, Fabien Rogister, Luka Rukonic, Belgium</p> <p>Impact of camera perspective and image throughput on human trust of a quadrupedal robot scout Ralph Brewer, Zachary Guyton, Tyler Long, Angela Vantreese, Mason Russell, Chad Kessens, Ericka Rovira, USA</p> <p>Evaluation of human-autonomy team trust for weaponized robotic combat vehicles Ralph Brewer, Catherine Neubauer, Anthony Baker, Angelique Scharine, Samantha Berg, Kristi Davis, Daniel Forster, Andrea Krausman, Kristin Schaefer, USA</p>	

30	Human Factors in Virtual Environments and Game Design II Chair: Byungjoon Kim, USA	HFGD
10:00-11:30 AHFE 15: MADISON 3	<p>VR-based serious games approach for a virtual installation of an ammonia compressor pack in the industrial refrigeration Fahmi Bellalouna, Robin Langebach, Volker Stamer, Mike Prakash, Mika Luimula, Anis Jedidi, Faiez Gargouri, Germany/Finland/Tunisia</p> <p>Hazardous training scenarios in virtual reality - a preliminary study of training scenarios for massive disasters in metaverse Mika Luimula, Jarmo Majapuro, Fahmi Bellalouna, Anis Jedidi, Brita Somerkoski, Timo Haavisto, Finland</p> <p>Exploring the use of virtual reality in co-reviewing designs Ian Garcia, Jouke Verlinden, Belgium</p> <p>Application of virtual reality to instructions of manual lifting analysis Byungjoon Kim, Jinkun Lee, Emma Kloth, USA</p> <p>Replacing common picking devices from augmented reality scenarios at warehouses by a laser projection system Jan Finke, Sebastian Hoose, Jana Jost, Moritz Roidl, Germany</p> <p>Design of control elements in virtual reality - Investigation of factors influencing operating efficiency, user experience and presence Niels Hinricher, Chris Schröer, Claus Backhaus, Germany</p> <p>Chinese characters factory - Design of children's Chinese character construction enlightenment game based on augmented reality technology Cai Xin, China</p> <p>Promoting a teaching platform for traditional skills + virtual reality technology Shujun Ban, Maria Rita Ferrara, China/Italy</p>	
	REFRESHMENTS: 11:30 - 12:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)	
31	Design Communication I: Global Issues Co-Chairs: Nuno Martins and Daniel Raposo, Portugal	HFCD
12:00 - 13:30 AHFE 1: CHELSEA	<p>Self-initiated practices in the urban community of Balteiro: Design challenges in a post-pandemic setting Nuno Martins, Daniel Brandão, Eliana Penedos-Santiago, Heitor Alvelos, Cláudia Lima, Susana Barreto, Ana Clara Roberti, Portugal</p> <p>Communication of sustainability through the wine label design: an experimental study Anna Firsova, Tao Xi, China</p> <p>Text vs. images: Understanding emotional expressions on social media during COVID-19 pandemic Qiuwen Li, USA</p> <p>Using diagrams to explain brand concepts and implement visual identities Rogério Ribeiro, Daniel Raposo, Rita Almendra, João Neves, Portugal</p> <p>Extraction of key factors to determining the acceptability of diet therapy based on syndrome differentiation of traditional Chinese medicine Yansong Luo, Chunrong Liu, Kong Fan Qiang, China</p>	
	<p>32 Creative Design and 3D Printing Co-Chairs: Emilio Rossi and Massimo Di Nicolantonio, UK/Italy</p>	
12:00 - 13:30 AHFE 2: UNION SQUARE	<p>Design and production of hybrid products Álvaro M. Sampaio, André Lima, Catia Silva, Ana Catarina Martins Miranda, António J. Pontes, Portugal</p> <p>A systematic literature review and prospects for the additive manufacturing in the creative industries Oluwayemisi Adebola Abisuga, Deon De Beer, South Africa</p> <p>DESK M. A. T. E.: Rapid prototyped desk for teaching in developing countries and emergency situations Massimo Di Nicolantonio, Emilio Rossi, Alessio D'Onofrio, Raffaella Massacesi, Italy/UK</p> <p>3D-printed inclusive modular system for underprivileged communities Emilio Rossi, Massimo Di Nicolantonio, Alessio D'Onofrio, Raffaella Massacesi, UK/Italy</p> <p>FlexKeys: Rapidly customizable 3D printed tactile input devices with no assembly required Ben Greenspan, Eric Gallo, Andreea Danielescu, USA</p> <p>The influence of filament type and number of layers on mechanical resistance: Contributions for the development of 3D printed prosthesis Amanda Coelho Figliolia, Erica Tobaró, Gilberto Gonçalves, Hamilton Mello, Frode Eika Sandnes, Fausto Orsi Medola, Brazil</p>	

33	Emotion in Fashion Design and Intersection Areas Co-Chairs: Ana Mónica Pereira Reis de Matos Romãozinho and Rafaela Norogrande, Portugal	HDCS
12:00 - 13:30 AHFE 3: SUGAR HILL	<p> Decoration and nostalgia - Historical study on visual matrices and forms of diffusion of Fêtes Galantes in the 20th century Vânia Carneiro De Carvalho, Brazil </p> <p> Somewhere between architecture and jewelry Mónica Romãozinho, Portugal </p> <p> Second skin's sensitivity: Memories and consciousness Rafaela Norogrande, Portugal </p> <p> Hand-made jewelry in the age of digital technology Livia Tenuta, Alba Cappellieri, Susanna Testa, Beatrice Rossato, Fernando Moreira da Silva, Italy </p> <p> Design practices within contemporary societies Cláudia Lima, Portugal </p>	
34	Augmenting Service Capabilities in the Post-Pandemic Era Co-Chairs: Kazuyoshi Hidaka and Kentaro Watanabe, Japan	HSSE
12:00 - 13:30 AHFE 4: SUTTON PLACE	<p> Development of a customer satisfaction classification model considering service failure in restaurant business Hisashi Masuda, Japan </p> <p> Influencer attributes and characterizations on tourists' intention to revisit destination in social media influencer marketing Ichii Kenta, Hisashi Masuda, Japan </p> <p> Effects of incentivized fake reviews on E-commerce markets Shotaro Okamoto, Hiroki Takahashi, Koji Kimita, Nariaki Nishino, Japan </p> <p> Human augmentation technology for teleworking in service/non-service industries: A survey in Japan Kentaro Watanabe, Bach Ho, Mai Otsuki, Yusuke Kishita, Maiko Kobayakawa, Japan </p> <p> Role of shared responsibility in service system Md Abul Kalam Siddike, Kazuyoshi Hidaka, Japan </p>	
35	Education for Creativity, Design and Innovation Co-Chairs: Martin Kröll and Leonardo Springer, Germany/Portugal	CIE
12:00 - 13:30 AHFE 5: MURRAY HILL	<p> Creative practice applied in a higher education class Leonardo Springer, Portugal </p> <p> Interdisciplinary learning - tomorrow's executive as creative problem solvers Simrun Sethi, USA </p> <p> Entrepreneurial education: the case of South American countries Ximena Morales Urrutia, Diana Morales Urrutia, Stalyn Avila Herrera, Ecuador </p> <p> A drawing system with an interface that can be used to impose limits and unleash creativity Hiromi Katsumata, Bo Liu, China </p> <p> Use of AI tools in learning platforms and the role of feedback for learning Martin Kröll, Kristina Burova-Keßler, Germany </p> <p> A certification framework for virtual reality and metaverse training scenarios in the maritime and shipping industry Evangelos Markopoulos, Aksel David Nordholm, Panagiotis Markopoulos, Stavroula Iliadi, Mika Luimula, John Faraclas, Finland </p>	

36	Laurence R. Young Memorial Panel on Human-Centered Automation Applications in Spaceflight Co-Chairs: Leia Stirling and Dan Buckland, USA	HCASSA
12:00 -13:30 AHFE 6: BOWERY	<p>Evaluation of a novel display element and control mode for improving piloted lunar landing Torin Clark, Carlo Pinedo, USA</p> <p>Autonomous ultrasound vascular localization performed by commercial robotic arm with human as user and controller in spaceflight Siobhan Oca, Daniel Buckland, USA</p> <p>Wearable technology as a dynamic interface/interaction platform for aerospace systems Brad Holschuh, USA</p> <p>Methods for evaluating neurovestibular and sensorimotor performance using augmented reality and wearable sensors Hannah Weiss, Leia Stirling, USA</p> <p>Co-estimates of mental workload and situation awareness through biosignal monitoring in human-autonomy teaming Savannah Buchner, Jacob R. Kintz, Johnny Zhang, Neil Bannerjee, Torin Clark, Allison Anderson, USA</p> <p>Virtual reality /augmented reality applications to support human performance and astronaut health during spaceflight exploration missions Ana Diaz Artiles, Renee Abbott, Nathan Keller, USA</p> <p>NASA's identified risks of adverse outcomes due to inadequate human systems integration architecture in human spaceflight Daniel Buckland, Megan Parisi, Kaitlin Mctigue, Shu-Chieh Wu, Tina Panontin, Gordon Vos, Devan Petersen, Alonso Vera, USA</p>	
37	Human Factors in Aviation I Co-Chairs: Lori Smith and Amelia Kinsella, USA	AVI
12:00 -13:30 AHFE 7: BRYANT PARK	<p>Advanced air mobility: Cabin of the future rescue helicopters Ivana Moerland-Masic, Fabian Reimer, Peter Weiland, Thomas Weber, Thomas-Mathias Bock, Frank Meller, Bjoern Nagel, Germany</p> <p>Early callsign highlighting using automatic speech recognition to reduce air traffic controller workload Shruthi Shetty, Hartmut Helmke, Matthias Kleinert, Oliver Ohneiser, Germany</p> <p>Safety and privacy in urban air mobility (UAM) - a user centric design approach providing insights into people’s preferences for UAM cabin designs Fabian Reimer, Ivana Moerland-Masic, Albert End, Jana Schadow, Thomas-Mathias Bock, Frank Meller, Bjoern Nagel, Germany</p> <p>Continuing development of a novel framework for visual air traffic controller tasks: Determining metrics for evaluating spatial relationships Lori Smith, Amelia Kinsella, Katherine Berry, Rebecca Collins, USA</p> <p>Human factors analysis of strengths and challenges in air traffic control training Jason Kring, R. Jordan Hinson, Ryan Dlugash, Michael Sawyer, Tara Gibson, Edward Austrian, USA</p>	
38	Diagnostic System and Techniques Co-Chairs: Huifang Shang and Mehdi Boukhechba, China/USA	EHMD
12:00 -13:30 AHFE 8: COLUMBUS CIRCLE	<p>The positive distraction effect of toys in children's venous blood sampling Huifang Shang, Guo Xincheng, Chuanshun Wang, China</p> <p>Augmented reality application for HoloLens dedicated to the accuracy test: Evolution and results Julien Barbier, Franck Gechter, Sylvain Grosdemouge, France</p> <p>User requirements for a health care service based on point-of-care testing in the context of ambulatory care and telemedicine for older people Kamalatharsi Mutuura, Mario Niederhauser, Nico Erb, Freddie Van Den Anker, Switzerland</p> <p>Phase-based assessment of arthroscopic skill using motion smoothness metrics: A simulator-based proof-of-concept study Simar Singh, Chelse Vanatter, Ravikiran Singapogu, USA</p> <p>AR-coach: Using augmented reality (AR) for real-time clinical guidance during medical emergencies on deep space exploration missions Mahdi Ebnali, Andrew Goldsmith, Barbara Burian, Byonne Atamna, Nicole Duggan, Chanel Fischetti, Steven Yule, Roger Dias, USA</p> <p>A smartwatch based system for monitoring fluid consumption of end stage kidney patients Mehdi Boukhechba, Mingyue Tang, Brendan Bowman, Jamie Zoellner, Emaad Abdel-Rahman, USA</p> <p>Workflow analysis of a blood bank: An Indian case study Kriti Karmakar, Pradip Kumar Ray, India</p>	

39	Cognitive Computing and Internet of Things (IoT) Co-Chairs: Zoheir Sabeur and Kenneth Lim, UK/USA	CCIoT
12:00 -13:30 AHFE 9: FLATIRON	<p>Adaptive weighted 3D object image inference model based on image complexity Yueqi Liu, Pu Meng, Zhuoyue Diao, Xin Meng, Liqun Zhang, Xiaodong Li, China</p> <p>Computational aesthetics of visual artworks: Review and outlook Pu Meng, Yueqi Liu, Liqun Zhang, Xiaodong Li, China</p> <p>Digital twins for the intelligent detection of malicious activities in urban spaces Zoheir Sabeur, Alessandro Bruno, Liam Johnstone, Marouane Ferjani, Djamel Benaouda, Deniz Cetinkaya, Banafshe Arbab-Zavar, Muntadhar Sallal, Benjamin Hardiman, UK</p> <p>Cyber-physical behaviour detection and understanding using artificial intelligence Zoheir Sabeur, Alessandro Bruno, Liam Johnstone, Marouane Ferjani, Djamel Benaouda, Banafshe Arbab-Zavar, Deniz Cetinkaya, Muntadhar Sallal, UK</p> <p>Office-based workplace monitoring and time-aware feedback by using ambient IoT sensors Herwig Zeiner, Roland Unterberger, Dietmar Maurer, Silvia Russegger, Lucas Paletta, Austria</p> <p>Time-aware and spatial oriented driven User Interfaces in the context of safe zones for underground mining Norbert Gomolla, Herwig Zeiner, Roland Unterberger, Raúl Miñón Jiménez, Philipp Hartlieb, Germany</p> <p>Internet of things security policy in enterprises Michal Trziszka, Poland</p> <p>Application of industry 4.0 tools: Integrated building site payment management portal for construction works Lekan Amusan, Terdoo Udendeh, Clinton Aigbavboa, Nigeria/South Africa</p>	
40	Apparel Ergonomics, Engineering and Performance Co-Chairs: Gianni Montagna and Rachele Didero, Portugal/Italy	HFATE
12:00 -13:30 AHFE 10: GRAMERCY	<p>The role of teaching advanced technological knowledge to enhance experimental creativity in knit design Martina Motta, Delia Dumitrescu, Italy</p> <p>The wardrobe for patients with Autism Spectrum Disorder Carla Morais, Joana Pinto, Gianni Montagna, Cristina Carvalho, Portugal</p> <p>A comprehensive body sizing system for international fashion consumers and apparel manufacturing Tracy Mok, Xin Zhang, Ningrong Xie, Jin-tu Fan, Hong Kong</p> <p>The textile designer skills to face the emerging challenges of textile industry and the role of academia Sonia Seixas, Gianni Montagna, Maria João Felix, Portugal</p> <p>Infrared thermal mapping of young male body following different physical exercises Xinbo Wu, Rong Liu, Mohammad Mohiuddin Choudhury, Hung Kay Daniel Chow, Chongyang Ye, Hoi Hung Ho, Hong Kong</p> <p>CAPABLE: Engineering, textile, and fashion collaboration, for citizens' awareness and privacy protection Rachele Didero, Giovanni Maria Conti, Italy</p>	
41	Product Design and Ergonomic Evaluation Co-Chairs: Tamaki Mitsuno and Xinyang Zhu, Japan/China	PEHF
12:00 -13:30 AHFE 11: MADISON SQUARE	<p>Ergonomics evaluation methods for civil aircraft cockpit layout Xinyang Zhu, Yang Zhou, China</p> <p>Effect of the backpack load on students' discomfort Nutan Ashok Chougule, Aliuddin Ahmed, Yueqing Li, USA</p> <p>Effect of the shoe heel height on lower-limb muscle activity Tamaki Mitsuno, Ami Sugawara, Japan</p> <p>Effects of carbon fiber insole on lower-extremity muscle activation and wearing comfort during treadmill running Myeonghoon Ko, Tiejun Ma, Shuping Xiong, South Korea</p> <p>Intervention of arch support: A quantitative study Mei Ying Kwan, Kit Lun Yick, Joanne Yip, Chi Yung Tse, Hong Kong</p> <p>Cycling stability and symmetry using a corrective bib short Senne Henderieckx, Alexander Van Gastel, Jochen Vleugels, Sam Smets, Stijn Verwulgen, Belgium</p> <p>Smart detective gloves (PROSAFE) for reducing carpal tunnel syndrome injuries Saed Amer, Asmaa Alseredi, Marwah Aldhanhani, UAE</p>	

<p>42</p>	<p>Comfort and Interior Considerations in Automated Vehicles Co-Chairs: Florian Kretzschmar and Vanessa Stange, Germany</p>	<p>RR</p>
<p>12:00 - 13:30 AHFE 12: TURTLE BAY</p>	<p>Detection of discomfort in autonomous driving via stochastic approximation Florian Kretzschmar, Matthias Beggiato, Alois Pichler, Germany</p> <p>The public requirements on interior facilities of highly automated vehicles in China Qingkun Li, Zhenyuan Wang, Wenjun Wang, Chao Zeng, Weimin Liu, Jiawei Mu, Quan Yuan, Bo Cheng, China</p> <p>Evaluation of the seating environment of an autonomous taxi on user needs – an online survey investigation Manuel Kipp, Caroline Guo, Klaus Bengler, Germany</p> <p>Take a seat! - Passengers' perceived risk and driving behavior preferences during automated driving in urban traffic depending on the seat position Vanessa Stange, Sarah Helweg, Mark Vollrath, Germany</p> <p>Experimental setup for assessing drivers' experiences of reclined sitting posture in automated vehicles Anna-lisa Osvalder, Melina Makris, Sweden</p> <p>Construction of models for predicting arousal level in advance based on features of face images Yuki Mekata, Miwa Nakanishi, Japan</p>	
<p>43</p>	<p>Usability and User Experience Applications II Co-Chairs: Bolin Yang and Jorge Gil Tejada, China/Mexico</p>	<p>UUE</p>
<p>12:00 - 13:30 AHFE 13: MADISON 1</p>	<p>User experience design of online education interactive product for international students based on SAPAD and scenario thinking Bolin Yang, Ren-ke He, China</p> <p>User Experiences derived from mass-distribution virtual products are integrated by the spatio-temporal component Jorge Gil Tejada, Lorena Olmos Pineda, Mexico</p> <p>User experience of Taiwan railway ticket vending machine Ching Yi Lee, Ching-I Chen, Meng-Cong Zheng, Taiwan</p> <p>Comparative study on user experience of ATM cardless withdrawal services Joon Ming Nigell Lay, I Wen Yen, Meng-Cong Zheng, Taiwan</p> <p>Verification of the effects of a personalized evacuation alert using behavioral or location information on the sense of urgency in a disaster Tomoki Yano, Kouyou Otsu, Tomoko Izumi, Japan</p> <p>On mobile augmented reality and user experience: A reflection and future research agenda Ana Faria, Célia Pinto, Emanuel Sousa, Portugal</p> <p>The effects of website design quality on the success rate of online web design agency Ebrahim Jabbari, Chokeanand Bussracumpakorn, Thailand</p> <p>Mask design implications based on mask fit and performance across different age groups Linsey Griffin, Minji Yu, Alison Cloet, Neil Carlson, Susan Arnold, William Durfee, USA</p>	
<p>44</p>	<p>Ergonomic Developments in Systems Interactions Co-Chairs: Ricardo Vigarío and Isabel L. Nunes, Portugal</p>	<p>SYSI</p>
<p>12:00 - 13:30 AHFE 14: MADISON 2</p>	<p>RehbBrain: A platform with serious games for perceptual and cognitive rehabilitation Sandrina Rodrigues, Claudia Quaresma, Krupa Hansra, Patricia Santos, Nidia Grazina, Ana Antunes, Bruno Mendes, Carla Quintão, Ricardo Vigarío, Portugal</p> <p>Lower limb exoskeletons some examples of application Catarina Santos, Ana Teresa Videira Gabriel, Cláudia Quaresma, Isabel L. Nunes, Portugal</p> <p>Ergonomic assessment of warehouse activities in an electric utilities company Ana Teresa Videira Gabriel, Maria Mendes, Isabel L. Nunes, Portugal</p> <p>Formative evaluation of virtual reality materials for inducing cultural awareness Manami Nozaki, Kazumi Watanabe, Taeko Fukuda, Hiromi Ogasawara, Japan</p> <p>Leveraging the Kinect sensor to correct improper bowling form Brisaac Johnson, Chris Crawford, USA</p> <p>Psychophysics and user experience: Perceptual differences in the effort required to operate virtual push-buttons Gerhard Rinkenauer, Jai Prakash Kushvah, Marc Grosjean, Germany</p>	

45	Digital Business Transformation and Change Leadership I Chair: Heikki Ruohomaa and Vesa Salminen, Finland	HFBMS
12:00 - 13:30 AHFE 15: MADISON 3	<p>Systems intelligence, perceived performance and wellbeing Satu Jumisko Pyykko, Juha Törmänen, Kimmo Vanni, Raimo P Hämäläinen, Esa Saarinen, Finland</p> <p>Field research of environment identity system based on corporate identity system Wei Ding, Xinyue Yang, China</p> <p>On demand loans real time service: Essential user feature by the banks in Society 5 Elizabeth Koumpan, Ram Ravishankar, Periasamy Girirajan, USA</p> <p>Smart countryside community in quadrable helix development Heikki Ruohomaa, Minna Takala, Vesa Salminen, Finland</p> <p>Linkage between the usage of digital technologies and emotional competence Asta Savanevičienė, Lina Girdauskiene, Rosita Jocytė, Lithuania</p> <p>Smart ships and the evolution of cruise target: How smart technologies are affecting the relationship of customers with spaces and services Giuseppe Carmosino, Andrea Ratti, Italy</p> <p>Transforming energy marketing practices for enhanced solar PV adoption Shah Rukh Shakeel, Arto Rajala, Finland</p> <p>Assessment of marketing strategies adoption and competitiveness among quantity surveying firms in the digitization era Beauty John, Samuel Adekunle, Success Enebeli, Clinton Aigbavboa, South Africa</p>	
13:30-14:30 LUNCH AT THE RESTAURANT OF YOUR CHOICE		
46	Advanced Learning Technologies Co-Chairs: Cezary Biele and Qiaochu Liu, Poland/China	TELS
14:30-16:00 AHFE 1: CHELSEA	<p>Movement and cognition from the perspective of new technologies Cezary Biele, Poland</p> <p>Design interactive teaching tools of programming language for senior high school students Yu Ting Huang, Chien-Hsu Chen, Taiwan</p> <p>3D modeling logs based design process mining method and its application for design education Qiaochu Liu, Wen Gao, Ziyu Huang, Weixin Huang, China</p> <p>NAO robot as scrum master: Results from a scenario-based study on building rapport with a humanoid robot in hybrid, higher education settings Ilona Buchem, Niklas Baecker, Germany</p> <p>Measuring impact of communication medium on training effectiveness Brett Israelsen, Marielle Machacek, Peggy Wu, Stephen Gilbert, James Oliver, USA</p> <p>From disembodied to embodied: The embodied transformation of children's architectural education learning situation design Jing Xu, Duoduo Zhang, China</p> <p>Methodology to evaluate the impact of learning with the use of physical modeling of structural prototypes Eva Velez, Dolores Chica, Marcial Calero, Laura de Jesús Calero Proaño, Ecuador</p> <p>Application of scaffolds in the computer-supported intentional learning environment Amic Ho, Hong Kong</p>	
47	Theories, Methods and Teaching Co-Chairs: Giuseppe Di Bucchianico and Daniele Busciantella-Ricci, Italy	DI
14:30-16:00 AHFE 2: UNION SQUARE	<p>Design for inclusive attitude: Towards a theoretical framework Daniele Busciantella-Ricci, Carlos Aceves-Gonzalez, Alessandra Rinaldi, Italy</p> <p>Teaching eco inclusive design: An innovative educational path Giuseppe Di Bucchianico, Italy</p> <p>Responsive and flexible systems for the non-typical user: A design methodology to observe the outliers Inés Alvarez-Icaza Longoria, Sergio Navarro Tuch, Rogelio Bustamante-Bello, Arturo Molina, Ariel Lopez Aguilar, Mexico</p> <p>An AI-assisted design method for "Huayao cross-stitch" patterns based on semantics Junchun Chen, Tie Ji, Jian Peng, Bin Wang, China</p> <p>A contemporary investigation into anthropometric dimensions and applications for design 70 years after the publication of the average man Robert Pettys Baker, Jerritt Smith, Megan Clarke, Emily Cook, Baonhia Xiong, Minji Yu, Linsey Griffin, USA</p>	

48	Human Factors in Software and Systems Engineering I Co-Chairs: Benjamin Roehm and Marcel Saager, Germany	HFSSE
14:30-16:00 AHFE 3: SUGAR HILL	<p>KONECT: Implementation and extension of a method for the development of safety-critical human-machine interaction interfaces Marcel Saager, Jan Patrick Osterloh, Yvonne Brück, Germany</p> <p>A new conceptual design for subsea charging station Jing Luo, You Wang, Xinyu Zhao, Jiatai Zhang, China</p> <p>Optimization of signal reconstruction AUTOENCODER for sensor fault detection in nuclear emergencies Jeonghun Choi, Seung jun Lee, South Korea</p> <p>Concept for the selection and positioning of sensor technology in the development of advanced systems Benjamin Roehm, Germany</p> <p>Procedure parsing: A method for parsing handwritten documents into computer-based procedures Stacey Whitmore, USA</p> <p>Implementing Alexa virtual assistant in learning a new language: Students' perception analysis Omar Córdor-Herrera, Jorge Cruz-Cárdenas, Carlos Ramos-Galarza, Ecuador</p> <p>Electronic prototype for the acquisition, processing and visualization of cardiac signals Eduardo Pinos-Vélez, Mateo Valverde-Jara, Ismael Narvaez-Miranda, Ecuador</p>	
49	Human Performance in Air, Maritime, and Ground Transportation Co-Chairs: Toru Nakata and Jooyoung Park, Japan/USA	HERRP
14:30-16:00 AHFE 4: SUTTON PLACE	<p>Adapting the human factors analysis and classification system for commercial fishing vessel accidents Peter Zohorsky, Holly Handley, USA</p> <p>Decision support systems for route planning: Impacts on performance and trust Mary Frame, Jessica Armstrong, Bradley Schlessman, USA</p> <p>Increasing the usability of audio alerts with voice instructions on ship's bridges Felix-Marcel Petermann, Ole Andreas Alsos, Erik Styhr Petersen, Malene Liavaag, Julie Karine Schmidt Solberg, Norway</p> <p>Exploring multitasking performance and fatigue with the MAT-B II: A narrative review Melissa Ngo, Siobhan Banks, Philippe Rauffet, Australia</p> <p>The application of human factors in wake vortex encounter flight simulations for the reduction of flight upset risk and startle response Frédéric Rooseleer, Barry Kirwan, Elizabeth Humm, Diana Paola Moreno Alarcon, Belgium</p> <p>Influence of Head up display on visual fatigue and eye-hand discoordination in runway incursion scenarios Xiangyu Ge, Shuyu Shao, Yingqian Meng, China</p> <p>Health crisis management and resilience factors: A comparative study in two sectors Cecilia De La Garza, Nora Oufi, France</p>	
50	Competitiveness and Productivity in Contemporary Organization Co-Chairs: Nicolás Palomares and Christian Plesker, Spain/Germany	APMPC
14:30-16:00 AHFE 5: MURRAY HILL	<p>Augmented reality-based programming of robot arms Vladimir Kutscher, David Bassauer, Thomas Dasbach, Reiner Anderl, Germany</p> <p>Configuration of a web-based digital twin using a modular and flexible simulation chain Christian Plesker, Vladimir Kutscher, David Bassauer, Reiner Anderl, Germany</p> <p>Medical devices analysed from the human factors and ergonomics in engineering design point of view: Case study Adrian Morales Casas, Jose Laparra, Nicolás Palomares, Carlos Atienza, Lorenzo Solano-García, Spain</p> <p>The South African automotive industry's competitiveness and supply chain integration challenges John M. Ikome, Timothy Laseinde, Grace M. Kanakana Katumba, South Africa</p> <p>The competitive and productivity challenges in developing nations: A case study of South African automotive industry John M. Ikome, Timothy Laseinde, Grace M. Kanakana Katumba, South Africa</p> <p>Effect of inspector's characteristics on defect detection in appearance inspection utilizing peripheral vision Ryosuke Nakajima, Japan</p> <p>Barriers for implementing reverse logistics in South African construction organizations Unathi Makalima, Clinton Aigbavboa, Ifije Ohiomah, Nita Sukdeo, South Africa</p> <p>Cost estimations of water pollution for effective management and water resources Anne Mumbi and Tsunemi Watanabe, Japan</p>	

51	Research and Education in Design Chair: Rita Assoreira Almendra, Portugal	HDCS
14:30-16:00 AHFE 6: BOWERY	<p>Symbiosis design: An interdisciplinary methodology José Silveira Dias, Portugal</p> <p>Sustainability (still) on demand: Tools for next generation designers Rute Gomes, Portugal</p> <p>Community engagement methodology for the academic design curriculum Caio Miolo de Oliveira, Rita Assoreira Almendra, Ana Rita Lourenço, Tiago Leitão, Portugal</p> <p>The challenge of the development of complexity approach skills in design education. A study with design students Manuela Maia, Portugal</p> <p>Interdisciplinarity and collaboration - a study focusing on experienced biodesign practitioners Andrea Bandoni, Rita Almendra, Gabriela Forman, Portugal</p> <p>[de]territorialization: The role of our brain in a technological world Luis Miguel Ginja, Portugal</p>	
52	Behavioral Cybersecurity Co-Chairs: Wayne Patterson and Valarie Yerdon, USA	CYBER
14:30-16:00 AHFE 7: BRYANT PARK	<p>A metric to assist in detecting international phishing or ransomware cyberattacks Wayne Patterson, USA</p> <p>Insider threat: Cognitive effects of modern apathy towards privacy, trust, and security Valarie Yerdon, Peter Hancock, USA</p> <p>A didactic tool for digital forensics Ebru Cankaya, Anindita Palit, Elissa Williams, USA</p> <p>A closer look at insider threat research Ivan Kong, Masooda Bashir, USA</p> <p>The impact of technology threat avoidance theory constructs on cybersecurity avoidance behaviour Hamed Alqahtani, Saudi Arabia</p>	
53	Emerging Research Innovations in Service Design, User Experience, and Design Research: Industry, Business, and Education Co-Chairs: Kim Mitchell and Debra Satterfield, USA	HSSE
14:30-16:00 AHFE 8: COLUMBUS CIRCLE	<p>Interdisciplinary design teaching: A pedagogical approach to train hands-on UX/UI designers Sam Anvari, Gabriella Hancock, USA</p> <p>Bridging the gap between industry and education: Engaging design professionals in the education of student designers Julie Hurley, Nico Raddatz, Debra Satterfield, USA</p> <p>Designing a multi-disciplinary class to create a social robot for Alzheimer's Kimberly Mitchell, Luke MacDougall, John Hooten, Robert Bray, Xiaopeng Zhao, USA</p> <p>"Voices of design: People, stories and innovation" service design through university and community engagement Debra Satterfield, Jose Rivera-Chang, David Teubner, Tom Tredway, Wesley Woelfel, USA</p> <p>Reasons why students decide to leave a university Hiromi Masunaga, Tianni Zhou, USA</p>	
54	Design Strategies Co-Chairs: Carmen Bruno and Sylvain Bruni, Italy/USA	CIE
14:30-16:00 AHFE 9: FLATIRON	<p>An evaluation of material customized modular protective helmets Parth Shah, Tejeswar Yarlagadda, Ameersing Luximon, Dong An, Yan Luximon, Hong Kong</p> <p>An operational framework of methods for designing ethical and sustainable future digital scenarios Marita Canina, Carmen Bruno, Eva Monestier, Italy</p> <p>Introducing PATI: The Pareto analysis for technology insertion - a human-centered methodology to identify and prioritize innovation in complex systems Sylvain Bruni, USA</p> <p>Monetization canvas framework to efficiently assess the impact of research outcome Muthu Singaram, Vr Muraleedhran, Mohanasankar Sivaprakasam Sivaprakasam, Shashwat Pathak, India</p> <p>Understanding corporate innovation readiness and frequency factors with the Democratic Survival, Mirrored and Compulsive (DSMC) framework Evangelos Markopoulos, Kwame Ofori, UK</p> <p>An ESG-SDGs alignment and execution model based on the Ocean Strategies transition in emerging markets Evangelos Markopoulos, Maria Barbara Ramonda, UK</p> <p>Gamification in a democratic pro-environmental behaviour model towards achieving effective ESG corporate strategies Evangelos Markopoulos, Alejandro Vera Ramirez, Panagiotis Markopoulos, Hannu Vanharanta, UK/Finland</p>	

55	Assistive Technology and Sensory Accessibility Co-Chairs: Claudia Becchimanzi and Irene Ballester, Italy/Austria	HFAAT
14:30-16:00 AHFE 10: GRAMERCY	<p>On the stimulation and visibility by blinking light emitting block for low vision Shoichiro Fujisawa, Masaki Okegawa, Kenji Sakami, Jyunji Kawata, Yoshio Kaji, Mineo Higuchi, Shin-ichi Ito, Jiro Morimoto, Japan</p> <p>Acceptability of assistive robotics by older adults: Results from a human-centered qualitative study Claudia Becchimanzi, Ester Iacono, Alessia Brischetto, Italy</p> <p>Automated vision-based toilet assistance for people with dementia Irene Ballester, Martin Kampel, Austria</p> <p>Psychogeography with Jack B. Yeats Art Sounding Gallery: Augmented reality locative experience for blind people Svetlana Rudenko, Mads Haahr, Ireland</p> <p>Use of hearing aids at work: Results of a questionnaire for the analysis of comfort and perceived benefit Claudia Giliberti, Fabio Lo Castro, Maria Patrizia Orlando, Raffaele Mariconte, Maurizio Diano, Italy</p> <p>Verifying screen reader accessibility of apps developed using Google Flutter Alireza Darvishy, Switzerland</p>	
56	Management and Leadership I Co-Chairs: Patricia Castillo-Galván and Clinton Aigbavboa, Mexico/South Africa	HFML
14:30-16:00 AHFE 11: MADISON SQUARE	<p>Digital technology as a tool for the growth of Mexican SMEs in San Luis Potosi Patricia Castillo-Galván, Juan José Mendez Palacios, Mexico</p> <p>Securing project goals: The art of guarding against construction project closure Olushola Akinshipe, Clinton Aigbavboa, Douglas Aghimien, Ayodeji Oke, South Africa</p> <p>Failure of construction projects: Exploring the impacts on the society Olushola Akinshipe, Clinton Aigbavboa, Nokulunga Mashwama, Didi Thwala, South Africa</p> <p>Causes of conflict in the South African construction industry Matthieu Ilunga Bodika, Clinton Aigbavboa, Ifije Ohiomah, Nita Sukdeo, South Africa</p> <p>Learning from existing errors: External stakeholders' impact on road infrastructure projects Opeoluwa Akinradewo, Winnie Mushatu, Nokulunga Mashwama, Clinton Aigbavboa, Didi Thwala, South Africa</p> <p>Exploration of building information modelling in the Nigerian construction industry Benjamin Sunkanmi Adeyemi, Helen Ifedolapo Babalola, Clinton Aigbavboa, Wellington Didibhuku Thwala, South Africa</p> <p>New information and communication technologies for public participation in Ecuadorian land management. Case study Cuenca Natalia Pacurucu, Lorena Vivanco, Boris Orellana-Alvear, Alfredo Ordoñez, Ecuador</p> <p>Structural challenges to adopt digital transformation in industrial organizations: A multiple case study Faisal Imran, Khuram Shahzad, Aurangzeab Aurangzeab Butt, Jussi Kantola, Finland</p>	
57	Anthropometry Chair: Haining Wang, China	ED
14:30-16:00 AHFE 12: TURTLE BAY	<p>Large-scale Chinese FSTT database for finite element modeling Baoqi Zhou, Wang Haining, Ziyao Zhao, China</p> <p>Development of a finite element head model for contact pressure study of N95 respirator Ziyao Zhao, Wang Haining, Baoqi Zhou, China</p> <p>The effects of physical load and clamping force on prolonged wearing of AR glasses Yujia Du, Wang Haining, Yuxin Ju, Meng Qiu, China</p> <p>Development of 3D reference headforms for Chinese adults Wang Haining, Tong Z, K. Liu, China</p> <p>External ear shape classification of Chinese adults for ergonomic product design Wang Haining, K. Liu, Yan Yan, Chang Liu, China</p> <p>Portuguese female firefighters anthropometrics: Preliminary results Miguel Carvalho, Rachel Boldt, Fernando Ferreira, Susan Ashdown, Linsey Griffin, Anna Sophia Moraes, Portugal</p>	

58	Emotional Engineering I Co-Chairs: Keiichi Muramatsu and Yoshimasa Tawatsuji, Japan	APD
14:30-16:00 AHFE 13: MADISON 1	<p>Design of firefighter's special call unit based on emotional design theory Yonghong Wang, Ying Cao, China</p> <p>Emotional design study for blind box toys Xiong Yi, Bing Xiao, China</p> <p>Job search app design for college students based on emotional experience Puning Wang, Bing Xiao, China</p> <p>Color matching method of HCI interface design driven by aesthetic perception Qi Li, Pei Yan, Wang Wei, Yihang Du, China</p> <p>The emotionalized design of intangible cultural heritage: The case of Zhuanqiao paper-cut Marcelo Zhao Li Yan, Brazil</p> <p>Emotional design: Affective evaluation methods to assess the emotional response of 6-11 years children Ester Iacono, Claudia Becchimanzi, Alessia Brischetto, Italy</p> <p>Design method of personalized HMI for automobile dashboard Zilu Chen, Bo Liu, China</p>	
59	Systemic-Structural Activity Theory Chair: Inna Bedny, USA	CN
14:30-16:00 AHFE 14: MADISON 2	<p>Application of ExpressDecision2 in user-centered and shared-with-expert decisions under risk and uncertainty Alexander M. Yemelyanov, Rahul Sukumaran, Alina Yemelyanov, USA</p> <p>The psyche of "self" in students' systemic and structural interaction with online teaching-learning platforms Mohammed Aminu Sanda, Ghana</p> <p>Surgeon's performance: Analogy with aircraft pilot's challenges Ephraim Suhir, Inna Bedny, USA</p> <p>Modelling and simulation with biofeedback for operators of human-machine systems Oleg Zhvarevsky, Sergey Roudnitsky, Russia</p> <p>Assertiveness in the system of behavioral strategies of the modern youth Larysa Zhuravlova, Inna Bedny, Vitaliya Luchkiv, Liubov Pomytkina, Iryna Grechukha, Natalia Muzhanova, Ukraine</p> <p>Rationale and application of express algorithms for mental health assessment in professional selection and screening examinations Sergey Lytaev, Russia</p>	
60	Design Research Through Complex Scenarios and Complex Products I Chair: Tiantian Li, China	ED
14:30-16:00 AHFE 15: MADISON 3	<p>Intelligent cabin innovation through user-behavior card sorting co-creation workshop Zhongjie Xue, Danhua Zhao, China</p> <p>User's emotional feedback to automobile cabin's dynamic colored light Yan Wang, Danhua Zhao, China</p> <p>Toward adaptive trust management for human-automation teaming using an instance-based learning cognitive model Wen-Li Dong, Wei-Ning Fang, Bei-yuan Guo, Jian-xin Wang, Hai-feng Bao, China</p> <p>Employing synesthesia-based warnings to enhance road safety during an automated driving Liang Zhuo, Danhua Zhao, China</p> <p>How will the smart cockpits develop and facilitate a more social space in the possible, emerging, future business models of ownership? Bingquan Wang, Danhua Zhao, China</p> <p>Design innovation based on classification model of intelligent products Zhongjie Xue, Danhua Zhao, China</p> <p>Virtual models of architectural spaces: methods for exploration, representation and interaction through narratives and visual grammars Carlos Manuel Figueiredo, Sofia Machado Santos, Portugal</p>	
REFRESHMENTS: 16:00 - 16:30 • ROOM: EMPIRE BALLROOM (LEVEL 2)		

61	Safety Culture and Human Factors Co-Chairs: Anne Garcia and Frank Guldenmund, USA/Netherlands	SMHF
16:30-18:00 AHFE 1: CHELSEA	<p>Towards an action-oriented safety culture maturity scale Barry Kirwan, France</p> <p>Construction and evaluation of influencing factor evaluation system model for campus safety awareness Hang Shang, Weifu Wang, Ming Zhao, China</p> <p>Effectiveness and impact of new employee orientation Lu Yuan, Chris Newton, USA</p> <p>Reactor type and site-based different safety culture precursor analysis for incidents in nuclear power plants Wooseok Jo, Seung jun Lee, Byung Joo Min, South Korea</p> <p>Learning from speaking up by learning to speak up Dimmy Van Dongen, Frank Guldenmund, Jop Groeneweg, Irene Grossmann, Peter Roelofsma, Nienke Luijcks, Netherlands</p> <p>Adaptive shared mental models for medical teams Gülşay Canbalolu, Laila Van Ments, Jan Treur, Jan Klein, Peter H. M. P. Roelofsma, Netherlands</p> <p>Exploring the meaning of safety in the context of health care Frank Guldenmund, Jop Groeneweg, Irene Grossmann, Peter Roelofsma, Dimmy Van Dongen, Nienke Luijcks, Netherlands</p> <p>How petrochemical industry survive in post-COVID-19: A STAMP-based system science research & recommendations for large-scale sociotechnical systems Wei Dai, Zhiqian Hu, Biwen He, China/UK</p>	
62	Ergonomic Risk Assessment Methods and Techniques Co-Chairs: Alessio Silveti and Francesco Lolli, Italy	PEHF
16:30-18:00 AHFE 2: UNION SQUARE	<p>Comparing semiautomatic Rapid Upper Limb Assessments (RULA): Azure Kinect versus RGB-based machine vision algorithm Antonio Maria Coruzzolo, Francesco Lolli, Nazareno Amicosante, Hrishikesh Kumar, Pramod Thupaki, Saurav Agarwal, Italy</p> <p>Prediction of muscle fatigue during dynamic exercises based on surface electromyography signals using Gaussian classifier Yeok Tatt Cheah, Ka Wing Frances Wan, Joanne Yip, Hong Kong</p> <p>Musculoskeletal pain and psychosocial factors to predict car crash involvement Rachel Shichrur, Navah Ratzon, Israel</p> <p>Integrating sEMG into NIOSH protocol: A manual material handling risk assessment in the fruit and vegetable department of a supermarket Alessio Silveti, Alberto Ranavolo, Giorgia Chini, Tiwana Varrecchia, Antonella Tatarelli, Lorenzo Fiori, Adriano Papale, Ari Fiorelli, Francesco Draicchio, Italy</p> <p>Quantitative and qualitative workload assessment in steep terrain forest operations: Fostering a safer work environment through carriage automation Giovanna Ottaviani Aalmo, Norway</p>	
63	Methods and Future Technologies in Transportation Co-Chairs: Takahisa Nakamura and Philip Joisten, Japan/Germany	RR
16:30-18:00 AHFE 3: SUGAR HILL	<p>Effectiveness of bollards in deterring pedestrians from running into the roadway Takahisa Nakamura, Yohsuke Yoshioka, Japan</p> <p>Crowdsourced assessment of 227 text-based eHMIs for a crossing scenario Pavlo Bazilinskyy, Dimitra Sodou, Joost de Winter, Netherlands</p> <p>Pedestrians' crossing decisions while interacting with automated vehicles – insights from a longitudinal study Philip Joisten, Nina Theobald, Bettina Abendroth, Germany</p> <p>Visual dictionary of human action in vehicular environment using computer vision Abhijit Sarkar, USA</p> <p>Acceptance of app based interaction between automated micro vehicles (AMV) and their users Vivian Lotz, Eva-Maria Schomakers, Martina Ziefle, Germany</p> <p>A primer on the human readiness level scale (ANSI/HFES 400-2021) Kelly Steelman, Holly Handley, USA</p> <p>Task modelling and model validation for car driving David Käthner, Anja Katharina Huemer, Klas Arne Ihme, Meike Jipp, Germany</p>	

64	Human Factors, Business Management and Efficiency Co-Chairs: Henrijs Kalkis and Zenija Roja, Latvia	SOE
16:30-18:00 AHFE 4: SUTTON PLACE	<p>Application of information technologies for social inclusion: Current trends and future prospective Biruta Sloka, Ieva Brence, Henrijs Kalkis, Latvia</p> <p>Occupational health and safety and sustainable return to work management in small and medium-sized enterprises Iuliana Nastasia, Romain Rives, Canada</p> <p>Comparative analyses of construction classification systems in a context of benefits, challenges and required resources Martins Danusevics, Liga Braslina, Anda Batraga, Daina Šķiltere, Jelena Salkovska, Aija Legzdina, Henrijs Kalkis, Latvia</p> <p>Specific marketing capabilities for improved export performance in young firms Ieva Puke, Anda Batraga, Jelena Salkovska, Henrijs Kalkis, Latvia</p> <p>Possibilities of using lean and efficiency improvement methodologies in service area Svetlana Kocerova, Henrijs Kalkis, Zenija Roja, Latvia</p> <p>The futuristic building industry: Updating skills-set required for digital transformation Olushola Akinshipe, John Aliu, Clinton Aigbavboa, South Africa</p> <p>Digital transformation in quantity surveying: Where lies the issues? Olushola Akinshipe, Matthew Ikuabe, Clinton Aigbavboa, South Africa</p>	
65	Ergonomics in Architecture III Chair: Marta Rudnicka-Bogusz, Poland	SUPI
16:30-18:00 AHFE 5: MURRAY HILL	<p>A comparison of physical environmental design/assessment methods in elderly care facilities between UK and China Chenran Li, Jiangtao Du, UK</p> <p>A systematic review of investigations into the physical environmental qualities in Chinese elderly care facilities Chenran Li, Jiangtao Du, Haniyeh Mohammadpourkarbasi, UK</p> <p>Standardization and innovation in military housing, leisure homes and public buildings in the interwar period Poland Marta Rudnicka-Bogusz, Poland</p> <p>A survey of the association between perceived environmental qualities and students' satisfaction in Chinese high schools Yong He, Xi Zhang, Qianchen Guo, Jiangtao Du, China</p> <p>The interaction between culture and nature in the architecture of eco-cultural tourism development at Koh Kong Province, Cambodia Panha Ken, Cambodia</p> <p>University high-end equipment dynamic and control team laboratory space remodeling design Tingyu Yang, Qian Ji, China</p>	
66	Usability and User Experience Applications III Co-Chairs: Xiuling Wang and Xiyang Dai, China	UUE
16:30-18:00 AHFE 6: BOWERY	<p>Influence mechanism of air humidifier product color and shape on user preference based on eye tracking Huai Cao, Xiuling Wang, Kaixuan He, China</p> <p>Investigating on preferred listening levels when using noise-canceling headphones among graduate students Xiyang Dai, Yu-chi Lee, China</p> <p>Understanding the user experience of battery electric vehicles: A perspective based on big data text mining Techniques Quan Gu, Zhang Jie, Yue Cui, Ying Zhang, Shengqing Huang, China</p> <p>The use of physiological measurement for user experience assessment: A bibliometric analysis Ran Guo, Yi Ding, Yaqin Cao, China</p> <p>Voice interaction design of intelligent wearable device for elderly exercise and health scene Li Yijun, Hui Zhang, China</p> <p>User centered design and evaluation of an artificial intelligence based process recommender system in textile engineering Florian Brillowski, Luisa Vervier, Thomas Schemmer, Philipp Brauner, Thomas Gries, Martina Ziefle, Germany</p> <p>Usability of human-robot interaction within textile production: Insights into the acceptance of different collaboration types Hannah Dammers, Luisa Vervier, Lukas Mittelviehhaus, Philipp Brauner, Martina Ziefle, Thomas Gries, Germany</p> <p>Anxiety level among industrial engineering students in virtual learning Cesar Corrales, Jonatan Rojas, Wilmer Atoche, Peru</p>	

67	Technologies to Support OSH and Wellbeing in the Workplace Co-Chairs: Maria Pateraki, Georgios Athanassiou and Adria Mallol-Ragolta, Greece/Germany	SYSI
16:30-18:00 AHFE 7: BRYANT PARK	A micro-moment recommendation framework in industrial environments Michail Maniadakis, Iraklis Varlamis, Georgios Athanassiou, Greece Automatic assessment of posture deviations in assembly tasks Konstantinos Papoutsakis, Manolis Lourakis, Maria Pateraki, Greece Computer vision for increasing safety in container handling operations Manolis Lourakis, Maria Pateraki, Greece Time series representation using TS2Vec on smartwatch sensor data for fatigue estimation Adria Mallol-Ragolta, Michail Maniadakis, George Papadopoulos, Bjoern Schuller, Germany Instrumenting the human into safety 4.0 Saed Amer, Ravindra Goonetilleke, Ahmad Mayyas, UAE	
68	Digital Business Transformation and Change Leadership II Co-Chairs: Jonny O'Dwyer and Tapani Honkanen, Ireland/Finland	HFBMS
16:30-18:00 AHFE 8: COLUMBUS CIRCLE	The use of artificial intelligence in job seeking and competence development Markko Liutkevicius, Sadok Ben Yahia, Estonia Multidisciplinary teamwork in machine learning operations (MLOps) Tapani Honkanen, Jonny O'Dwyer, Vesa Salminen, Finland Change of education and training business in the age of 5G Heidi Ahokallio-Leppälä, Heikki Ruohomaa, Vesa Salminen, Finland Influence of content-oriented information management activities on the creation of national memory Karin Oolu, Ingrid Pappel, Estonia Relations of different features in time management: Procrastination Tero Reunanen, Finland Consumer behavior in product disposal: Mapping the field Jorge Cruz-Cárdenas, Ekaterina Zabelina, Olga Deyneka, Carlos Ramos, Andrés Palacio Fierro, Ecuador Establishing a student-community book club for civic engagement Frank Lorne, Jamel Vanderburg, Aanchal Sharma, Jaan Malik, Kitti Sandhu, Siva Sateesh Pitchuka, Anvitha Satti, Pooja Telagu, Rishabh Neb, Reshwanth Reddy Kota, Ganesh Reddy Bollapu, USA	
69	Robotic Systems and Users for Social Interactions Co-Chairs: Yiannis Koumpouros and Jérôme Dinet, Greece/Germany	HFRDUS
16:30-18:00 AHFE 9: FLATIRON	Assessment of an intelligent robotic rehabilitation assistant Yiannis Koumpouros, Alexandra Karavasili, Petros Maragos, Costas Tzafestas, Evita - Stavroula Fotinea, Eleni Efthimiou, Nikos Papastamatiou, Alexandros Nikolakakis, Effie Papageorgiou, Greece Effects of social cues on robot's gaze and head rotation on users' perception Jia Xiaoyu, Chien-Hsiung Chen, Taiwan Application of robots for enhancing social presence in remote communication scenarios Chun-wei Hsu, Chien-Hsu Chen, Taiwan Would you be friends with a robot?: The impact of perceived autonomy and perceived risk Jérôme Dinet, France Design, development and assessment of a multipurpose robotic assistant in the field of cognitive therapy Jonnathan Santiago Berrezueta Guzman, Stephan Krusche, Luis Serpa-Andrade, Germany Integration of human factors in an automated driving supervision system Jordan Scoliege, Jessy Barre, Philippe Cabon, France	

<p>16:30-18:00 AHFE 10: GRAMERCY</p>	<p>70 Product Design for Inclusion Co-Chairs: Giuseppe Mincolessi and Antonio Marano, Italy</p> <p>PLEINAIR project: Participatory methodologies to validate and integrate product concepts with young users Giuseppe Mincolessi, Gian Andrea Giacobone, Michele Marchi, Italy</p> <p>Inclusive autonomous vehicle interior design (IAVID) platform Elena Angeleska, Marija Sidorenko, Sofija Sidorenko, Paolo Pretto, Macedonia</p> <p>Genderless fashion design: From binary fashion to bio-segmentation. Body biotypes and somatotypes as main bases to inclusive fashion design Maria João Pereira Neto, Maria Inês Leal, Portugal</p> <p>Design of a devices' system with tangible interface aimed to an inclusive smart working experience and wellbeing Davide Di Bella, Kiana Kianfar, Alessandra Rinaldi, Italy</p> <p>In-vehicles interfaces development and elderly habits: A possible encounter Filippo Petrocchi, Gian Andrea Giacobone, Giuseppe Mincolessi, Italy</p> <p>Dynamic workshop for highly inclusive kitchens: Design for All (DfA) solution for product innovation in the kitchen furniture's area Antonio Marano, Ivo Spitilli, Giuseppe Di Bucchianico, Italy</p>	<p>DI</p>
	<p>71 Approaches and Methodologies in Design Field Chair: Cátia Rijo, Portugal</p>	<p>HDCS</p>
<p>16:30-18:00 AHFE 11: MADISON SQUARE</p>	<p>Integrated pedagogy model for training the XXIst century designer Javier Anton, Victor Larripa, Spain</p> <p>Human-centered design since the degree kickoff: From alumni experience to designer and user experience Juan Roquette, Fernando Alonso, Pilar Salazar, Spain</p> <p>Design in-between knowledge, cultures, identities, and territories Carla Paoliello, Portugal</p> <p>Mapping of graphic-semantic representations: Bisar an emotional brand Cátia Rijo, Vera Barradas, Mariana Dias, Portugal</p> <p>Identity design: A procedural approach for the ideation, construction, and analysis of logos Rodrigo Morais, Jo Ribeiro, Portugal</p>	<p>HSSE</p>
<p>16:30-18:00 AHFE 12: TURTLE BAY</p>	<p>Exploring Collaborations Using Extended Reality, Artificial Intelligence in User Experience, and Service Design in the Metaverse Co-Chairs: Laura Huisinga and Joshua Ian Robles, USA</p> <p>User experience of social web-based virtual reality for the hybrid and blended learning classroom Laura Huisinga, USA</p> <p>Building better community: A you-centralized experience Glenn Terpstra, USA</p> <p>Immersive AR landmark-based campus wayfinding solution with focus on people with navigation difficulties Zahrasadat Golestanha, Debra Satterfield, USA</p> <p>Implicit bias in UX research methods Nathaniel Pereira, USA</p> <p>Potentials of a metaverse for smart-service-engineering Jens Neuhüttler, Philipp Christel, Truong Le, Günter Wenzel, Antonio Ardilio, Germany</p> <p>Co-creation in the metaverse towards better mental health Joshua Ian Robles, USA</p>	<p>CTDM</p>
<p>16:30-18:00 AHFE 13: MADISON 1</p>	<p>Visual attention, memory and persuasion of recycling advertisements among Chinese university students Betty Wai Sang Siu, Bing Xiao, China</p> <p>The effectiveness of amazon headphone video advertising based on time series analysis Yuting Cai, Zhengqing Jiang, China</p> <p>The future prospect of dynamic poster design in the context of new media Ding Wei, Fan Wenqin, China</p> <p>Paradoxes in typeface design for creating new digital design experience Amic Ho, Hong Kong</p> <p>Application of Art-Tech in visual experience Amic Ho, Hong Kong</p> <p>Citizen-driven innovation in smart city governance - A comparative case study of Boston and Singapore Yichen Meng, Liyang Huang, Peng Xu, China</p>	<p>CTDM</p>

74	Artificial Intelligence - Utilization and Innovation Co-Chairs: Fabrizio Palmas and Kimberly Glasgow, Germany/USA	AISC
16:30-18:00 AHFE 14: MADISON 2	<p>Won't you see my neighbor? User predictions, mental models, and similarity-based explanations of AI classifiers Kimberly Glasgow, Jonathon Kopecky, John Gersh, Adam Crego, USA</p> <p>Using artificial intelligence to improve human performance: A predictive management strategy Fabrizio Palmas, Germany</p> <p>Applying data clustering algorithms to make predictions about retention and graduation rates at HBCUS Demetria White, Tor Kwembe, USA</p> <p>Robust AI for accident diagnosis of nuclear power plants using meta-learning Deail Lee, Heejae Lee, Jonghyun Kim, South Korea</p> <p>Detection of inappropriate images on smartphones based on computer vision techniques Daisy Imbaquingo, Macarthur Ortega-Bustamante, José Jácome, Tatyana Saltos-Echeverria, Roger Vaca, Ecuador</p> <p>Econometric modeling for the management and decomposition of financial risk Rolando Rubilar Torrealba, Karime Chahuán Jiménez, Hanns De la Fuente-Mella, Chile</p>	
75	Fashion and Apparel Design Co-Chairs: Carla Morais and Theresa Lobo, Portugal/USA	HFATE
16:30-18:00 AHFE 15: MADISON 3	<p>Investigating the factors affecting the thermal and tactile comfort of summer undergarments Kapo Lee, Joanne Yip, Kit Lun Yick, Hong Kong</p> <p>Adapting Jane Austen to the screen: Fashion and costume in Autumn de Wilde's movie Emma Carlos Manuel Figueiredo, Ana Rafaela Diogo, Joana André Leite, Portugal</p> <p>New skills for new designers: Fashion and textiles Gianni Montagna, Maria Delgado, Isabel Duarte de Almeida, Luís Santos, Portugal</p> <p>Fashion design and fashion technology courses: Practical skills in patterns making, garment manufacturing techniques, technologies, and applications for fashion industry Marta Bicho, Madalena Pereira, Nuno Belino, Rui Miguel, Portugal</p> <p>STVgoDigital Project: The contribution of industry and scientific and technological system for fashion ecosystem digitalization Maria Madalena Pereira, João Nuno Oliveira, João Oliveira, Rui Miguel, José Morgado, Manuel Pereira, Manuel Gonçalves, João Barata, Portugal</p> <p>Design of tread patterns for use with novel composite outsole materials for slip-resistant footwear Shaghayegh Bagheri, Kunal Gide, Tilak Dutta, USA</p> <p>Improving the apparel virtual size fitting prediction under psychographic characteristic and 3D Body measurements using artificial neural network Ah Pun Chan, Wai Ching Chu, Kwan Yu Lo, Kai Yuen Cheong, Hong Kong</p>	

Wednesday, July 27, 2022

76	Sensory Engineering and Emotion Co-Chairs: Keiichi Watanuki and Kazunori Kaede, Japan	APD
8:00-9:30 AHFE 1: CHELSEA	<p>Automatic generation of AI-based cancer pathology data and highly accurate colorectal cancer pathology diagnosis support Keiichi Watanuki, Tetsuhiro Suzuki, Yusuke Osawa, Kazunori Kaede, Shinsuke Kazama, Japan</p> <p>Prediction of health screening data with personal uncertainty using Bayesian neural networks Yusuke Osawa, Shohei Tawata, Keiichi Watanuki, Kazunori Kaede, Japan</p> <p>Time-series segmentation based on video images of cutting operations with a lathe in virtual reality space Shohei Tawata, Keiichi Watanuki, Kazunori Kaede, Japan</p> <p>Evaluation of the effects of AC magnetic field exposure on muscle fatigue using surface electromyography Kosuke Okano, Hideyuki Okano, Hiromi Ishiwatari, Keiichi Watanuki, Japan</p> <p>Fractal analysis of beauty and ugliness of paintings in western art history from the viewpoint of differences in art study history Tomofumi Sakata, Keiichi Watanuki, Japan</p>	

77	Culture and Satisfaction Co-Chairs: Atsuo Murata and Toshihisa Doi, Japan	CCDM
8:00-9:30 AHFE 2: UNION SQUARE	<p>Interactions of job satisfaction with personality could avoid emotional exhaustion among customer service employees Noriko Okabe, Japan</p> <p>Identifying satisfaction factors in long-term use of digital products for young Japanese consumers Toshihisa Doi, Atsuo Murata, Japan</p> <p>Computational models of American foreign strategy in a COVID-stricken Venezuela Joseph Klein, Jorge Guerra, USA</p> <p>Finnish firms and the employment of foreign workers Afnan Zafar, Marja Ahola, Finland</p> <p>Influence of Japanese medical trainees' multiple study abroad experiences in the US: A female-male comparison of empathy Chihiro Tajima, Michael Fetters, Allison Furgal, Japan</p> <p>The autonomy of cultural inheritance and innovation from the process of Venus' Ideological Development Ding Dianfan, China</p> <p>Cross-cultural management of Chinese traditional theatre industry based on Broadway operation model Xilin Chen, Tao Xi, China</p>	
78	Monitoring Physician or Patient in Medical Operations Co-Chairs: Angela Harrivel and Ran Yang, USA	CN
8:00-9:30 AHFE 3: SUGAR HILL	<p>Experimental design of a video laryngoscope employing a convolutional neural network to aid endotracheal intubation procedures in remote areas Ran Yang, USA</p> <p>Human monitoring for medical operator assistance Angela Harrivel, Saeideh Samani, Rania Ghatas, USA</p> <p>Wearable cerebral oximetry for continuous crew monitoring Casey Boutwell, Jason Strohmaier, William D. Smith, Laura A. Hawthorn, Thibault Roumengous, USA</p> <p>How autonomous intelligent systems can facilitate earth-independent medical care: Going beyond telepresence Saeideh Samani, Angela Harrivel, S. Farokh Atashzar, USA</p> <p>Clinical decision support on Mars Barbara Burian, Michael Krihak, Brandon Schmitt, David Pletcher, Kara Martin, Dennis Beaugrand, Jeremy Noel, Melissa Lyons, Bettina Beard, Benjamin Easter, Shean Phelps, USA</p>	
79	Design Research Through Complex Scenarios and Complex Products II Chair: Tiantian Li, China	ED
8:00-9:30 AHFE 4: SUTTON PLACE	<p>Design for product-service system innovation of the new fresh retail in the context of Chinese urban community Ke Ma, Ren-ke He, Meng Gao, China</p> <p>Interactive animation design of Egyptian totem elements under the digital media technology Qiaoling Zeng, Mingu Lee, Juhyun Eune, South Korea</p> <p>Morphological representation framework and feature cognitive mechanism of automobile styling stance: An embodied cognition perspective Tiantian Li, Ziyou Song, Xuguang Zhu, China</p> <p>Experience and interaction - application of audiovisual synesthesia in interactive devices Jian Zhou, China</p> <p>Interface design of three-dimensional virtual teaching situation based on psychological schema theory Zhengtang Tan, Xiangyu Yao, Zhu Yi, Meizhen Den, China</p> <p>Innovative exploration of a new air health product based on analytic hierarchy process Miao Liu, Loufei Zhang, China</p> <p>Food packaging design that help reduce consumer-generated waste Alberto Rossa-Sierra, Fabiola Cortes Chavez, Marcela De Obaldia, Mariel Garcia-Hernandez, Mexico</p>	

80	Automation, Digitalization in Maritime Operations Co-Chairs: Gesa Praetorius and Charlott Sellberg, Sweden	MAR
8:00-9:30 AHFE 5: MURRAY HILL	<p>Digitalization transformation and its challenges in shipping operation: The case of seafarer's cognitive human factor Gholam Reza Emad, Mehrangiz Shahbakhsh, Australia</p> <p>Remote monitoring of autonomous ships: quickly getting into the loop display (QGILD) Thomas Porathe, Norway</p> <p>Mixed traffic scenarios - challenges for VTS operators to ensure safe and efficient vessel traffic flow in the future Michael Baldauf, Momoko Kitada, Lisa Loloma Froholdt, Germany</p> <p>Implementing operational envelopes for improved resilience of autonomous maritime transport Kay Fjørtoft, Even Holte, Norway</p> <p>The role of human operators in future shipping Johanna Larsson, Gesa Praetorius, Sweden</p>	
81	Advanced Technology and Engineering in Safety Management Co-Chairs: Anne Garcia and Marta Sousa, USA/Portugal	SMHF
8:00-9:30 AHFE 6: BOWERY	<p>Resilience engineering's promise and potential Christopher Nemeth, USA</p> <p>Assessment of the effectiveness and safety of exoskeletons in industrial workplaces Hana Pacaiova, Daniela Onofrejova, Slovakia</p> <p>Assessing occupational exposure to ultrafine particles during metal 3D Printing Marta Sousa, Pedro Arezes, Francisco Silva, Portugal</p> <p>sWafety: Low threshold involvement of personnel into safety management Toni Waefler, Sandra Schenkel, Dominique Kuster, Matthias Reimann, Michael Holzapfel, Switzerland</p> <p>Conductive design for safety in modular plants Florian Pelzer, Anselm Klose, Jens R. Helmert, Leon Urbas, Sebastian Pannasch, Germany</p> <p>Analysis of pre-evacuation time and EEG for fire alarm when wearing ANC earphones Ji Won Gu, Ji-hoon Hwang, Ryun-seok Oh, Jun-ho Choi, South Korea</p> <p>Multimodal haptics perception of underwater flow for scuba diving safety training Kazuma Shirakawa, Daigo Misaki, Japan</p>	
82	Human Factors Considerations for Electric Vehicle Infrastructure Chair: Katherine Plant, UK	RR
8:00-9:30 AHFE 7: BRYANT PARK	<p>Systematic and user-oriented development of physical interface for vehicle ultrafast charging Alexander Mueller, Simon Buck, Fabian Schmiel, Lampros Tsolakidis, Germany</p> <p>Human factors and political price regulations to enhance electric vehicle miles traveled Margarita Gutjar, Matthias Kowald, Germany</p> <p>New cars on the block - The impact of public charging infrastructure on BEV ownership Ralf Philipsen, Hannah Biermann, Martina Ziefle, Germany</p> <p>Micromobility: challenges and prospects for electric mobility devices (EMDS) in Hong Kong Richard Lukenge, Kin Wai Michael Siu, Sylvia Liu, Zi Yang, Hong Kong</p> <p>Evaluating the risk perception abilities of e-scooter riders in urban environments Avinoam Borowsky, Yisrael Parmet, Anat Meir, Israel</p>	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Wednesday, July 27</p>	<p>83 Public Transportation Co-Chairs: Anabela Simoes and Chantal Lidynia, Portugal/Germany</p>	<p>RR</p>
	<p>8:00-9:30 AHFE 8: COLUMBUS CIRCLE</p> <p>Passengers' perception on Bus Rapid Transit access: Case study of Ikorodu-Mile 12 corridor of Lagos State, Nigeria Oriyomi Akinyemi, Oluwole Soyinka, Hong Kong</p> <p>User experience of an automated on-demand shuttle service in public transportation Hüseyin Avsar, Michael Böhm, Annika Dreßler, Markus Fischer, Ulrike Steinberger, Germany</p> <p>Research needs for a quality service assessment model of inclusive community transport Anabela Simoes, Ling Suen, Portugal</p> <p>Paving the way to autonomy – influencing factors for the acceptance of autonomously operating transportation services in rural Germany Chantal Lidynia, Gian Luca Liehner, Martina Ziefle, Germany</p> <p>Mobility for everyone - a matrix-based approach to ensure accessibility of public transport Jan Grippenkoven, Alexandra König, Germany</p> <p>Barriers to the adoption of smart transport technologies in South Africa: Gleaning into what literature reveals and hides for planning and policy James Chakwizira, South Africa</p>	
	<p>84 Physical Ergonomics and Work-Related Issues Co-Chairs: Zenija Roja and Henrijs Kalkis, Latvia</p>	<p>SOE</p>
<p>8:00-9:30 AHFE 9: FLATIRON</p> <p>Muscle fatigue for the health staff in hospital operating unit Zenija Roja, Patricija Freiberga, Henrijs Kalkis, Latvia</p> <p>Methodology of ergonomic evaluation in construction and building works Cesar Corrales, Dennis Romero, Peru</p> <p>Occupational and health factors in the risk of professional dropping out among women over 45 Sandrine Guyot, France</p> <p>Ergonomic risk factors for carpal tunnel syndrome among designers Kodsiah Mohd Juzad, Shamsul Bahri Mohd Tamrin, Rozanah Ab Rahman, Ng Yee Guan, Nurul Atikah Che Hasan, Malaysia</p> <p>Evaluation models of muscle fatigue recovery for demolishing tasks Cannan Yi, Hong Hu, Jiayuan He, Fan Tang, Kaiway Li, Yanfang Zheng, Huali Zuo, China</p> <p>Physical and mental occupational ergonomics risk factors among paramedics Sean Banaee, Konstantin Cigularov, Anna Jeng, USA</p> <p>Ergonomic risk in nurses and caregivers due to patient care and mobilization in senior centers Albeiro Aguilar Olivera, Maye Catalina Neira Cardenas, Colombia</p>		
<p>85 Usability Evaluation Co-Chairs: Denise Sogemeier and Ismail Abdul Rahman, Germany/Malaysia</p>	<p>UUE</p>	
<p>8:00-9:30 AHFE 10: GRAMERCY</p> <p>A global questionnaire? An international comparison of the system usability scale in the context of an infotainment system Denise Sogemeier, Alexandra Loew, Sarah Kulesa, Yannick Forster, Frederik Naujoks, Andreas Keinath, Germany</p> <p>Heuristic evaluation of public service Chatbots Stephan Raimer, Marleen Vanhauer, Germany</p> <p>The evaluation of worker satisfaction on usability of manual material handling equipment among manufacturing warehouse workers in Malaysia Ismail Abdul Rahman, Malaysia</p> <p>Usability evaluation of mobile navigation for the elderly Xiaodong Gong, Zekun Wang, Qian Gong, Huiran Xie, China</p> <p>Product style preference: An image-based user study software concept Pengyu Du, Kin Wai Michael Siu, Yi-Teng Shih, China</p> <p>E-Democracy and accessibility: Challenges in the Ecuadorian presidential elections of 2021 in the midst of the COVID-19 pandemic Hugo Arias-Flores, Sandra Sanchez-Gordon, Tania Calle-Jimenez, Ecuador</p> <p>Examining the role of AR/VR technologies in improving usability & user experience in retail leading to customer satisfaction and loyalty Shikha Gupta, India</p>		

<p>86</p>	<p>Vulnerable Road-User Safety, Haptic Interfaces and Technological Interventions Co-Chairs: Shuchisnigdha Deb and Anurag Pande, USA</p>	<p>SYSI</p>
<p>8:00-9:30 AHFE 11: MADISON SQUARE</p>	<p>Identification of potential warning signals for a smartphone-based bicyclist assistant system Anika Rimu, Rachael Panik, Srinivasan Murali, Kari Watkins, Ming Li, Shuchisnigdha Deb, USA</p> <p>A virtual reality program to improve child pedestrians’ safety at street-crossing scenarios Taufiq Rahman, Bryan De Santiago, Anika Rimu, Shuchisnigdha Deb, Anurag Pande, Mouyid Islam, USA</p> <p>How to design traffic infrastructure to support cyclists' interaction with autonomous vehicles: Teenage cyclists’ perceptions Obiageli Lawrentia Ngwu, Shuchisnigdha Deb, USA</p> <p>Vibration perception thresholds on the five fingers of the human right hand among an adult population Emanuel Silva, Rosane Sampaio, Lisandra Teixeira, Nélon Costa, Portugal</p> <p>Minimum hand haptic perception thresholds Emanuel Silva, José Grilo, Tiago Matias, Rui Gomes, Adriano Carvalho, Paulo Cardoso, Nelson Costa, Portugal</p> <p>Haptic interface to enable two-wheeled swarming for prioritized mobility in smart cities Juan Salamanca, Sandra Cespedes USA</p> <p>PowerMount: A proposed design for motorcycle phone holder to ensure style, safety, security, and sustainability Alma Maria Jennifer Gutierrez, Mary Joyce Bicalan, Chris John Castor, Atreus Datuin, Anjelo Maquinay, Joanna Marie Realon, Jayson Saligao, Philippines</p>	
<p>87</p>	<p>Teaching/Learning Interaction Co-Chairs: Diana Paola Moreno Alarcon and Xiyu Wang, France/China</p>	<p>TELS</p>
<p>8:00-9:30 AHFE 12: TURTLE BAY</p>	<p>State program for youth worker - an innovative form for training specialists about youth work Nataliia Levchenko, Nataliia Koliada, Olena Baldyniuk, Iryna Karpych, Olha Boiko, Yuliya Klymenko, Ukraine</p> <p>Fogg behavior model for children's sex education Xiyu Wang, Li Xu, China</p> <p>Co-development approach integrating training into the design process Diana Paola Moreno Alarcon, Corinne Bieder, France</p> <p>Development of a method to visualize the approximate synchronization ratio of a teaching material clickstream in class Konomu Dobashi, Japan</p> <p>The new paradigm for teaching design: A reflection on innovation in materials teaching in the “online season” Alexandra Luis, Portugal</p> <p>“Industry-university-research” collaborative innovative compound talent evaluation system design study and application Yonghong Liu, Yanlin Yin, Keyan Lin, Yiming Song, Siyue Lin, China</p>	
<p>88</p>	<p>Design Communication II: Creative Studies Chair: Amic Ho, Hong Kong</p>	<p>HFGD</p>
<p>8:00-9:30 AHFE 13: MADISON 1</p>	<p>Design a visual communication platform for curators and artists to curate an exhibition remotely Yi Pei Wu, Taiwan</p> <p>Exploring the concept of design thinker in western and Chinese contexts Yating Li, Henry Ma, Hong Kong</p> <p>Disruptive Innovations in cinematic storytelling from 2D to 3D David Yip, Hong Kong</p> <p>Between passive viewing and active choosing in storytelling David Yip, Hong Kong</p> <p>New pedagogical practices of co-creation applied to design João Neves, Daniel Raposo, Nuno Martins, Daniel Brandão, Portugal</p> <p>Design and art: An important contribution for the design studies Theresa Lobo, USA</p>	

Wednesday, July 27

89	Innovation in Additive Manufacturing Sector Co-Chairs: Stefano Filippi and Ciro Rodriguez, Italy/Mexico	AMMSP
8:00-9:30 AHFE 14: MADISON 2	<p>Generative design and 3D printing to develop a hi-tech Cartesian cutting machine for non-metallic materials Stefano Filippi, Franco Zuliani, Francisco Daniel Montoya Buteler, Italy</p> <p>Development of an information model for the pre-process of additive manufacturing Fabian Arnold, Slim Krückemeier, Reiner Anderl, Germany</p> <p>Design and manufacturing considerations of a constant-force mechanism for low force regimes Andrei Alexandru Popa, Olgierd Krzysztof Nowakowski, Andreas Holmetoft Lyder, Lars Duggen, Denmark</p> <p>Fatigue life improvement in laser powder bed fusion of stainless steel via electropolishing Fernando Vazquez-Castro, Erika Garcia-Lopez, Jesus Sandoval-Robles, Elisa Vazquez, Omar Lopez-Botello, Ciro Rodriguez, Mexico</p>	
90	Design and Identity for Territories Chair: Vera Barradas, Portugal	HDCS
8:00-9:30 AHFE 15: MADISON 3	<p>Color as a distinctive element of the territories Vera Barradas, Ana Loures, Luis Loures, José Silveira Dias, Victoria Carrillo Durán, Portugal</p> <p>Co-design as a tool to improve our cities Vera Barradas, Cátia Rijo, Portugal</p> <p>The creation of the identity for the territory themes: The international congress SD2021 as case study Vera Barradas, Cátia Rijo, Portugal</p> <p>Design thinking a methodological approach in design process: 3 seeds as a case study Cátia Rijo, Vera Barradas, Carolina Galegos, Patricia Pombo, Portugal</p>	
REFRESHMENTS: 9:30 - 10:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)		
91	Creating Value in Teams, Organizations, Communities, and Societies I Co-Chairs: Youji Kohda and Yasunobu Ito, Japan	HSSE
10:00-11:30 AHFE 1: CHELSEA	<p>Applying nudges to Nemawashi: Consensus-building without losing diversity Nikka Ko, Youji Kohda, Naoshi Uchihira, Japan</p> <p>Empowering futures literacy through a knowledge-based service innovation workshop Porruthai Boonswasd, Kunio Shirahada, Japan</p> <p>Maritime engine room resource management extended to remote members onshore: Conceptual model using internet of everything (IoE) Moritaro Inoue, Naoshi Uchihira, Japan</p> <p>Changes in the relationship between medical professionals mediated by an information tool: An ethnography of team medicine in Japan Hiromi Yamaguchi, Yasunobu Ito, Japan</p> <p>The invisible work and its value of outpatient nurses: A case study of an internal medicine clinic in Fukuoka, Japan Yaeko Kawaguchi, Yasunobu Ito, Japan</p> <p>Conceptual change in human-centered design by artificial intelligence system Masaya Ando, Yasunobu Ito, Japan</p> <p>Predictive model establishment for the online shopping experience factors affecting repurchase intention using stepwise linear regression Jesselyn Alcain, Charlie Marquez, Lara Camille Beriña, Luke Samuel Bulaon, Jane Andrea Cheng, Gennes Erika Cruz, Philippines</p>	

92	Design, Co-Creation and Innovation Co-Chairs: Tero Reunanen and Yan Luximon, Finland/Hong Kong	CIE
10:00-11:30 AHFE 2: UNION SQUARE	<p>The use of metaverse in maritime sector – a combination of social communication, hands on experiencing and digital twins Mika Luimula, Timo Haavisto, Duy Vu Dinh Pham, Panagiotis Markopoulos, Jami Aho, Evangelos Markopoulos, Juha Saarinen, Finland</p> <p>Coworking spaces for startup companies: A comparative study in Istanbul Salih Ceylan, Mehmet Emre Arslan, Turkey</p> <p>Co-creation services boosting health technology potential – the case of Turku, Finland Tero Reunanen, Janne Lahtiranta, Elina Kontio, Finland</p> <p>Infrared thermographic evaluation of facemasks Ameersing Luximon, Yan Luximon, Ravindra Goonetilleke, Hong Kong</p> <p>Evaluation of systematically developed gamification strategies with game-balance simulation tools David Kessing, Manuel Löwer, Germany</p>	
93	Healthcare Strategies and Design in Pandemic Control and Management Co-Chairs: Michael Schwartz and Kevin Clark, USA	DCPP
10:00-11:30 AHFE 3: SUGAR HILL	<p>Pedestrian modeling for mitigation of disease transmission in a simulated university environment Michael Schwartz, Cortnee Stainrod, Irin Nizam, Tyler Mcfadden, USA</p> <p>Bulgarian public administration's social media communications strategies during COVID-19 crisis Ivan Valchanov, Stella Angova, Maria Nikolova, Iliya Valkov, Violeta Zlatkova, Krassimira Valcheva, Boryana Marinkova, Bulgaria</p> <p>Service disruptions and recovery: lessons from the Chinese hotel industry for the post-COVID-19 era Zi Yang, Kin Wai Michael Siu, Yushan Huang, Hong Kong</p> <p>COVID choices: Research and online system for main street decision making Kevin Clark, Jordan Louviere, Richard Carson, USA</p> <p>Impact of globally fair COVID-19 vaccination: An analysis based on agent-based simulation Kashif Zia, Muhammad Shafi, Oman</p>	
94	Cognitive Assessment and Physical Strain of First Responders and Action Forces Co-Chairs: Miloš Kostić and Lucas Paletta, Serbia/Austria	CCIoT
10:00-11:30 AHFE 4: SUTTON PLACE	<p>Design of the heart rate measurement module in a telemonitoring device for first responders deployed in extreme environments Tanja Boljanić, Matija Štrbac, Jovana Malešević, Vladimir Kojić, Nikola Topalović, Goran Bijelić, Milos Kostić, Serbia</p> <p>Effect of exercise intensity and thermal strain on wildland firefighters' central nervous system fatigue Jose A. Rodríguez-Marroyo, Belén Carballo Leyenda, Pilar Sánchez Collado, David Suárez Iglesias, José G. Villa, Spain</p> <p>Evaluation of virtual reality-based first responder training under physiological and cognitive-emotional strain Lilian Reim, K Wolfgang Kallus, Martin Pszeida, Michael Schneeberger, Christian Schönauer, Andreas Peer, Richard Feischl, Georg Aumayr, Dietmar Wallner, Amir Dini, Anna Weber, Stefan Ladstätter, Alexander Almer, Lucas Paletta, Austria</p> <p>First responder situation reporting in virtual reality training with evaluation of cognitive-emotional stress using psychophysiological measures Michael Schneeberger, Lucas Paletta, Austria</p> <p>Specific load and stress modelling for military task forces based on real-time biosensor measurements and activity analysis Alexander Almer, Anna Weber, Lucas Paletta, Michael Schneeberger, Stefan Ladstätter, Julia Tschuden, Austria</p>	

95	Emotional Engineering II Co-Chairs: Keiichi Muramatsu and Yoshimasa Tawatsuji, Japan	APD
10:00-11:30 AHFE 5: MURRAY HILL	<p>A novel idea generation method: "SA Method" Atsushi Sakahara, Madoka Hasegawa, Atsushi Ito, Japan</p> <p>Technology and sensory stimuli as support for physical retail experience design Paulo Eduardo Hauqui Tonin, Elton Moura Nickel, Flávio Anthero Nunes Vianna dos Santos, Brazil</p> <p>Museum interactive space design from enactive perception perspective Tian Chong Qiao, Yihang Du, China</p> <p>Environmental design of medical main street from the perspective of supportive design theory Zhu Siyi, Huifang Shang, Chuanshun Wang, China</p> <p>AR experimental game design of children character based on Etymon Literacy Method Meng Xu, Bo Liu, Yue Shi, China</p> <p>Design and evaluation of a device for ecological momentary assessment with workers in a garment factory Ana Correia de Barros, Catarina Dantas, Rúben Moutinho, Gonçalo Lemos, Carlos Resende, Liliana Cunha, Daniel Silva, Sarah Maggioli, Susana Brito Amorim, Portugal</p> <p>Punch it baby! Exploring gestural interactions to reduce the emotion of anger for new car buyers Inwai Chan, Hanyuan Li, Zhengqing Peng, Bojuan Ren, Ruikang Wang, Yushan Wen, Xiaojian Wu, Fan Yang, Ruotong Zhang, Ningxin Zhao, Lu Wang, Wei Liu, China</p>	
96	Applied Digital Anthropometry for Performance and Accommodation Co-Chairs: Hyegjoo Choi-Rokas and Han Kim, USA	DHMAO
10:00-11:30 AHFE 6: BOWERY	<p>Evaluation of face anthropometry for mask design Minji Yu, Linsey Griffin, William Durfee, USA</p> <p>Orthogonal curve analysis of human scalp shape Peng Li, USA</p> <p>Theoretical framework for the sizing of body armor plates to optimize fit Hyegjoo Choi-Rokas, Todd Garlie, K. Blake Mitchell, USA</p> <p>A novel methodology for evaluating military teamwork and team marksmanship performance Peioneti Lam, John Christopher, Richard Goodenough, Jose Villa, K. Blake Mitchell, Victoria Bode, Stephanie Brown, USA</p> <p>Modeling spacesuit-human interaction for injury risk identification Garima Gupta, Linh Vu, K. Han Kim, Sudhakar Rajulu, USA</p>	
97	Interaction Design Co-Chairs: Paulo Noriega and Francisco Rebelo, Portugal	ED
10:00-11:30 AHFE 7: BRYANT PARK	<p>Development of teleoperation system for overhead handling cranes Zhefan Yu, Jianping Luo, Han Zhang, Ruotian Zhang, Seung Hee Lee, Japan</p> <p>Short video interaction design based on interactive ritual chain Yujia Gao, Mengfei Liu, China</p> <p>Fatigue, sleepiness and workload in train traffic controllers Paulo Noriega Machado, Rafael Nascimento, Francisco Rebelo, José Carvalhais, Teresa Cotrim, Elisangela Vilar, Portugal</p> <p>Design of museum science popularization interactive installation based on embodied cognition theory Xinheng Song, Zhaolin Lu, China</p> <p>Dynamic privacy hierarchical design to optimize the user experience of financial management Xiaoyun Jing, Junyao Fan, Yufei Liu, China</p>	

98	Healthcare Advancement and Patient Safety Co-Chairs: Jay Kalra and Iván Dueñas Espín, Canada/Ecuador	EHMD
10:00-11:30 AHFE 8: COLUMBUS CIRCLE	<p>Development of a web-based tool –The Score Bebé®– for enhancing neonatal risk stratification: A nationwide retrospective study Luciana Armijos, Betzabé Tello, Carmenza Sevilla, Isaac Cano, Johanna Fonseca, Luis Vivas, María F. Rivadeneira, Ruth Jimbo, Xavier Sánchez, Nancy Santillán, Iván Dueñas Espín, Ecuador</p> <p>Enhancing the quality and delivery of healthcare: A decade review of autopsy data Jay Kalra, Daniel Markewich, Zoher Rafid-Hamed, Patrick Seitzinger, Canada</p> <p>Immediate effects of posture correction girdle on adolescents with early scoliosis Pak Yiu Liu, Joanne Yip, Brian Chen, Lifang He, Jason Cheung, Kit Lun Yick, Sun Pui Ng, Hong Kong</p> <p>Direct weighting interaction design of patient preferences for shared decision making in orthopaedic practice Ben Schooley, Akanksha Singh, Sarah Floyd, Stephan Pill, John Brooks, USA</p> <p>Preliminary wear trial of anisotropic textile brace designed for adolescent idiopathic scoliosis Hoi Yan Cheung, Joanne Yip, Kit Lun Yick, Sun Pui Ng, Hong Kong</p> <p>Medical error disclosure: A quality perspective and ethical dilemma in healthcare delivery Jay Kalra, Zoher Rafid-Hamed, Lily Wiebe, Patrick Seitzinger, Canada</p> <p>The human-centered precision health care system design based on lifestyle of the solitary elderly Kuo-Wei Su, Po-Chih Chiu, Taiwan</p>	
99	Musculoskeletal Disorders and Physical Wellbeing Co-Chairs: Sang Choi and Zenija Roja, USA/Latvia	PEHF
10:00-11:30 AHFE 9: FLATIRON	<p>Promoting physical wellbeing in the workplace: Providing working adults with a tool to reduce their sedentary behavior Michal Adar, Renate De Bruin, David Keyson, Netherlands</p> <p>Assessment of risk factors of upper-limb musculoskeletal disorders in a fish processing industry Diogo Cunha dos Reis, Antônio Renato Pereira Moro, Brazil</p> <p>Effect of different intervention methods on recovery of exercise-induced muscle fatigue Yiyang Chen, Zhanxun Dong, Zhang Xingqiang, China</p> <p>Physical, psychophysical and demographic changes require automated & autonomous machines & equipment (AAM&E) in construction Sang Choi, James G. Borchardt, USA</p> <p>Psychological conditions for the development of stress resistance in specialists of different age categories Oksana Kravchenko, Marina Mishchenko, Olena Soroka, Yulia Teptiuk, Oleksandr Safin, Olena Andrusyk, Oleksandr Timchenko, Vitalii Khrystenko, Ukraine</p> <p>The effects of flash frequency and amount of information in mitigating the effects of fatigue Xiaoyan Zhang, Hongjun Xue, China</p>	
100	Driver Performance, Behaviour, and Physiology I Co-Chairs: Katharina Schuler and Yovela Murzello, Germany/Canada	RR
10:00-11:30 AHFE 10: GRAMERCY	<p>Global changes to driver behavior amid COVID-19 Siby Samuel, Yovela Murzello, Canada</p> <p>Driver situation awareness and cognitive workload effects of novel interchange configurations and associated signage Yunmei Liu, Kihyun Pyo, Christopher Cunningham, Thomas Chase, David Kaber, USA</p> <p>Distacted driving: exploring general deterrence theory and texting while driving among novice drivers Lemuria Carter, Maranda McBride, Australia</p> <p>Investigating the influence of working memory processes on the box task combined with a detection response task Daniel Trommler, Tina Morgenstern, Cornelia Hollander, Ines Karl, Frederik Naujoks, Josef Krems, Andreas Keinath, Germany</p> <p>Communication between drivers in a road bottleneck scenario Katharina Schuler, Laura Quante, Caroline Schießl, Matthias Beggiato, Georg Jahn, Germany</p>	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Wednesday, July 27</p>	<p>101 Ergonomics in Urban Planning I Co-Chairs: Mo Zhou and Caterina Anastasia, Poland/Portugal</p>	<p>SUPI</p>
	<p>10:00-11:30 AHFE 11: MADISON SQUARE</p> <p>Enhancing rural sustainable development and rural innovation through adaptive design strategies Mo Zhou, Wojciech Bonenberg, Xia Wei, Ling Qi, Poland</p> <p>Design of rural public cultural activity space Siyi Wang, China</p> <p>Water as a project material: Designing the Tagus Estuary Riparian Limits Caterina Anastasia, Portugal</p> <p>Influence of soundscape in the experience of an urban area: A case study in Rome Francesco Aletta, Francesco Asdrubali, Maria Rosaria De Blasiis, Luca Evangelisti, Claudia Guattari, Italy</p> <p>Opportunities and challenges of citizen participation in the territorial planning system in Ecuador Lorena Vivanco, Alfredo Ordoñez, Natalia Pacurucu, Boris Orellana-Alvear, Ecuador</p> <p>Perception and design of traditional village public landscape based on place attachment - A case study of Futian Town, Jiangxi Province, China Wei Huang, Shizhu Lu, Yuqing Guo, China</p> <p>Status quo and strategies of prefabricated buildings in the context of carbon neutrality and carbon peaking Zeyu He, China</p>	
	<p>102 User Interface and Accessibility I Co-Chairs: Marcel Racs and Daniel Carruth, Germany/USA</p>	<p>UUE</p>
<p>10:00-11:30 AHFE 12: TURTLE BAY</p> <p>Design recommendations for an adaptive control system in agricultural tractors based on expert knowledge Marcel Racs, Andreas Kaufmann, Björn Hülle, Thomas Maier, Germany</p> <p>Evidence for effect of aesthetic on interpretation of visualizations by engineers and non-engineers Julie Baca, Daniel Carruth, Michael Stephens, Christopher Lewis, USA</p> <p>Usability study on the user interface design of mobile payment applications Yihung Hsu, Chien-Hsiung Chen, Taiwan</p> <p>Graphic icon and information presentation types of hover feedback designs on the user interface of shopping websites Weimin Zhai, Chien-Hsiung Chen, Taiwan</p> <p>The influence of color on web page complexity and color recommendation Wang Xiaoxiong, Wang Haiyan, Wu Jinchun, China</p> <p>So much information, so little screen space: Assessing the usability of hierarchical data visualizations in Tableau R. Jordan Hinson, Amelia Kinsella, Ruth E. Propper, USA</p> <p>Assessing experiences and visual perception in train station environments with a mobile application and eye tracking Andrea Schneider, Beat Vollenwyder, Eva Krueger, Switzerland</p> <p>Interactive effectiveness evaluation of intelligent helmet based on multimodal fusion Jian Peng, Xuepeng Wang, Junchun Chen, China</p>		
<p>103 Human Functions in Organizational Systems Co-Chairs: Mohammed-Aminu Sanda and Rufai Haruna Kilu, Ghana</p>	<p>SYSI</p>	
<p>10:00-11:30 AHFE 13: MADISON 1</p> <p>Students quality assessment of the interactivenesses of virtual teaching and learning platforms Mohammed Aminu Sanda, Ghana</p> <p>A functional support system in a bustling 24/7 economy: Perspectives on slum dwellers in Ashaiman, Ghana Erika Mamley Osae, John Victor Mensah, David Wellington Essaw, Rufai Kilu, Ghana</p> <p>The dysfunctional systems of creative entrepreneurship in Ghana Rufai Kilu, Mohammed-Aminu Sanda, Lilian Ama Afun, Ghana</p> <p>Beyond fashion consumption: Mapping the functional systems of the psychologists in socio-environmental issues of the fashion industry Lilian Ama Afun, Ghana</p> <p>Application of the "resource-based theory of the firm" and its relevance in the creative industries: A developing country perspective Reginald Arthur, Olivia Anku-tsede, Mohammed-Aminu Sanda, Eleonora Belfiore, Ghana</p> <p>The systemic transitioning strategy of re-orienting "head-pottering" task from an objectively "bad" job to a subjectively "good" job Majoreen Osafroadu Amankwah, Ghana</p>		

104	Human-Related Social- and Technostress and Wearable Intelligence Co-Chairs: Kimmo Vänni and Kimi Ueda, Finland/Japan	HFBMS
10:00-11:30 AHFE 14: MADISON 2	<p>Comparison between technostress instruments among education and health care sectors Kimmo Vanni, Antti Syvanen, Jarmo Viteli, Finland</p> <p>Micro-refresh to restore intellectual concentration decline during office work: An attempt at quantitative effect evaluation Kakeru Kitayama, Orchida Dianita, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Fumiaki Obayashi, Japan</p> <p>Development of social workers stress tolerance in the process of their professional activity Oksana Kravchenko, Marina Mishchenko, Olena Soroka, Anna Levenets, Valentyna Korolchuk, Serhii Myronets, Svitlana Tsymbal, Iryna Vahotska, Natalia Hotsuliak, Ukraine</p> <p>An analysis of the effect of integrated thermal control on cognitive task performance using time-series changes in intellectual concentration Kimi Ueda, Kohei Yumura, Hirotake Ishii, Hiroshi Shimoda, Fumiaki Obayashi, Japan</p> <p>Social support in a self-organizing project team Carita Salminen, Anju Marjamaa, Vesa Salminen, Finland</p> <p>Ethical guidelines for human-centered design activities Jun Iio, Atsushi Hasegawa, Shigeyoshi Iizuka, Seiji Hayakawa, Hiroshi Tsujioka, Japan</p> <p>Design challenges and principles of Hugar footwear exoskeleton Kimmo Vanni, Satu Jumisko Pyykko, Xuequn Zhang, Yeye Xu, Shiqiang Zhu, Finland</p>	
105	Analysis of Learning Strategies and Learning Performance Co-Chairs: Amna Javed and Jorge Guadalupe-Lanas, Japan/Ecuador	TELS
10:00-11:30 AHFE 15: MADISON 3	<p>Assessing the emotional state in teachers and university administrative staff when returning to presential work Jorge Guadalupe-Lanas, Hugo Arias-Flores, Doris Pérez Vega, Ecuador</p> <p>Learning strategies and satisfaction of university services from the student perspective Cesar Guevara, Ruth Narciza Zambrano Pintado, Hugo Luis Moncayo Cueva, Ecuador</p> <p>Insight for team facilitation to implement psychological safety in online distributed learning Amna Javed, Youji Kohda, Japan</p> <p>Army crew training: Coaching with Intelligent Tutoring System (ITS) Vlad Zotov, Canada</p> <p>Blended learning approach to youth entrepreneurship skills development Rūta Čiutienė, Ramunė Čiarnienė, Lithuania</p> <p>Ethical Considerations for the application of virtual reality in education and training Hasan Mahbub Tusher, Salman Nazir, Steven Mallam, Norway</p> <p>Project-based learning method applied in college English teaching: Case study of an instructional design Jian Liu, China</p>	
REFRESHMENTS: 11:30 - 12:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)		
106	Human Factors in Software and Systems Engineering II Co-Chairs: Stefan Pickl and Kristin Strelein, Germany/USA	HFSSE
12:00-13:30 AHFE 1: CHELSEA	<p>Eye gaze tracking insights into software engineering Kristin Strelein, USA</p> <p>Development of a smart database for construction inventory management using deep learning to eliminate supply chain bottlenecks post COVID-19 Unmesa Ray, Abdulaziz Banawi, USA</p> <p>Architectural approaches to overcome challenges in the development of data-intensive systems Aleksandar Dimov, Simeon Emanuilov, Boyan Bontchev, Yavor Dankov, Tasos Papapostolu, Bulgaria</p> <p>Fuzzy choice – the Facebook facade of the triple parliamentary election campaign 2021 in Bulgaria Neli Velinova, Lora Metanova, Mariyan Tomov, Lilia Raycheva, Bulgaria</p> <p>Integrating human survival factors in optimizing the routing of flying ad-hoc networks in search and rescue tasks Salama Mostafa, Azizul Azhar Ramli, Mohammed Ahmed Jubair, Saraswathy Shamini, Aida Mustapha, Mustafa Hamid Hassan, , Malaysia</p> <p>Football matches outcomes prediction based on gradient boosting algorithms and football rating system Muhammad Nazim Razali, Aida Mustapha, Salama A Mostafa Alabdullah, Saraswathy Shamini Gunasekaran, Malaysia</p> <p>Human factors and strategic decision making: The case of humanitarian logistics Gonzalo Barbeito, Marina Alonso Villota, Dieter Budde, Benni Thiebes, Stefan Pickl, Germany</p> <p>Digital environments to enable high-quality education for disadvantaged and disabled learners in Bulgaria Vladislava Lendzhova, Boris Manov, Valentina Milenkova, Dilyana Keranova, Bulgaria</p>	

107	Trust in Autonomous Dogfight Using Modeling and Simulation Co-Chairs: Lauren Reinerman-Jones and Ryan Wohleber, USA	HFSIM
12:00-13:30 AHFE 2: UNION SQUARE	<p>Toward trust HMIS and automatic trust calibration Glenn Taylor, Ryan Wohleber, Daniel Barber, Lauren Reinerman-Jones, USA</p> <p>Informing a multidimensional objective model to predict real-time human-machine trust using subjective and behavioral data Gianna Avdic McIntire, Katharine Woodruff, Peggy Wu, Brett Israelsen, USA</p> <p>Validating a multi-dimensional model to predict real time human machine trust using physiological, behavioral, and flight state data Peggy Wu, Brett Israelsen, Andrew Radlbeck, Gianna Avdic McIntire, Katharine Woodruff, USA</p> <p>A quantitative examination of a naturalistic human-AI trust paradigm Ryan Wohleber, Lauren Reinerman-Jones, Daniel Barber, USA</p> <p>The importance of calibrated trust in autonomy Lauren Reinerman-Jones, Daniel Javorsek, Mike Van Lent, Ryan Wohleber, USA</p>	
108	Advanced Production Management and Process Control I Co-Chairs: Beata Mrugalska and Marcel Usai, Poland/Germany	APMPC
12:00-13:30 AHFE 3: SUGAR HILL	<p>Immobilized inventory reduction model in a Peruvian MIPYME in the garment trade sector using stochastic programming and AHP multicriteria analysis Carlos Raymundo, Peru</p> <p>Development of a guideline for the sensor layout plan Tanja Steinbach, Benjamin Roehm, Reiner Anderl, Germany</p> <p>Multimodal human systems exploration with tangible XR for the internet of production: An expert survey Michael Preutenborbeck, Marcel Usai, Nicolas D. Herzberger, Frank Flemisch, Germany</p> <p>A domain-independent model for KPI-based process management Benedict Wohlers, Jan Strüwer, Felix Schreckenberger, Felix Barczewicz, Stefan Dziwok, Germany</p> <p>Continuous improvement as a competitive strategy within organizational quality processes Paola Silva-Tobar, Wladimir Chacón-Paredes, Cesar Guevara, Ecuador/Venezuela</p> <p>The influence of ergonomics as a quality parameter on the evaluation of manual assembly processes Filip Rybníkář, Michal Šimon, Pavel Vránek, Ilona Kačerová, Czech Republic</p> <p>Project planning: A determinant of project delivery with respect to time and cost Opeoluwa Akinradewo, Clinton Aigbavboa, Matthew Ikuabe, Peter Adekunle, Wellington Didibhuku Thwala, Shola Oiatunji, South Africa</p> <p>Construction project planning techniques: Awareness, usage and suitability Opeoluwa Akinradewo, Clinton Aigbavboa, Tunde Ogunbayo, Wellington Didibhuku Thwala, Ornella Tanga, South Africa</p>	
109	Design and Empathy I Co-Chairs: Fernando Moreira da Silva and Rita Almendra, Portugal	HDCS
12:00-13:30 AHFE 4: SUTTON PLACE	<p>The central role of empathy in service design Rita Almendra, Fernando Moreira da Silva, Portugal</p> <p>Emotion: A vital component in design decision making Fernando Moreira da Silva, Rita Almendra, Portugal</p> <p>Sustainable design approaches towards green higher education campus Maria João Delgado, Isabel Duarte de Almeida, Gianni Montagna, Portugal</p> <p>Biomateriality bridging design and the community Gabriela Forman, Michele Santos, Pedro Ferreira, Andrea Bandoni, Portugal</p> <p>Facilitating materials learning into design education through visual representations Aline Teixeira Souza Silva, Fernando Moreira da Silva, Brazil</p> <p>Enveloping a day - persona visual mapping Jose Silva, Rita Almendra, Tiago Marques, Daniel Raposo, João Neves, Portugal</p>	
110	Creating Value in Teams, Organizations, Communities, and Societies II Co-Chairs: Youji Kohda and Yasunobu Ito, Japan	HSSE
12:00-13:30 AHFE 5: MURRAY HILL	<p>Acquisition and sharing of knowledge and skills of visiting nurses in Japan Kagari Otani, Yasunobu Ito, Japan</p> <p>The production process of films from a relational perspective: A case study of independent films about Parkinson's disease in Japan Shun Coney, Yasunobu Ito, Japan</p> <p>Impact of the COVID -19 pandemic on electricity load demand in Thailand Su Wutyi Hnin, Amna Javed, Chawalit Jeenanunta, Jessada Karnjana, Youji Kohda, Japan</p> <p>Value creation through third-party certification: Case study of phase-free certification for certifying disaster prevention Aki Shimbo, Amna Javed, Hideomi Gokon, Youji Kohda, Japan</p> <p>Differences in processes and outcomes between starting from in-house industrial designers and starting from R&D engineers in design-driven innovation Yoshito Kubo, Osamu Sato, Japan</p>	

111	Culture and Innovation Co-Chairs: Ding Dianfan and Matthias Hillner, China/UK	CIE
12:00-13:30 AHFE 6: BOWERY	<p>Towards a democratisation of innovation Matthias Hillner, UK</p> <p>Emotion deep dive for designers: Seven propositions that operationalize emotions in design innovation Pieter Desmet, Haiyan Xue, Xin Xin, Wei Liu, Netherlands/China</p> <p>Barriers affecting incremental innovation in design-led SMEs in China's Greater Bay Area Xiuxiu Wu, Kin Wai Michael Siu, Joern Buehring, China</p> <p>Democratic management succession in Balkan family businesses: Appointment of family and nonfamily members in leadership roles Evangelos Markopoulos, Denis Ukperaj, Hannu Vanharanta, UK</p> <p>Understanding situationality using the Kepner-Tregoe Method in the company democracy model to increase employee engagement and knowledge contribution Evangelos Markopoulos, Jens Refflinghaus, Marven Roell, Hannu Vanharanta, UK</p> <p>Metaverstic innovation management: The world innovation stock exchange democratic incubator Evangelos Markopoulos, Ines Selma Kirane, Hannu Vanharanta, UK/Finland</p> <p>An ESG aligned global gender equity model for creating equitable corporate and government organisations Evangelos Markopoulos, Marlena Schmitz, Baiba Ziga, UK</p> <p>Exploring the underlying entrepreneurial competencies essential for the competitive advantage of indigenous contractors in the global south: A Ghana study Matthew Kwaw Somiah, Clinton Aigbavboa, Wellington Didibhuku Thwala, Ghana</p>	
112	Ergonomics in Design: Techniques and Applications Co-Chairs: Myriam Frejus and Jae Sun Yi, France/South Korea	ED
12:00-13:30 AHFE 7: BRYANT PARK	<p>Making human-AI interactions sustainable: 7 key questions for an ergonomics perspective on artificial intelligence Myriam Frejus, Dounia Lahoual, Marion Gras-gentiletti, France</p> <p>Brand Design strategy for public administration. An experimentation on Lazio Region's employment centers in Italy Laura Ricci, Carlotta Belluzzi Mus, Carlo Martino, Alessio Caccamo, Sabrina Lucibello, Silvia Cosentino, Vincenzo Maselli, Lorena Trebbi, Eugenia Maria Canepone, Davide Fornari, Italy</p> <p>Integrated design of electrical equipment bay layout for civil aircraft based on ergonomics Ruina Tian, China</p> <p>Calculation of color visual beauty in the foreground of text coverage on the interface of rehabilitation robot Shu Yuyu, China</p> <p>Bespoke and repetitive: Converging technologies in the design of custom products Zerong Yang, Jason Germany, USA</p> <p>Creation of a matrix of choice of clamping tools using CAPTIV Bronislaw Kapitaniak, France</p> <p>Development of a weight management service that considers individual physical characteristics and psychological factors Jae Sun Yi, Suah Cho, South Korea</p>	
113	DHM and Postural Performance Co-Chairs: Sofia Scataglini and Sudhakar Rajulu, Belgium/USA	DHMAO
12:00-13:30 AHFE 8: COLUMBUS CIRCLE	<p>Changes of foot dimensions with elevated heel heights: A pilot study Ao Zhu, Yu-chi Lee, China</p> <p>Contact pressure as an indicator of postural stability in digital human models Aijaz Siddiqui, Dibakar Sen, India</p> <p>Precision of marker-based finger tracking for broad biomechanical studies using 6DOF targets André Kaiser, Norman Hofmann, Heike Hermsdorf, Germany</p> <p>Application of brain-computer interface for disabled people on human factors engineering Siyang Long, Jing Yang, China</p> <p>Shoulder postures in EVA training in reduced gravity analogues Kaitlyn Guhl, Linh Vu, K. Han Kim, Sudhakar Rajulu, USA</p> <p>Functional anthropometric differences of the lower body for aging women based on body shape and size Linsey Griffin, Elisheva Savvateev, Emily Seifert, Minji Yu, USA</p>	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Wednesday, July 27</p>	<p>114 Interface Design Co-Chairs: Yuan Fang and Haoran Shao, China</p>	<p>ED</p>
	<p>12:00-13:30 AHFE 9: FLATIRON</p> <p>Evaluation of camera APP interface element layout based on interface aesthetics model Yuan Fang, Zhisheng Zhang, Zhijie Xia, China</p> <p>Evaluation of foreign E-commerce web interface element layout based on moon-spencer model Haoran Shao, Zhisheng Zhang, Zhijie Xia, China</p> <p>The style correlation between color palette generated by the K-means and original picture Zhihao Zhang, Zhisheng Zhang, Zhijie Xia, China</p> <p>Trend analysis of the layout design of the smartphone's rear screen based on aesthetics Chang Gao, Zhisheng Zhang, Zhijie Xia, China</p> <p>Evaluation of AI generation interface element layout based on aesthetics model Jincheng Hu, Wenyu Wu, Zhijie Xia, China</p> <p>Layout of emotional elements and functional modules in web design based on aesthetic indicators Ziwei He, Wenyu Wu, Zhijie Xia, Chengqi Xue, China</p> <p>Evaluation of interface interaction efficiency of industrial design education based on virtual reality Yining Xing, Wenyu Wu, Zhijie Xia, Chengqi Xue, China</p> <p>MORINHUUR music visualization device design Yunyan Zhao, Lisi You, Wenguang Li, China</p>	
	<p>115 Trust in Vehicle Automation Chair: Katie Parnell, UK</p>	<p>RR</p>
<p>12:00-13:30 AHFE 10: GRAMERCY</p> <p>Building trust with self-driving: Associations between driver's situation awareness and preferences for behaviors of conditionally automated vehicles Hyowon Lee, Ning Jiang, Siby Samuel, Canada</p> <p>A theoretical framework for trust in automation considering its relationship to technology acceptance and its influencing factors Pia Sophie Charlotte Dautzenberg, Gudrun Mechthild Irmgard Voß, Germany</p> <p>Understanding drivers' trust after software malfunctions and cyber intrusions of digital displays in an automated car William Payre, Jaume Perellomarch, Giedre Sabaliauskaite, Hesamaldin Jadidbonab, Siraj Shaikh, Hoang Nguyen, Stewart Birrell, UK</p> <p>The interplay of personality traits with drivers' gap acceptance Ann-Christin Hensch, Matthias Beggiato, Sarah Mandl, Anja Strobel, Josef F. Krems, Germany</p> <p>Assessing drivers' trust in automated driving systems: An integrated study Yu Zhang, Chongbin Li, Jing Huang, Yaling Zeng, Liu Yang, China</p> <p>Behavioral adaptation in conditionally automated vehicles Orel Yarkoni, Avinoam Borowsky, Yisrael Parmet, Israel</p>		
<p>116 Ergonomics Design and Emotion Chair: Fernando Moreira da Silva and Paula Trigueiros, Portugal</p>	<p>ED</p>	
<p>12:00-13:30 AHFE 11: MADISON SQUARE</p> <p>Care systems for people with Parkinson's disease and their interaction with clothing: Case study in Portugal Leticia Marteli, Luis Carlos Paschoarelli, Fernando Moreira da Silva, Paula Trigueiros, Fabio Barbieri, Brazil</p> <p>Freedom, equality, identity: The right to design Paula Trigueiros, Portugal</p> <p>In-car sound design under the framework of emotional design Yufei Liu, Danhua Zhao, China</p> <p>The rewards of user experience feedback on developing costumes that last, a swimsuit example Michele Santos, Portugal</p> <p>Accessible digital game on the un sustainable development goals in Brazil Regina Heidrich, Sheisa Amaral Da Cunha Bittencourt, Rita Almendra, Brazil</p> <p>Creativity and emotion in design Ana Moreira da Silva, Portugal</p> <p>UrbanCroma: Chromatic methodology applied to Oeiras Municipality, Portugal Fernando Moreira da Silva, Margarida Gamito, Portugal</p>		

<p>117</p>	<p>Virtual Environments and Ergonomics Co-Chairs: Praveen Maghelal and Cesar Corrales, UAE/Peru</p>	<p>PEHF</p>
<p>12:00-13:30 AHFE 12: TURTLE BAY</p>	<p>Integrating ergonomics, biomechanics, and driving behavior in a virtual environment: Developing a transactional framework Praveen Maghelal, UAE</p> <p>Introduction of distractions in immersive virtual reality laparoscopic surgery training – A pilot study Xintong Wu, Meng Li, Tianren Luo, Shuping Xiong, China</p> <p>Memory effect of Tik Tok animal popular science short video Jiayin Zhang, China</p> <p>Understanding the impact of induced stress on team coordination strategy in multi-user environments Lokesh Singh, Sarvapali Ramchurn, Obaid Malik, Jediah Clark, UK</p> <p>Impact of remote work on ergonomic risk in Peruvian companies during COVID-19 Wilmer Atoche, Jorge Wam, Akio Murakami, Percy Mesias, Peru</p>	
<p>118</p>	<p>Driver Performance, Behaviour, and Physiology II Co-Chairs: Ishbir Singh and Nikita Rajendra Sharma, India/Germany</p>	<p>RR</p>
<p>12:00-13:30 AHFE 13: MADISON 1</p>	<p>Driver intention identification based on vehicle driving state and driving behavior interaction Zehong Wei, Lan Zhao, Yuanyuan Ren, Ran Yang, Xuelian Zheng, Zhimao Hu, China</p> <p>Attention and action preparation during lane change maneuvers: The role of irrelevant information Nikita Rajendra Sharma, Jai Prakash Kushvah, Gerhard Rinkenauer, Germany</p> <p>Different feedback strategies: Evaluation of active vehicle motions in a multi-level system Pia Wald, Niklas Henreich, Martin Albert, Johannes Ossig, Klaus Bengler, Germany</p> <p>Measurement and analysis of vibration transmissibility through tractor seat Amandeep Singh, Siby Samuel, Ishbir Singh, Jagmeet Singh, Yash Kumar Dhabhi, Chander Prakash, Canada/India/USA</p> <p>Development and testing a drowsiness detector based on ECG sensors in steering wheel Jose Solaz, Jose Laparra, Hugo Silva, Knulp Rittmeyer, Nicolás Palomares, Spain</p> <p>Impact of cognitive distractions on drivers' heart rate and electrodermal activity Apurva Misra, Siby Samuel, Khatereh Shariatmadari, Shi Cao, Canada</p>	
<p>119</p>	<p>Ergonomics in Urban Planning II Co-Chairs: Fausto Cabrera and Mo Zhou, Ecuador/Poland</p>	<p>SUPI</p>
<p>12:00-13:30 AHFE 14: MADISON 2</p>	<p>Zoning according to type of urban land: The case of Isidro Ayora Canton, Guayas, Ecuador Fausto Cabrera, Jesús Rafael Hechavarría Hernández, Lorena Sánchez, Ecuador</p> <p>Master plan of green areas for the conformation of public spaces after the COVID-19 pandemic. Case study: Isidro Ayora Canton, Guayas, Ecuador Danny Macías, Jesús Rafael Hechavarría Hernández, Ecuador</p> <p>Mapping intermittent practices in Lisbon Rita Ochoa, Alessia Allegri, Portugal</p> <p>Urban sustainable transportation: Environmental aspect Maryna Averkyna, Ukraine/Estonia</p> <p>Asymmetry in professionals' perception of sustainable construction Patience Tunji-Olayeni, Clinton Aigbavboa, Ayodeji Oke, Nigeria/South Africa</p> <p>Early impact of COVID-19 on private sector income earners homeownership delivery in Nigerian cities: Issues and possible solutions Andrew Ebekozi, Clinton Aigbavboa, South Africa</p> <p>Environmentally sustainable construction implementation in Ghana: Perspective of professionals working with contractors Mark Pim-Wusu, Clinton Aigbavboa, Wellington Didibhuku Thwala, Ghana/South Africa</p>	

Wednesday, July 27

120	User Interface and Accessibility II Co-Chairs: Liang Tan and Ziyi Wang, China	UUE
12:00-13:30 AHFE 15: MADISON 3	<p>Interface design evaluation of educational app for preschool children based on analytic hierarchy process Jing Yang, Ziyi Wang, China</p> <p>Designing meaningful interactions for social innovation: An application of design thinking Liang Tan, China</p> <p>Gesture interaction preference of healthy app for elderly users Liang Wenli, Guo Yongyan, China</p> <p>Interactive design based on five senses solution for the externalization of pain sensation Zizhong Hua, Jing Luo, China</p> <p>The information visualization design of smart museums based on the digital twin theory Kexin Feng, Tao Xi, China</p> <p>An experimental study on the applicability of fusion display and overlay display of AR smart city data and information Yu Zheng, Zhanxun Dong, China</p> <p>A process for infusing user experience design thinking into web and mobile applications engineering education Emad Bataineh, Ahmed Seffah, UAE</p> <p>A bibliometric and visual analysis of interactive distance perception Chaomin Ma, Duzhi Yang, China</p>	
13:30-14:30 LUNCH AT THE RESTAURANT OF YOUR CHOICE		
121	Interaction Design in Transportation Co-Chairs: Jürgen Pichen and Vesna Spasojevic Brkic, Germany/Serbia	SYSI
14:30-16:00 AHFE 1: CHELSEA	<p>Serbian and Libyan anthropometric measurements data in contemporary systems' design Vesna Spasojevic Brkic, Zorica Veljkovic, Martina Perisic, Ahmed Essdai, Serbia</p> <p>An exploration into the dependency of speed and distraction of vehicle drivers on a handling course at Bosch Boxberg Proving Ground Sumona Sen, Sarah Kunz, Hans Juergen Buxbaum, Tobias Rusch, Germany</p> <p>Design and evaluation methodology for cockpit lighting system in civil transport aircraft Yi Zeng, China</p> <p>Should I stay or should I go? Using a cooperative sneak peek interface in highly automated vehicles Jürgen Pichen, Nikol Figalová, Martin Baumann, Germany</p> <p>A taxonomy of level of automation in intelligent operational supervisory task Aobo Wang, Beiyuan Guo, Shuqi Xue, Ting Jiang, Haifeng Bao, China</p>	
122	Social Challenges and Digital Transformation Co-Chairs: Marina Weck and Mads Lund Andersen, Finland/Denmark	HFBMS
14:30-16:00 AHFE 2: UNION SQUARE	<p>Digital assistive technology as a path towards successful aging in the Baltic Sea region Marina Weck, Kirsten Maibom, Kimmo Vanni, Michael Smærup, Finland</p> <p>Cross-border communication and service provision within silver economy domain: How to sustain a collaborative platform for seniors services Taivo Kangilaski, Ingrid Pappel, Markus Sihvonen, Marina Weck, Estonia/Finland</p> <p>Enhancing open innovation: The co-creation of an open innovation toolkit Mads Lund Andersen, Marina Weck, Michael Smærup, Denmark</p> <p>Critical factors of business development for the life sciences in Thailand: Lesson learned from Thailand excellence center of life sciences Varit Intrama, Thailand</p> <p>Digital transformation in higher education: Bibliometric analysis of existing knowledge Jorge Cruz-Cárdenas, Carlos Ramos, Jorge Guadalupe-Lanas, Andrés Palacio Fierro, Mercedes Galarraga Carvajal, Ecuador</p> <p>Conceptual description of the key attributes of human resource management practices in a developing economy Helen Ifedolapo Babalola, Clinton Aigbavboa, South Africa</p>	

123	Urban and Environmental Design for Inclusion Co-Chairs: Gubing Wang and Kiana Kianfar, Netherlands/Italy	DI
14:30-16:00 AHFE 3: SUGAR HILL	<p>Trend analysis of research hotspots in the field of universal design based on CiteSpace knowledge graph Xin Ye, Qian Ji, Zhou Fang, Min Wan, China</p> <p>How to co-design with older adults on community-level behavior change interventions: Insights from a rapid review Gubing Wang, Dena Kasraian Moghaddam, Carlijn Valk, Yuan Lu, Pieter Van Wesemael, Netherlands</p> <p>Inclusive design strategies for hybrid space with conflicts between economic space and life space: A case in Guangzhou Yong Yu Zhang, Jia Xin Xiao, Ming Jun Luo, Guan Yun Li, China</p> <p>Design intervention and behaviour change: Implications for inclusive public design to promote sustainable behaviour Yi Ming Li, Jia Xin Xiao, Ming Jun Luo, China</p> <p>Design-enabled innovation in smart city context. Fostering social inclusion through intercultural interaction Alessandra Rinaldi, Kiana Kianfar, Italy</p> <p>Sobreiro: Participation and intervention of local communities in the historical and artistic construction of a stigmatized neighborhood Ana Clara Roberti, Helena Santos, Daniel Brandão, Portugal</p>	
124	Management and Leadership II Co-Chairs: Charlotte Haid and Florian Reichelt, Germany	HFML
14:30-16:00 AHFE 4: SUTTON PLACE	<p>Participative leadership in healthcare: which situational contextual factors influence managers' decision to involve employees? Christina Mayer, Marisa Schirmer, Thushayanthini Sivatheerthan, Susanne Mütze Niewöhner, Verena Nitsch, Germany</p> <p>AI as a leader - what individual factors influence the acceptance of AI applications that take on leadership tasks? Deborah Petrat, Lucas Polanski-Schröder, Ilker Yenice, Lukas Bier, Ilka Subtil, Germany</p> <p>How to support the appropriate method selection in design-technique convergence? Florian Reichelt, Daniel Holder, Paulina Bosch, Thomas Maier, Germany</p> <p>Accommodating employee preferences in algorithmic worker-workplace allocation Charlotte Haid, Sebastian Stohrer, Charlotte Unruh, Tim Bütthe, Johannes Fottner, Germany</p> <p>What do you like or dislike about your work? First explorations on a general feeling of work Eric Brangier, Blandine Brangier, France</p> <p>The task of the leader in today's media industry Cristian Londoño, Ecuador</p> <p>Too many requests, too little time: Prioritizing research for maximum impact Maria Natalia Russi-Vigoya, Toni Aguilar, Robin Langerak, Melissa Meingast, Kerstan Cole, Michael Bartha, USA</p> <p>Foreign direct investments in the South African construction industry: Promulgating the inherent benefits Matthew Ikuabe, Olushola Akinshipe, Clinton Aigbavboa, Andrew Ebekozien, Ayodeji Oke, Romane Mofokeng, South Africa</p>	
125	Fashion and Textiles for Well-Being and Sustainability Co-Chairs: Gianni Montagna and Carla Morais, Portugal	HFATE
14:30-16:00 AHFE 5: MURRAY HILL	<p>Design as an enhancer of the circular economy in fashion Catarina Carreto, Rui Carreto, Portugal</p> <p>Interaction and comfort for children - textiles and composite materials Cristina Salvador, Portugal</p> <p>New territories of sustainable fashion proposals for the transition towards sustainability and circularity Gianni Montagna, Maria Antonietta Sbordone, Alessandra Esposito, Ana Marques, Ilenia Amato, Rita Gaspar, Portugal</p> <p>Intervention effect of sportswear on body temperature and sweat distributions Xinbo Wu, Rong Liu, Mohammad Mohiuddin Choudhury, Chow Hung Kay Daniel, Chongyang Ye, Hoi Hung Ho, Hong Kong</p> <p>3D knitting for upholstery: Guidelines to design at the interface of sustainable fashion and furniture Benedetta Cerulo, Flavia Papile, Martina Motta, Andrea Marinelli, Giovanni Maria Conti, Barbara Del Curto, Italy</p> <p>Biodyes: A new solution for textile dyeing technology Cristina Carvalho, Gianni Montagna, Carla Costa Pereira, Carlos Manuel Figueiredo, Portugal</p>	

126	Kansei Engineering II Co-Chairs: Anna Szopa and Yitong Jiang, USA/China	KE
14:30-16:00 AHFE 6: BOWERY	<p>The relationship between the attitudes to physical exercise and exercise habit under competitive situation Atsunari Suzuki, Mai Nakamura, Akane Mikura, Junya Kitagawa, Yuko Sakurama, Etsuko Ogasawara, Naoki Takahashi, Takashi Sakamoto, Fumitake Sakaori, Toshikazu Kato, Japan</p> <p>Innovative design of home electric nasal washer based on Kansei Engineering Miao Liu, Zhen Xu, China</p> <p>Minimalist design of oven products based on differences in user needs Miao Liu, Yitong Jiang, China</p> <p>A Comparative study of impressions on clothes of international apparel brands: Cultural and gender differences in Japan, China, and Thailand Takashi Sakamoto, Naoki Takahashi, Toshikazu Kato, Japan</p> <p>Analysis of how impressions are fixed after one week of listening to music using subjective evaluation and brain activity measurement Kouki Kamada, Anna Endo, Naoki Takahashi, Takashi Sakamoto, Toshikazu Kato, Japan</p> <p>Research methods of product perceptual image recognition in Kansei Engineering Ruiguang Tan, China</p>	
127	21st Century Design - Education, Principles, and Process Chair: Joyce Thomas, USA	IPID
14:30-16:00 AHFE 7: BRYANT PARK	<p>Iterative prototyping & testing in the development of a reliable and user-friendly dispensing device for medical consumables Young Mi Choi, Wendell Wilson, USA</p> <p>Design for the real world: A look back at Papanek from the 21st century Joyce Thomas, Megan Strickfaden, USA</p> <p>Supra-recycling: An opportunity for the generation of environmental-cultural ventures Cesar Guevara, Freddy Rodolfo Lalaleo Analuisa, Diego Mauricio Bonilla Jurado, Ecuador</p> <p>Designing in the wild: Problem-solving for specialized apparel and soft products Megan Strickfaden, Joyce Thomas, Canada</p> <p>The achievement of using research results from mixed methods in design workshop within educational scenario Ching I Chen, Meng-Cong Zheng, I Wen Yen, Taiwan</p> <p>Evaluating XR techniques in air travel design for early technology readiness levels Shelley Kelsey, Chantal Trudel, Samantha Astles, Canada</p> <p>Design thinking in interdisciplinary collaboration: Creating innovative solutions for students' community Juanjuan June He, USA</p>	
128	Design and Empathy II Co-Chairs: Fernando Moreira da Silva and Rita Almendra, Portugal	HDCS
14:30-16:00 AHFE 8: COLUMBUS CIRCLE	<p>Sustainable product service system (SPSS) for designing a Portuguese furniture service: Comprehensive approach Rute Gomes, José Manuel Silveira Dias, Marco Neves, Paulo Dinis, Portugal</p> <p>Design strategies for socio-environmentally adverse territories Ana Thudichum Vasconcelos, Joao Cruz, Portugal</p> <p>Communication design and citizenship: A card game that is an urban forum Inês Veiga, Portugal</p> <p>The process of creation: Artistic creation and creative processes Maria Silvia Barros De Held, Carlos Alho, Vanda Matos, Portugal</p> <p>Smart and inclusive built environment: Is remote work the key? Cristina Caramelo Gomes, Houria Ariane, Portugal/Algeria</p>	
129	Service Systems in the Intelligent Algorithms' Era: Responsible Entities Learning to Co-Invest in a Shared Future Co-Chairs: Clara Bassano and James C. Spohrer, Italy/USA	HSSE
14:30-16:00 AHFE 9: FLATIRON	<p>Predicting economic indicators using political texts Alessandra Amendola, Alessandro Grimaldi, Walter Distaso, Italy</p> <p>Augmented decision making model for responsible actors in healthcare Francesco Polese, Luca Carrubbo, Antonietta Megaro, Italy</p> <p>Artificial intelligence algorithms in precision medicine: A new approach in clinical decision-making Valeria Damato, Pietro Campiglia, Clara Bassano, Italy</p> <p>Brand algorithms and social engagement in digital era Teresa Marrone, Pierpaolo Testa, Italy</p> <p>Algorithms and human creativity: Threats or opportunities? A literature review Sergio Barile, Clara Bassano, Paolo Piciocchi, Pietro Vito, James Clinton Spohrer, Italy</p> <p>Planning the assessment of the integration of a humanoid robot in healthcare services Alexandra Fernandes, Marten Bloch, Magnhild Kaarstad, Maren Eitheim, Kine Reegård, Linda Sørensen, Norway</p>	

<p>130</p>	<p>Human Factors and Future Accessible Technologies Co-Chairs: Patricia Acosta-Vargas and Jenna Korentsides, Ecuador/ USA</p>	<p>HFAAT</p>
<p>14:30-16:00 AHFE 10: GRAMERCY</p>	<p>Head-Up Displays (HUDs): Analysis of automotive use considerations Jenna Korentsides, Andi St Clair, Meghana Dyapa, Alex Chaparro, USA Users' satisfaction with an assistive device and quality of life: A preliminary study on lower limb prosthetics Letícia Garcez, Ana Claudia Tavares Rodrigues, Fausto Orsi Medola, Luciana Ramos Baleotti, Frode Eika Sandnes, Atiyeh Vaezipour, Brazil Most common accessibility barriers in native mobile applications used in Ecuador Gloria Acosta-Vargas, Juan Andrade, Carlos Lucano, Jose Rodriguez Aldaz, Janio Jadán-Guerrero, Isabel L. Nunes, Patricia Acosta-Vargas, Ecuador Failures in library website accessibility: A problem of accountability Angie Brunk, Daniel Ireton, USA Inspector assistant robots: Future worker impressions and cognitive workload assessments Rafael Patrick, Palak Varshney, Kereshmeh Afsari, USA The evolution of assistive technology. A literature review of technology developments and applications Matteo Zallio, Takumi Ohashi, UK A comparison of accessibility assessment tools in the inspection of an informative government website on the situational status of COVID-19 Freddy Paz, Freddy Asrael Paz, Arturo Moquillaza, Fiorella Falconi, Joel Aguirre, Peru</p>	
<p>131</p>	<p>Textile Design and Engineering Co-Chairs: Gianni Montagna and Tamaki Mitsuno, Portugal/Japan</p>	<p>HFATE</p>
<p>14:30-16:00 AHFE 11: MADISON SQUARE</p>	<p>Color analysis and application of Luo fabric based on clustering algorithm Ren Long, Wenyi Han, Mei Ming Xiong, Xin Zeng, China Flexible coverings: (Re)dressing bodies and facades. Analogies between the epidermis of our body and the epidermis of our buildings facades Marlene Couceiro, Cristina Carvalho, Portugal Clothing-as-a-service? A research agenda towards a sustainable and socially accepted circular economy for clothing Philipp Brauner, Luisa Vervier, Martina Ziefle, Melina Sachtleben, Stefan Schlichter, Thomas Gries, Germany Validation and reliability of Sizestream 3D scanner using regression modeling Manoj Tiwari, Noopur Anand, India Method for evaluating wet textile samples using a sweating guarded hotplate Timothy Rioux, Isabella Latham, Xiaojiang Xu, USA</p>	
<p>132</p>	<p>Cognitive Computing, Biomedical Engineering and Bioinformatics Chair: Sofia Scataglini, Belgium</p>	<p>ICEEP</p>
<p>14:30-16:00 AHFE 12: TURTLE BAY</p>	<p>Trust in an autonomous agent for predictive maintenance: How agent transparency could impact compliance Loïck Simon, Philippe Rauffet, Clément Guérin, Cédric Seguin, France How a few custom keycaps make keyboards more ergonomic and reduce eye movement by 35% Benny Platte, Marc Ritter, Christian Roschke, Rico Thomanek, Claudia Hösel, Matthias Baumgart, Germany Responding to the loneliness in the new era of the internet: Exploring the role of hugging and fitting in alleviating loneliness Song Siying, Xin He, China Elicitation of diagnosis strategy during scanning chest x-rays from eye tracking stimulated retrospections Hirotaka Aoki, Koji Morishita, Marie Takahashi, Rea Machida, Atsushi Kudoh, Tsuyoshi Shirai, Japan User related factors affecting information ergonomics in mission control context Jussi Okkonen, Matti Jalava, Heikki Mansikka, Jaakko Hakulinen, Markku Turunen, Finland Technological Innovations for the treatment of impulsiveness María López, Mónica Acosta-Rodas, Mónica Bolaños-Pasquel, Carlos Ramos-Galarza, Ecuador</p>	

Wednesday, July 27

133	Emotional Engineering III Co-Chairs: Hiroko Shoji and Hideyoshi Yanagisawa, Japan	APD
14:30-16:00 AHFE 13: MADISON 1	<p>Effects of field-of-view expansion using a wide-field HMD on active linear motion Tomoya Koishi, Keiichi Watanuki, Kazunori Kaede, Japan</p> <p>Evaluation of attention guidance through visual subthreshold stimulus using a HMD Yusuke Maeda, Keiichi Watanuki, Kazunori Kaede, Japan</p> <p>Effects of scent presentation on choice and judgment Yusuke Hatano, Keiichi Watanuki, Kazunori Kaede, Japan</p> <p>Building an objective assessment of user's acceptance for the design and development of innovative products Nodoka Yamada, Kazutaka Ueda, Keisuke Nagato, Masayuki Nakao, Japan</p> <p>Confidence estimation in multiple choice questions using eye movements Naoya Hamadate, Keiichi Watanuki, Kazunori Kaede, Japan</p>	
134	Cognitive Engineering I Co-Chairs: Hasan Ayaz and Bruno Berberian, USA/France	CN
14:30-16:00 AHFE 14: MADISON 2	<p>Evaluation of real-time assessment of human operator workload during a simulated crisis situation, using EEG and PPG Thomas de Groot, Johan de Heer, Rafal Hryniewicz, Manon Tolhuisen, Tije Oortwijn, Netherlands</p> <p>Physiological markers of vigilance variation in a supervisory task Nicolas Maille, Mick Salomone, Andrea Desantis, Kevin Le Goff, Jean-François Sciabica, Marie-Christine Bressolle, Bruno Berberian, France</p> <p>Comparison of heart rate between novice and experienced players during video gameplay Adrian Curtin, Jan Watson, Yigit Topoglu, Nicholas DeFilippis, Jintao Zhang, Rajneesh Suri, Hasan Ayaz, USA</p> <p>Classifying mental workload using EEG data: A machine learning approach Şeniz Harputlu Aksu, Erman Çakıt, Turkey</p> <p>An innovative measure of cognitive function in the human-autonomy partnership Samson Palmer, Dale Richards, Graham Shelton-Rayner, UK</p> <p>Thermal imaging of the face: Mental workload detection in flight simulator Almoctar Hassoumi, Vsevolod Peysakhovich, Arthur Le Coz, Christophe Hurter, Mickaël Causse, France</p>	
135	Virtual Reality and Interaction Design Co-Chairs: Paulo Noriega and Francisco Rebelo, Portugal	ED
14:30-16:00 AHFE 15: MADISON 3	<p>Measuring emotion, interaction, and cultural outcomes after a VR game: The case of São Tomé Yanick Trindade, Francisco Rebelo, Paulo Noriega, Portugal</p> <p>A workflow for multi-user VR application within the physical classrooms of architecture and urbanism courses Emerson Gomes, Francisco Rebelo, Naylor Vilas Boas, Paulo Noriega, Elisangela Vilar, Brazil</p> <p>HeroFit: A gamified solution with a mini game, to promote the change of sedentary behaviors Francisco Rebelo, Diana Carvalho, Paulo Noriega Machado, Elisangela Vilar, Portugal</p> <p>Emoticon input method design based on theory of use and gratification Ruoxin Yuan, Jintao Kang, Rui Liu, Zhang Heng, Chunxiao Li, Xiaojie Xie, Zhaolin Lu, China</p> <p>Strategy for ergonomic validation of a physical mock-up involving limited user trial Amare Wibneh Mengistu, Ashish Kumar Singh, Sougata Karmakar, India</p> <p>An interactive design solution for prenatal emotional nursing of pregnant women Leyi Wu, Jing Luo, Hui-hui Guo, China</p> <p>Sense of time while perceiving periodic visual stimuli by peripheral vision in virtual reality Ryota Ino, Yohsuke Yoshioka, Japan</p>	
REFRESHMENTS: 16:00 - 16:30 • ROOM: EMPIRE BALLROOM (LEVEL 2)		

<p>16:30-18:00 AHFE 1: CHELSEA</p>	<p>136 Innovative Healthcare Technology Co-Chairs: Patrick Seitzinger and Jan Neuhöfer, Canada/Germany</p> <p>Technological Innovations for ADHD treatment María López, Mónica Acosta-Rodas, Mónica Bolaños-Pasquel, Carlos Ramos-Galarza, Ecuador</p> <p>Implications and consequences of artificial intelligence in healthcare quality and medical training Jay Kalra, Patrick Seitzinger, Canada</p> <p>User interface assessment of a tool for digital learning in nursing Jan Neuhöfer, Sabine Hansen, Tim Wöllenstein, Germany</p> <p>Drawing connections: Artificial intelligence to address complex health challenges Patrick Seitzinger, Jay Kalra, Canada</p> <p>Real time battlefield casualty care decision support Christopher Nemeth, Adam Amos-Binks, Gregory Rule, Dawn Laufersweiler, Natalie Keeney, Yuliya Pinevich, Vitaly Herasevich, USA</p> <p>Influence of ergonomics of electric power industry enterprises on nervous system diseases Riad Taha Al-Kasasbeh, Nikolay Korenevskiy, Altyn Amanzholovna Aikkeyeva, Mahdi Salman Alshamasin, Sofia Nikolaevna Rodionova, Ashraf Shaqdan, Ashraf Shaqadan, Sergey Felist, Yousif Eltous, Jordan</p> <p>Is Latvia ready for the value-based healthcare era? Māra Pētersone, Ingars Erins, Karlis Ketners, Latvia</p>	<p>EHMD</p>	
	<p>16:30-18:00 AHFE 2: UNION SQUARE</p>	<p>137 Vehicle Automation II Co-Chairs: Molly Mersinger and Einat Tenenboim, USA</p> <p>Semi-autonomous vehicle crashes: An exploration of contributing factors Molly C. Mersinger, Alex Chaparro, USA</p> <p>The use of automated traffic enforcement methods by Abu Dhabi police Mohammed Al Eisaei, Saif Al Harthi, Abdulla Alghafli, Ahmed Al Zaidy, UAE</p> <p>Analysis of human perception models for motion sickness in autonomous driving Ilhan Yunus, Fikri Farhan Witjaksono, Elif Naz Basokur, Jenny Jerrelind, Lars Drugge, Sweden</p> <p>Incorporating situational awareness cues in virtual reality environments for passengers of autonomous vehicles Nadia Fereydooni, Einat Tenenboim, Bruce Walker, Srinivas Peeta, USA</p> <p>PersonalAlzation - exploring concepts and guidelines for AI-driven personalization of in-car HMIs in fully automated vehicles Shrivaas Madapusi Sundar, Valeria Bopp-Bertenbreiter, Daniel Ziegler, Ravi Kanth Kosuru, Christian Knecht, Bastian Pfleging, Frederik Diederichs, Germany</p> <p>Bringing the driver back in-the-loop: Usefulness of letting the driver know the duration of an automated drive and its impact on takeover performance Cyril Marx, Nikolai Ebinger, Erika Santuccio, Peter Moertl, Austria</p>	<p>RR</p>
	<p>16:30-18:00 AHFE 3: SUGAR HILL</p>	<p>138 Usability and User Experience Applications IV Co-Chairs: Franziska Braun and Ning Song, Germany/China</p> <p>Enhancing driver's experience through emotion sensitive lighting interaction Franziska Braun, Fabian Edel, Antonino Ardilio, Germany</p> <p>Impact of image features on visual attention: An eye-tracking study Hilal Al-Maqbali, Amr Mohamed Abdel Kader, Mika Luimula, Jawaher Albalushi, Calin Popescu, Oman</p> <p>The future of shopping: Changing consumers' mindset through metaverse-immersive experiences: Hibe case study Hugo Alcantara, Cesar Alcantara, Mexico</p> <p>Effect of instantaneous changes of spatial size on sense of time and gaze characteristics Ayano Naoi, Sodai Kono, Keita Kado, Yohsuke Yoshioka, Japan</p> <p>Evaluation of online education service system based on user emotional valence Xuemei He, Ning Song, China</p> <p>Utilization of enterprise design thinking to drive a frictionless experience in complex systems Felix Portnoy, Anu Kandimalla, USA</p> <p>Colormap-based effectiveness of basic visualizations Chunzhu Mi, Xiaojun Liu, China</p> <p>English pronunciation IPA mobile application Dorys Maribel Cumbe Coraizaca, Mike David Nunez Morales, Cesar Guevara, Vicente Bolívar Guzmán Bárcenas, Ecuador</p>	<p>UUE</p>

Wednesday, July 27

139	Digitalization and Value Driven Strategic Marketing Co-Chairs: Heiko Fischer and Vesa Salminen, Germany/Finland	HFBMS
16:30-18:00 AHFE 4: SUTTON PLACE	<p>Effects of social media on B2B sales Heiko Fischer, Germany</p> <p>Antecedents of intention to use voice commerce applications and its impact on recommendation intention Silvia Zaharia, Elena Adolphs, Germany</p> <p>Innovative exploration of art toy design based on personality trait theory Miao Liu, Jiaqi Fang, China</p> <p>Understanding specialist sales aspects in recruitment process Maria Yllikäinen, Finland</p> <p>Importance of integrated marketing communication in the digital promotion of products and ideas in private and public sectors Santa Bormane, Romans Putans, Latvia</p> <p>Consumer acceptance for using personal data Keiko Toya, Japan</p>	
140	Implementation of Novel Technology and Gamification for Training and Certification Co-Chairs: Eric Peterson and Zhang Yao, USA/China	TELS
16:30-18:00 AHFE 5: MURRAY HILL	<p>Construction of comprehensive evaluation model for non-technical skills of art teacher under cross discipline Zhang Yao, Zhao Yating, Yihang Du, China</p> <p>Fun as a strategic advantage: Applying lessons in engagement from commercial games to military logistics training Jesslyn Alekseyev, Madeline Chmielinski, Emmanuel Mallea, Jo Kurucar, Vincent Mancuso, Robert Seater, USA</p> <p>Evaluating an immersive learning environment for robotics training Eric Peterson, Biayna Bogosian, Shahin Vassigh, USA</p> <p>Student perceptions of traditional and simulated learning in greenhouse management Abigail Werner, Shuchisnigdha Deb, Rafia Rahman, Amelia A. A. Fox, Richard L. Harkess, Daniel Carruth, Christopher R. Hudson, USA</p> <p>Innovations in HF education at the USAF academy: Values, decision-making, & performance with advanced technology in future conflict environments Chad Tossell, James Walliser, Ashley Pugh, Kenneth King, Jeffrey Parr, Chris McClernon, Blake Abrecht, Ali Momen, Ewart de Visser, USA</p>	
141	Manned-Unmanned Teaming Applications Co-Chairs: William Lawless and Gunar Roth, USA/Germany	HFRDUS
16:30-18:00 AHFE 6: BOWERY	<p>Experimental evaluation of mission-planning support in multi-user manned-unmanned teaming applications with shared unmanned systems Gunar Roth, Axel Schulte, Germany</p> <p>Facilitating collaboration between humans and unmanned heavy vehicles using verbal interaction and augmented reality Johan Fagerlönn, Yanqing Zhang, Lina Orrell, Hanna Rönntoft, Sweden</p> <p>Interdependence: A mathematical approach to the autonomy of human-machine systems William Lawless, Donald Sofge, USA</p> <p>Hazards and risks of automated passenger ferry operations in Norway Stig O. Johnsen, Christoph Thieme, Thor Myklebust, Even Holte, Kay Fjørtoft, Ørnulf Jan Rødseth, Norway</p> <p>Predicting human-system interaction risks associated with autonomous systems in mining Maureen Hassall, Ben Seligmann, Danellie Lynas, Joel Haight, Robin Burgess-Limerick, Australia</p> <p>Lessons learned and future direction of a teaming interface for unmanned vehicle tasks Elizabeth Frost, Heath Ruff, Kyle Behymer, USA</p> <p>Autonomous behavior of a swarm: How to keep it predictable by the operator following a loss of communications with the ground Serge Chaumette, France</p>	

142	Social and Cognitive Aspects of Cybersecurity Co-Chairs: Aryn Pyke and Dan Cassenti, USA	CYBER
16:30-18:00 AHFE 7: BRYANT PARK	<p>Social engineering and human-robot interactions' risks Ilenia Mercuri, Italy</p> <p>Isolating key phrases to identify ransomware attackers Jeremy Blackstone, Wayne Patterson, USA</p> <p>Information security awareness and training as a holistic key factor: How can a human firewall take on a complementary role in information security? Erfan Koza, Germany</p> <p>Cyberdefense adaptive training based on the classification of operator cognitive state Yvan Burguin, David Espes, Philippe Rauffet, Christine Chauvin, Philippe Le Parc, France</p> <p>The pitfalls of evaluating cyber defense techniques by an anonymous population Asmaa Aljohani, James Jones, USA</p> <p>Exploring human and environmental factors that make organisations resilient to social engineering attacks Erbilcan Aslan, Michelle Ancher, Rick van der Kleij, Netherlands</p>	
143	Culture, Art and Building Design for Inclusion Co-Chairs: Zijian Zhou and Michela Benente, China/Italy	DI
16:30-18:00 AHFE 8: COLUMBUS CIRCLE	<p>Design of interactive experience on participatory art based on Art Brut form Ruihan Zhang, China</p> <p>Contents accessibility in archaeological museums and sites: A proposal for a neuropsychological approach Michela Benente, Valeria Minucciani, Gianluca D'Agostino, Italy</p> <p>Cultural and creative product design strategies suitable for the visually impaired from the perspective of inclusive design Wei Ding, Zijian Zhou, China</p> <p>An information design tool to reduce cognitive load in older adults with chronic degenerative diseases during the anamnesis exploration phase in a general medical consultation Mariel Garcia-Hernandez, Fabiola Cortes Chavez, Alberto Rossa-Sierra, Marcela De Obaldia, Mexico</p> <p>Cardi B meets Chuck Taylors: Immersing high school students into the design process through a shoe design workshop Benjamin Bush, Katherine Chastain, USA</p>	
144	Human Factors in Gamification and Serious Games Co-Chairs: Edwin Ricardo Gamboa and Jie Zhou, Germany/China	HFGD
16:30-18:00 AHFE 9: FLATIRON	<p>Rather multifaceted than disruptors: Exploring gamification user types of crowdworkers Edwin Ricardo Gamboa, Mathias Bauer, Muhammad Reham Khawaja, Matthias Hirth, Germany</p> <p>Metaverse applications in game design using location-based features Chutisant Kerdvibulvech, Thailand</p> <p>Evaluation of rapport in human-agent interactions with a VR trainer after a 6-week exergame training for senior users with hypertension Ilona Buchem, Oskar Stamm, Susan Vorweg, Kai Kruschel, Kristain Hildebrand, Germany</p> <p>Application and transformation of Chinese traditional Buddhist statues in the next-generation games from the perspective of metaverse Jie Zhou, China</p> <p>Myopia prevention game interface design based on children's cognition Peiqi Yi, Yunzhu Hu, Xiaoxue Zhang, Hui Wang, China</p> <p>Immersive virtual interactive environment based on hologram technology for youth art education Yujie Zhang, Ao Jiang, China</p> <p>Designing a serious game to enhancement of musical skills of children using iPlus methodology Verónica-Gabriela Maldonado-Garcés, Elking Araujo, Mayra Carrión, Marco Santórum, Patricia Acosta-Vargas, Diana López, Mahatma Quijano, Luis Llanganate, Ecuador</p>	

Wednesday, July 27

145	Human Factors and Wearable Technologies II Co-Chairs: Seung Nam Min and Luoyu Fu, India/China	HFWT
16:30-18:00 AHFE 10: GRAMERCY	<p>Sensory fusion for remote multi-body temperature monitoring Sean Hackett, Florian Alber, Haocheng Zheng, Yang Cai, USA</p> <p>Assessing the effect of a powered ankle exoskeleton on human agility with inertial measurement units Katelyn King, Sarah Gonzalez, Leia Stirling, USA</p> <p>Measurement of spine curvature using Flexicurve integrated with machine vision Ramnaath M, Mounika D, Murali Subramaniyam, Seung Nam Min, India</p> <p>Design and research of flexible wearable medical testing equipment for pregnant women Luoyu Fu, Peiqi Yi, Zikun Gao, Yan Gan, China</p> <p>Simultaneous assessment of upper limb usage and sedentary behavior time among white- and blue-collar workers using wrist-worn accelerometers Micaela Porta, Bruno Leban, Massimiliano Pau, Italy</p> <p>Tailored gamification for wearable activity trackers: User segmentation based on gamification preferences and user characteristics Jie Yao, Di Song, Tao Xiao, China</p> <p>Hypoglycemia vehicle detection system using non-invasive sensors applying both EEG And HRV real time measures: Neuroergonomics theoretical design Awad Aljuaid, Saudi Arabia</p>	
146	Advances and Innovation in Techniques for Aging Population Co-Chairs: Marie Sjölander and Mohsen Zare, Sweden/France	HFAS
16:30-18:00 AHFE 11: MADISON SQUARE	<p>Late economic socialization: Regional dimension Ekaterina Zabelina, Yulia Chestyunina, Ekaterina Vedeneeva, Irina Trushina, Svetlana Kurnosova, Russia</p> <p>Functional clothing design for the elderly Yixin Fan, Xiaoping Hu, China</p> <p>Factors affecting organization's impression in hiring persons with disability in the manufacturing industry Felisa Carmella Dizon, Justine Ann Esguerra, Joseph Angelo San Gabriel, Ramon Gabriel Gomez, Carlos Ignacio P. Lugay, Philippines</p> <p>Measuring and testing elderly people's understanding of internet products APP interface design with event-related potentials Jian-ping Yang, Lixia Hua, China</p> <p>Digitalization in public care – consequences on workflow and attitudes among care givers and older adults Marie Sjölander, Ann Sofie Mårtensson, Sweden</p> <p>Design of painting workstation for disabled people Mohsen Zare, Antoine Varret, Nicolas Bert, Thierry Rouxel, Hugues Baume, France</p>	
147	Design and Social Engagement Co-Chairs: Maria Luísa Costa and Joana Perry da Câmara de Carvalho Saes, Portugal	HDCS
16:30-18:00 AHFE 12: TURTLE BAY	<p>Radial visualization model in healthcare: A survey Rute Bastardo, Mariana Castro, Luís Filipe Da Silva Ramos, João Pavão, Portugal</p> <p>Design, information, and accessibility: News in pandemic times Maria Luísa Costa, Bruno Paix, Portugal</p> <p>"AlimentáRIO" - Holder for the supplementary feeding of wild birds Fernando Miguel Marques, Portugal</p> <p>The design process, from individual thinking to collective social Sílvia Rala, Ana Paula Gaspar, Portugal</p> <p>Design in a context of social equity: therapy rooms in schools Joana Saes, Augusto Deodato Guerreiro, Portugal</p> <p>The digital children's book – types of media and interactivity Elisabete Rolo, Agatha Kretli Mascarenhas, Portugal</p>	

148	Designing Future Service Business: Digital – Sustainable - Resilient I Co-Chairs: Walter Ganz and Jens Neuhüttler, Germany	HSSE
16:30-18:00 AHFE 13: MADISON 1	<p>Roles and competences of data science projects Claudia Dukino, Damian Kutzias, Maïke Link, Germany</p> <p>Implementation of AI Technologies in manufacturing - success factors and challenges Janika Kutz, Jens Neuhüttler, Jan Spilski, Thomas Lachmann, Germany</p> <p>Holistic customer experience in smart city service systems – a conceptual model Michel Muschkiet, Tobias Wulfert, Germany</p> <p>Dissemination of smart product-service systems in the corporate world Christian Schiller, Michaela Friedrich, Simon Bucharth, Germany</p> <p>Towards the role of smart services as well as AI in building and enhancing entrepreneurial resilience in small and medium-sized service companies Alexander Gorovoj, Christian Schiller, Michaela Friedrich, Abdul Rahman Abdel Razek, Germany</p> <p>Development of new sustainable services Thomas Meiren, Christian Schiller, Germany</p>	
149	Exploring Implications and Disease Processes through Artificial Intelligence Co-Chairs: Daniel Cassenti and David Ricardo Castillo Salazar, USA/ Ecuador	AISC
16:30-18:00 AHFE 14: MADISON 2	<p>Artificial vision system to detect the mood of an Alzheimer's patient David Ricardo Castillo Salazar, Laura Lanzarini, Héctor Gómez Alvarado, José Varela-Aldás, Ecuador/Argentina</p> <p>Analysis of citizen's sentiment towards Philippine administration's intervention against COVID-19 Matthew John Sino Cruz, Marlene De Leon, Philippines</p> <p>The effect of varying levels of automation during initial triage of intrusion detection Daniel Cassenti, Aayushi Roy, Thom Hawkins, Robert Thomson, USA</p> <p>Generating a multimodal dataset using a feature extraction toolkit for wearable and machine learning: A pilot study Edwin Marte Zorilla, Idalis Villanueva, Jenefer Husman, Matthew Graham, USA</p> <p>Hepatitis predictive analysis model through deep learning using neural networks based on patient history Jorge Pizarro, Byron Vásquez, Willan Steven Mendieta Molina, Remigio Hurtado, Ecuador</p> <p>An analysis model for machine learning using support vector machine for the prediction of diabetic retinopathy Remigio Hurtado, Janneth Matute, Juan Boni, Ecuador</p>	
150	Human Factors for Textile and Society Co-Chairs: Gianni Montagna and Carla Morais, Portugal	HFATE
16:30-18:00 AHFE 15: MADISON 3	<p>Offloading performance of insole materials during walking for diabetic patients Liyang Zhang, Kit Lun Yick, Joanne Yip, Sun Pui Ng, China</p> <p>The effect of anti-itch fiber on the quality of sleeping Chiyomi Mizutani, Ryoji Hirota, Kanji Kajiwara, Japan</p> <p>Making art through textile Isabel Bieger, Portugal</p> <p>Thermal comfort of buildings and their occupants - Dialogue between nature, textiles and architecture Marlene Couceiro, Cristina Carvalho, Portugal</p> <p>Assessment of the mechanical behaviour of the maritime signaling systems based on textiles using descriptive statistics Carmen Mihai, Alexandra Gabriela Ene, Mihaela Jomir, Romania</p> <p>Lighting applied to textile industries to increase the welfare of personnel and business productivity Hernan Espejo, Lloyd Morris, Carlos Cachimuel, Juan Segura, Ecuador</p>	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">8:00-9:30 AHFE 1: CHELSEA</p>	<p>151 Cognitive Neuroscience for Design Co-Chairs: Kazutaka Ueda and Koji Koizumi, Japan</p> <p>Cognitive neuroscience for design Kazutaka Ueda, Japan</p> <p>Modelling emotions of aha moment in category shifting Xiaoxiang Wu, Kazutaka Ueda, Hideyoshi Yanagisawa, Japan</p> <p>Exploring the relationship between creative thinking processes and neural mechanisms in product engineering design Koji Koizumi, Fukashi Mikami, Kazutaka Ueda, Masayuki Nakao, Japan</p> <p>Development of tourism resources utilizing healing effects Atsushi Ito, Yuko Hiramatsu, Kazutaka Ueda, Yasunari Harada, Haruka Nakayama, Madoka Hasegawa, Miwa Morishita, Mie Sato, Akira Sasaki, Rochaporn Chansawang, Japan</p> <p>A survey of forest bathing using EEG measurement for new tourism after COVID-19 Yuko Hiramatsu, Atsushi Ito, Akira Sasaki, Rochaporn Chansawang, Japan</p> <p>Emotional and physiological responses to the roll motion effect in 4D movies Dawoon Jeong, Sung H. Han, Kimin Kwon, Wan Sun Shin, South Korea</p>	<p>APD</p>
	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">8:00-9:30 AHFE 2: UNION SQUARE</p>	<p>152 Cognitive Engineering II Co-Chairs: Adrian Curtin and Siamak Aram, USA</p> <p>Neuroergonomics research: Recent progress and new directions Hasan Ayaz, USA</p> <p>Neuromarketing as a tool for environmental conditioning and sustainable consumption Nikki Leeuwis, Maryam Alimardani, Tom van Bommel, Netherlands</p> <p>fNIRS an emerging technology for design: Advantages and disadvantages Bernardo Providência, Iara Margolis, Portugal</p> <p>System immersion of a driving simulator affects the oscillatory brain activity Nikol Figalová, Jürgen Pichen, Lewis L. Chuang, Martin Baumann, Olga Pollatos, Germany</p> <p>Machine learning-based gaming behavior prediction platform Denis Kornev, Roozbeh Sadeghian, Stanley Nwoji, Qinghua He, Amir Gandjbakhche, Siamak Aram, USA</p> <p>Natural language processing to assess communication dynamics between cooperating dyads during video gameplay Jan Watson, Adrian Curtin, Sukethram Sivakumar, Yigit Topoglu, Nicholas DeFilippis, Jintao Zhang, Rajneesh Suri, Hasan Ayaz, USA</p> <p>Exploring the link between emotional arousal and player skill in video gaming using electrodermal activity Yigit Topoglu, Jan Watson, Adrian Curtin, Nicholas DeFilippis, Jintao Zhang, Rajneesh Suri, Hasan Ayaz, USA</p> <p>Does eSports influence veterans and non-veterans differently? Jintao Zhang, Hongjun Ye, Adrian Curtin, Jan Watson, Yigit Topoglu, Hasan Ayaz, Rajneesh Suri, USA</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">8:00-9:30 AHFE 3: SUGAR HILL</p>		<p>153 Automobile and Road Design Co-Chairs: Paulo Noriega and Francisco Rebelo, Portugal</p> <p>Application research of virtual reality as a tool for design Yuanbo Sun, Huayu Zhang, Shaoshuai Huang, Xinyi Chen, Zhiyuan He, Yifan Li, Yuhong Wei, Jiawei Tang, Yining Wang, China</p> <p>Apology strategies to reduce electric vehicle user frustration Yuhan Li, Danhua Zhao, China</p> <p>Effects of window width and pedestrian outside traffic on the mental strain of a person staying in the room Karin Ueda, Keita Kado, Yohsuke Yoshioka, Japan</p> <p>Effect of the turning angle of a curved passage on human sense of direction Naoki Takahashi, Keita Kado, Yohsuke Yoshioka, Japan</p> <p>Influence of offset and initial position of storefronts on the perception of the street center axis Mihori Toki, Yohsuke Yoshioka, Japan</p>

154	Applications in Design, Human–Machine Interaction, Health and Artificial Intelligence Co-Chairs: Duan Wu and Fang Bin Guo, China/UK	ICEEP
8:00-9:30 AHFE 4: SUTTON PLACE	<p>Optimization of the emergency evacuation sign's color cognition for users with color vision deficiency Duan Wu, Peng Gao, Ying Zhang, China</p> <p>The relationship between simplified Chinese character height and cognition research in signage design Duan Wu, Peng Gao, Dongying Hu, Ran Xu, Yue Qi, Yumeng Zhang, China</p> <p>Towards an ergonomic interface in ship bridges: Identification of the design criteria Fang Bin Guo, Bingyu Wu, Matthew Wah, Zaili Yang, Eddie Blanco-Davis, Abdul Khaliq, Alan Bury, UK</p> <p>Bricoleurs: Resilience in improvised work in a publishing house Cesar Guevara, Raquel Lara Guevara, Diego Mauricio Bonilla Jurado, Ecuador</p> <p>Reduction in work hours may minimize the psychiatric distress and increase the work production and human reliability Ellie Abdi, USA</p>	
155	Risk Assessments, Disaster Response and Safety Management Co-Chairs: Pedro Arezes and Hiroshi Ujita, Portugal/Japan	SMHF
8:00-9:30 AHFE 5: MURRAY HILL	<p>Ergonomics workplace assessment: Differences between on-site and remote ergonomic evaluations under COVID-19 conditions Laura Maria Zambrano Rojas, Juan Diego Marquez Posso, Iván Andres Rivera Sánchez, Luis Andrés Saavedra, Oscar Bernal, Colombia</p> <p>How commercial airlines can mitigate effects of COVID-19 pandemic-induced job insecurity on their pilots' flying performance Sebastian Sieberichs, Germany</p> <p>Human performance improvement activities for risk reduction Hiroshi Ujita, Japan</p> <p>Development needs for risk assessment – A case study of five Finnish companies Maria Lindholm, Minna Rantala, Sari Tappura, Finland</p> <p>Criteria for successful occupational health and safety risk assessment: A systematic review Minna Rantala, Maria Lindholm, Sari Tappura, Jouni Kivistö Rahnasto, Finland</p> <p>Promoting occupational safety, health, and well-being in SME manufacturing companies Susanna Mattila, Sari Tappura, Elli Karttunen, Finland</p> <p>RISGEST app: From risk and site assessment to safety improvement Francisco J. Forteza, Jose M. Carretero-Gomez, Spain</p> <p>Safety failures in public management and implication for policy design: Case of the Port of Beirut Blast Michel Soto Chalhoub, Lebanon</p>	
156	Social & Occupational Ergonomics I Co-Chairs: Henrijs Kalkis and Zenija Roja, Latvia	SOE
8:00-9:30 AHFE 6: BOWERY	<p>Volunteering at the Foggara work in Touat region: A study in social ergonomics Mohamed Mokdad, Bouhafis Mebarki, Mourad Semmani, Shaikha Aljunaidi, Bahrain</p> <p>The ergonomics edge for small enterprises – Case studies from the State of Telangana, India Ratna Devarapalli, Vijaya Lakshmi Velivelli, India</p> <p>Thermal comfort prediction of aged industrial workers based on occupants' basal metabolic rate Alice Caporale, Francesco Gabriele Galizia, Lucia Botti, Cristina Mora, Italy</p> <p>Factors affecting perceived work performance among work-from-home Filipino workforce: An integration of the job demands-resources theory Yoshiki Kurata, Xyza Nicole Bandoquillo, Sophia Marie Hernandez, Ruth Zyrene Monge, Karlos Francis Dominique Tomas, Philippines</p> <p>Millenials: Profiling the South African quantity surveyors of the future Danie Hoffman, Elzane van Eck, South Africa</p> <p>RULA and TRIZ methods for ergonomic analysis in the redesign of artisanal wine bottle filling workstation Lidilia Cruz-Rivero, Alejandro Del Angel-Dominguez, Maria Leonor Mendez-Hernandez, Ilse Alejandra Estevez-Gutierrez, Carlos Eusebio Mar-Orozco, Mexico</p> <p>Occupational health care services for informal workers. From public policy to real practice Luis Carlos Betancourt Sanchez, Vladimir Cuenca Cuellar, Colombia</p> <p>Racial dynamics at an independent South African educational institution Juliet Perumal, Andrea Dawson, South Africa</p>	

157	Usability and User Experience Applications V Co-Chairs: Xinyue Gong and Mariam Alshahrani, China/Saudi Arabia	UUE
8:00-9:30 AHFE 7: BRYANT PARK	<p>How we design and implement an automated dispensing cabinet to improve the drug delivery system in an intensive care unit? Eric Kin-lap Lee, Pei-yi Lin, Kuo-Wei Su, Taiwan</p> <p>Definition of tactile interactions for a multi-criteria selection in learning geometry application Robin Vivian, David Bertolo, France</p> <p>Smartphone application designed to support the visually impaired people and enhance the user experience of entertaining events in Saudi Arabia Saad Almesalm, Mariam Alshahrani, Raneem Aldajany, Faisal Almahmoud, Saudi Arabia</p> <p>Product design for children's life education from the perspective of social control theory Miao Liu, Hongzhao Qi, China</p> <p>Multi-scenario design of D enterprise's agent driving products based on QFD Huai Cao, Xinyue Gong, Kaixuan He, China</p> <p>Is less really more? A user study on visual in-vehicle information systems in automated vehicles from a user experience and usability perspective Kristina Stojmenova, Grega Jakus, Sašo Tomažič, Jaka Sodnik, Slovenia</p> <p>In times of pandemic - How Generation XYZ looks at digital banking Luis Filipe Rodrigues, Helena Rodrigues, Abilio Oliveira, Portugal</p> <p>Gamification design of traditional Chinese culture applications based on FAHP Dandan Li, China</p>	
158	COVID-19 and Data-Driven Business Alignment Co-Chairs: Marina Weck and Marta Urbane, Finland/Latvia	HFBMS
8:00-9:30 AHFE 8: COLUMBUS CIRCLE	<p>Data driven sustainable business strategy Markus Sihvonen, Marina Weck, Finland</p> <p>The future of the employee's right to disconnect in the European Union and Latvia Marta Urbane, Latvia</p> <p>Economic impact of COVID-19 on real estate prices in Slovakia Andrej Adamuscin, Miroslav Panik, Julius Golej, Slovakia</p> <p>The impact of COVID-19 on students. A multi-correspondence analysis Jorge Guadalupe-Lanas, Jorge Cruz-Cárdenas, Hugo Arias-Flores, Mireya Zapata, Ecuador</p> <p>Analysis of the variables that affect China's presence in international news in the context of Coronavirus Hanns De la Fuente-Mella, Claudio Elórtegui Gómez, Ignacio Milies Valdivia, Chile</p> <p>Effects of return to work after the COVID-19 pandemic Hugo Arias-Flores, Doris Pérez-Vega, Jorge Guadalupe-Lanas, Ecuador</p>	
159	Advanced Learning Techniques in Education I Co-Chairs: Noel Alton and Siyi Huang, USA/China	TELS
8:00-9:30 AHFE 9: FLATIRON	<p>WebQuest as a factor of teaching teamwork Tatiana Shaposhnikova, Alexander Gerashchenko, Tatiana Shabanova, Victoria Vyazankova, Marina Romanova, Russia</p> <p>Optimization of online vocabulary learning platform based on Kano Model Huai Cao, Kaixuan He, Xiuling Wang, Xinyue Gong, China</p> <p>Integration of immersive learning simulation and augmented reality for healthcare training: Towards a transmedia solution to address the opioid crisis Anya Andrews, Doug Nelson, USA</p> <p>Design of guidelines for workshops developed through virtual and augmented reality Stalyn Avila Herrera, Diego López, Ximena Morales Urrutia, Ecuador</p> <p>Understanding the needs of development for English learners in a college setting Noel Alton, Dustin Grote, Melina Alexander, USA</p> <p>Exploring the new space of education in China in the 21st century based on the heuristic penetration teaching method Siyi Huang, Jiawei Wang, Lei Mao, Juan Ren, Lei Zhang, China</p> <p>Promoting indigenous cultural awareness through participatory game design with children Yuhan Liu, Baosheng Wang, China</p> <p>Pedagogical model based on Edgar Morín's complex thinking in school management Cesar Guevara, Carlos Manuel Núñez Michuy, Diego Mauricio Bonilla Jurado, Verónica Teresa Veloz Segura, Ecuador</p>	

<p>160</p>	<p>Human Factors in Software and Systems Engineering III Co-Chairs: Andres Viscaino-Quito and Faith Dowelani, Ecuador/ South Africa</p>	<p>HFSSE</p>
<p>8:00-9:30 AHFE 10: GRAMERCY</p>	<p>Evaluating Manet technology in optimizing IOT-based multiple WBSN model in soccer players health study Mustafa Hamid Hassan, Salama A. Mostafa Alabdullah, Aida Mustapha, Saraswathy Shamini Gunasekaran, Mohammed Ahmed Jubair, Nayef A. M. Alduais, Malaysia</p> <p>Determinants for Building information modeling adoption in facilities management in South Africa: An application of the UTAUT model Faith Dowelani, South Africa</p> <p>Development of a data collection system in the cloud as a storage method Andres Viscaino-Quito, Luis Serpa-Andrade, Ecuador</p> <p>A software to measure quantitative electroencephalogram during the performance of a psychological cognitive task using the OpenBCI hardware Verónica Padro, Mateo Romero, Johanna Pozo Neira, Omar Alvarado, Ecuador</p> <p>Methods for automatic glaucoma detection and feature extraction by different techniques at the pre-processing stage in fundus images Eduardo Pinos-Vélez, Ma. Isabel Cordero-Mendieta, Roberto Coronel-Berrezueta, Ecuador</p> <p>Three-dimensional construction of the corneal geometry from tomographic images and biomechanical parameters of the cornea Eduardo Pinos-Vélez, Roberto Coronel-Berrezueta, María Isabel Cordero, Ecuador</p>	
<p>161</p>	<p>Simulation and Occupational Safety Co-Chairs: Brianna Eiter and Tim Orr, USA</p>	<p>HFSIM</p>
<p>8:00-9:30 AHFE 11: MADISON SQUARE</p>	<p>Barriers to health hazard recognition: A retrospective examination of simulation research in the mining industry Brianna Eiter, Mahiyar Nasarwanji, USA</p> <p>Development of an immersive simulation for first responder squads Timothy Orr, Jennica Bellanca, Brendan Macdonald, William Helfrich, Jason Navoyski, Brendan Demich, USA</p> <p>Mast climbing work platform visual inspection tool Bryan Wimer, Brianna Eiter, Timothy Orr, USA</p> <p>Ergonomics, digital twins and time measurements for optimal workplace design Natasja Vujica-Herzog, Borut Buchmeister, Matic Breznik, Slovenia</p> <p>Personalized and semi-autonomous trauma training system for optimized learning Tiffany Jastrzembski, Jack Harris, Michael Krusmark, USA</p> <p>Toward a systems framework coupling safety culture, risk perception, and hazard recognition for the mining industry Leonard Brown, Ngan Pham, Jefferey Burgess, USA</p>	
<p>162</p>	<p>Human Factors and Wearable Technologies III Co-Chairs: Daniel Blais and Nasrin Bayat, USA/Canada</p>	<p>HFWT</p>
<p>8:00-9:30 AHFE 12: TURTLE BAY</p>	<p>Human gait recognition using bag of words feature-representation method Nasrin Bayat, Elham Rastegari, Qifeng Li, USA</p> <p>Opportunities for wearable technology to increase the safety of rail sector workers Adam Freed, Heather Colbert, Daniel Blais, Canada</p> <p>Mobile physiologic laboratory (mobPhysioLabTM) infield monitoring of soldiers maintaining employability, human performance, and welfare Andreas Werner, Germany</p> <p>Comparative evaluation of cervical exoskeletons using IMUs Yonnel Giovanelli, Camélia Mahdi, Frédéric Puel, Arnaud Gouelle, William Bertucci, France</p> <p>Physical risk evaluation of industrial works in virtual reality environment Suman Kalyan Sardar, Seulchan Lee, South Korea</p>	

Thursday, July 28

163	Human Reliability Analysis Co-Chairs: Jing Wen and Roger Lew, Canada/USA	HERRP
8:00-9:30 AHFE 13: MADISON 1	<p>Analysis of assembly errors using systems thinking approach: Application of the HFACS framework Yaniel Torres, Sylvie Nadeau, Kurt Landau, Canada</p> <p>Procedure progression similarity, an aspect of dependence between human failure events Yochan Kim, Jaewhan Kim, Jinkyun Park, South Korea</p> <p>Characterization of recovery human action mechanisms in nuclear power plants Yunyeong Heo, Jeeyea Ahn, Seung Jun Lee, Ronald Boring, Jooyoung Park, South Korea/USA</p> <p>Dynamic approach to dependency analysis in human reliability analysis: Application in a steam generator tube rupture scenario Jeeyea Ahn, Ronald Boring, Jooyoung Park, USA</p> <p>The formation mechanism of team decision-making errors in digital nuclear power plants Jing Wen, Pengcheng Li, China</p> <p>Implications of human reliability analysis for human readiness levels Ronald Boring, USA</p> <p>Promoting team-oriented behavior based on regulatory focus theory Keitaro Ichikawa, Daisuke Karikawa, Makoto Takahashi, Tsubasa Otsuki, Japan</p>	
164	Human Factors in Energy II Chair: Ron Boring, USA	ENERGY
8:00-9:30 AHFE 14: MADISON 2	<p>Understanding procedure development in nuclear domain with practice theory Jari Laarni, Hanna Koskinen, Marja Liinasuo, Tuisku-Tuuli Salonen, Satu Pakarinen, Kristian Lukander, Tomi Passi, Finland</p> <p>Using computer vision to reduce human errors of operating on the wrong control valves in nuclear power plants Sophie Kochanek, Jinding Xing, Alper Yilmaz, George Edward Gibson, Pingbo Tang, USA</p> <p>Foreseeing the potential of virtual reality in nuclear power plant field operator training Hanna Koskinen, Tuisku-tuuli Salonen, Jari Laarni, Marja Liinasuo, Satu Pakarinen, Kristian Lukander, Tomi Passi, Finland</p> <p>Operator insights and usability evaluation of machine learning assistance for power grid contingency analysis John Wenskovitch, Alexander Anderson, Slaven Kincic, Corey Fallon, Danielle Ciesielski, Jessica Baweja, Molly C. Mersinger, Brett Jefferson, USA</p> <p>Addressing function allocation for the digital transformation of existing nuclear power plants Casey Kovesdi, USA</p> <p>Humans with/as big data in nuclear energy Ronald Boring, Torrey Mortenson, Thomas Ulrich, Roger Lew, USA</p> <p>A prospective design method for nuclear power: The evaluation, requirements, and goals outline for nuclear (ERGON) method Torrey Mortenson, Ronald Boring, Roger Lew, Thomas Ulrich, USA</p>	
165	Designing the Inn(t)erface Chair: Emilia Duarte, Portugal	HDCS
8:00-9:30 AHFE 15: MADISON 3	<p>Wearable design for epilepsy patients: Human-centered design and speculative design for a positive user experience Davide M. Parrilli, Daniela Moreira, Patricia Estanqueiro, Rodrigo Hernández-Ramírez, Hande Ayanoglu, Portugal</p> <p>The impact of mascots as emotional design strategy in crowdfunding campaigns' effectiveness Daniela Malcata, Amadeu Martins, Emilia Duarte, Portugal</p> <p>Strategic design for "smellscapes": Do smells get into our decisions? Amadeu Martins, Ana Nunes, Andreia Lima, Carlos Ribeiro, Carolina Pedro, Jéssica Oliveira, Monalisa Vieira, Patrícia Monteiro, Portugal</p> <p>Exploring posters' motivational influences to hand washing: The case for Gray's Reinforcement Sensitivity Theory (RST) Catarina Santos, Emilia Duarte, Amadeu Martins, Portugal</p> <p>Internet of Senses (IoS) and Internet of Sensory Health (IoSH): A new technology epiphany Davide Antonio Gambera, Emilia Duarte, Dina Riccò, Portugal</p> <p>Anticipating the impact of virtual reality for learning the design fundamentals: Students' perceptions and perspectives Ana Neves, Hande Ayanoglu, Eduardo Goncalves, Diana Dias, Emilia Duarte, Portugal</p>	
REFRESHMENTS: 9:30 - 10:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)		

166	Designing Future Service Business: Digital – Sustainable - Resilient II Co-Chairs: Walter Ganz and Jens Neuhüttler, Germany	HSSE
10:00-11:30 AHFE 1: CHELSEA	<p>Essential areas of action for the smartification of traditional products and services considering the capabilities of SMEs Sandra Frings, Holger Kett, Jürgen Falkner, Germany</p> <p>Processes in data science projects Damian Kutzias, Claudia Dukino, Germany</p> <p>Towards a maturity model to measure data consistency in the manufacturing industry Philipp Christel, Maximilian Feike, Germany</p> <p>Towards a concept of “governance as a smart-service” in service-oriented value-creation-systems Anne Sophie Tombeil, Rainer Nägele, Germany</p> <p>An approach for developing and assessing sustainable business models Lena Ahner, Jens Neuhüttler, Nicole Gladilov, Germany</p> <p>Implementing data-based services: A socio-technical model Adrian Campos, Toni Waeﬂer, Anina Havelka, Patricia Deflorin, Switzerland</p>	
167	Human Factors in Artificial Intelligence and Social Computing Co-Chairs: Stephen Dorton and Dimitrios Ziakkas, USA	AISC
10:00-11:30 AHFE 2: UNION SQUARE	<p>Supradyadic trust in artificial intelligence Stephen Dorton, USA</p> <p>Artificial intelligence in aviation decision making process. The transition from extended minimum crew operations to single pilot operations (SiPO) Dimitrios Ziakkas, Anastasios Plioutsias, Konstantinos Pechlivanis, USA</p> <p>I am what i am - Roles for artificial intelligence from the users’ perspective Ralf Philippsen, Philipp Brauner, Hannah Biermann, Martina Zieﬂe, Germany</p> <p>Faulty signal restoration algorithm in the emergency situation using deep learning methods Younhee Choi, Jonghyun Kim, South Korea</p> <p>Toward understanding the use of centralized exchanges for decentralized cryptocurrency Zhixuan Zhou, Bohui Shen, USA</p> <p>Artificial intelligence in B2B sales: Impact on the sales process Heiko Fischer, Sven Seidenstricker, Thomas Berger, Timo Holopainen, Germany</p> <p>Automatic labeling of human actions by skeleton clustering and fuzzy similarity Chao-Lung Yang, Shang-Che Hsu, Si-hao Wang, Jing-feng Nian, Taiwan</p> <p>Critical success factors for the diffusion of artificial intelligence in the Nigerian construction industry Patience Tunji-Olayeni, Clinton Aigbavboa, Ayodeji Oke, Nigeria</p>	
168	Cognitive Computing for Healthcare and Wellbeing Co-Chairs: Lucas Paletta and Verena Wagner-Hartl, Austria/Germany	CCIoT
10:00-11:30 AHFE 3: SUGAR HILL	<p>VR4care: Gender-sensitive virtual reality technologies and semantic content categories for activation in nursing homes Lucas Paletta, Sybille Reidl, Sarah Beranek, Robert Hartmann, Martin Sighart, Sebastian Mayer, Patricia Papic, Amir Dini, Martin Pszeida, Sandra Schüssler, Alfred Häußl, Beatrix Koch, Hermine Fürli, Michael Schneeberger, Melanie Lenger, Silvia Russegger, Austria</p> <p>Estimation of change in affective state using eye tracking features from virtual reality technologies Martin Pszeida, Amir Dini, Michael Schneeberger, Melanie Lenger, Lucas Paletta, Silvia Russegger, Sybille Reidl, Sarah Beranek, Sandra Schuessler, Alfred Haeußl, Robert Hartmann, Martin Sighart, Sebastian Mayer, Patricia Papic, Beatrix Koch, Hermine Fürli, Austria</p> <p>Usability evaluation after a 6-month tablet-based dementia training program by people with Alzheimer’s disease, relatives, and dementia trainers Julia Zuschnegg, Sandra Schuessler, Lucas Paletta, Silvia Russegger, Maria Fellner, Karin Ploder, Bernhard Strobl, Maja Sekulic, Marisa Koini, Maria M. Hofmarcher Holzhaacker, Regina Roller Wirnsberger, Austria</p> <p>Accurate stress detection from novel real-time electrodermal activity signals and multi-task learning models Stefan De Vries, Reon Smits, Michalina Tataj, Mieke Ronckers, Mayra Van Der Pol, Fransje Van Oost, Esmee Adam, Hanneke Smaling, Erwin Meinders, Netherlands</p> <p>The influence of task complexity on acceptance and trust in human-robot interaction - gender and age differences Verena Wagner-Hartl, Ramona Schmid, Katharina Gleichauf, Germany</p> <p>The Life2Well project: Studying environment, physiology and EEG Duc Minh Anh Nguyen, Thien Minh Tuan Nguyen, Kenneth Y. T. Lim, Singapore</p>	

Thursday, July 28

169 10:00-11:30 AHFE 4: SUTTON PLACE	Ergonomics in Product Design Co-Chairs: Filipa Carvalho and Elisangela Vilar, Portugal	ED
	<p>3D digital head-shaped platform construction for head acupoint massage product design Zhelin Li, Yiteng Sun, Yuguang Shao, Lijun Jiang, Jingjing Wang, Xianghong Deng, China</p> <p>An analysis on the effects of different types of keyboards on users' productivity and hand muscle strain Carlos Ignacio P. Lugay, Yoshiki B. Kurata, Joseph Ramon M. Leofando, Janfil Mari M. Pamisa, Jeryl S. Salas, Philippines</p> <p>Development of a new foot device for hallux valgus correction: Preliminary results Marcos Gadoy, Filipa Carvalho, Portugal</p> <p>Design of toddler care equipment based on facial emotion recognition technology Li Guanwei, Jing Luo, China</p> <p>Soft tissue thickness estimation for head, face, and neck from CT data for product design purposes Wenxiu Yang, Ren-ke He, Tingshu Chen, Wang Haining, Richard Goossens, Toon Huysmans, China/Netherlands</p>	
170 10:00-11:30 AHFE 5: MURRAY HILL	Healthcare Issues and Risk Management Co-Chairs: Nancy Lightner and Nick Woodier, USA/UK	EHMD
	<p>The hospitalization experience design using gamification applied to a pediatric 3D scanner for compound fractures Sara Viviani, Rocco Furferi, Alessandra Rinaldi, Italy</p> <p>Design-for-user acceptance of IOT home use medical device: A design process for IOT home use medical device Apiwat Thongprasert, Arisara Jiamsanguanwong, Uthai Tanlama, Thailand</p> <p>Effective remote human factors support during COVID-19: Challenges and lessons learned Anthony Soung Yee, Carleene Bañez, Stefano Gelmi, Catherine Gaulton, Trevor Hall, Canada</p> <p>Improving healthcare-system safety through near misses: Learning from transport industries Nick Woodier, Charlotte Burnett, Paul Sampson, Iain Moppett, UK</p> <p>Ageing and medication adherence: An overview of key challenges, technologies, and opportunities Bahar Khayamian Esfahani, Daniel Daniel (Gnaji), Emily Louise Mann, Jelena Milisavljevic-Syed, UK</p> <p>A design of emergency services for pre-hospital cardiac arrest Jinyu Cai, Jing Luo, Ruling Yang, China</p> <p>Human factors analysis of goal-directed perfusion in cardiac surgery Lauren Kennedy-Metz, Roger Dias, Rithy Srey, Geoffrey Rance, Kay Leissner, Suzana Zorca, Alexander Shapeton, Marco Zenati, USA</p> <p>Real world constraints for actualizing human factors findings for healthcare system interoperability Nancy Lightner, USA</p>	
171 10:00-11:30 AHFE 6: BOWERY	Safety and Digitization in Maritime Operations Co-Chairs: Gesa Praetorius and Charlott Sellberg, Sweden	MAR
	<p>An integrated approach for more success in maritime investigation matters Marcus Behrendt, Daniela Johannmeyer, Bertram Wortelen, Marcel Saager, Jacqueline Klimmek, Alexander Steinmetz, Germany</p> <p>The contribution of ship bridge design to maritime accidents Brit-Eli Danielsen, Norway</p> <p>Exploring organizational safety vulnerabilities on naval ships – a comparative quantitative analysis Trond Kongsvik, Asbjørn Lein Aalberg, Norway</p> <p>Mental workload assessment in virtual reality environment based ship navigating operations Yu Zhang, Chongbin Li, Quan Ding, Jie Chen, China</p> <p>Assisted text messaging system for maritime emergency communications Carlo Andreotti, Pierpaolo Baglietto, Massimo Maresca, Stefano Strada, Italy</p>	

<p>172</p>	<p>Physical Workload Assessment and Biomechanical Analysis Co-Chairs: Tim Steinebach and Khaled Hafez, Germany/Saudi Arabia</p>	<p>PEHF</p>
<p>10:00-11:30 AHFE 7: BRYANT PARK</p>	<p>The influence of lifting horizontal distance measurement error on NIOSH lifting equation assessment outcomes Khaled Hafez, Saudi Arabia</p> <p>Ergonomic parameters considering physical workload for optimization models in manual order picking Tim Steinebach, Jurij Wakula, Heiko Diefenbach, Christoph Glock, Eric Grosse, Germany</p> <p>Evaluating the physiological effects of inclined carrying: Preliminary results of EPIC study Duha Ali, Mark C. Schall, Jr., USA</p> <p>Plantar soft tissue stiffness automatic estimation in ultrasound imaging using deep learning Yori Pusparani, Ben-Yi Liao, Yih-Kuen Jan, Hsu-Tang Cheng, Peter Ardhiyanto, Fityanul Akhyar, Chi-Wen Lung, Chih-Yang Lin, Taiwan</p> <p>The physical load of the human body during motion with BP neural network Biyun Zhou, Xue Lihao, Xiaopeng Liu, Qin Yang, Liangsheng Ma, Li Ding, China</p> <p>Modeling of changes in lumbar joint stiffness by pelvic tightening based on physique and pelvic alignment Michihiro Yoshida, Tanaka Takayuki, Yoshio Tsuchiya, Japan</p>	
<p>173</p>	<p>Demographic Characteristics and Driver Performance Chair: Katie Parnell, UK</p>	<p>RR</p>
<p>10:00-11:30 AHFE 8: COLUMBUS CIRCLE</p>	<p>How does age impact in-vehicle touchscreen performance? Lee Skrypchuk, Karl Proctor, Daniel Clifton, UK</p> <p>Can driver behavior be traced to gender role, sex and age Ilit Oppenheim, Yisrael Parmet, Tal Oron-Gilad, Israel</p> <p>SHRP2 naturalistic data analysis of older drivers' gap-acceptance behavior Sneha Srinivasan Rammanoharan, Jose Alguindigue, Apurva Narayan, Siby Samuel, Canada</p> <p>Micro scenarios – a theory-based intervention to alleviate simulator sickness for older drivers in driving simulators Chongren Sun, Siby Samuel, Canada</p> <p>Age differences in the situation awareness and takeover performance in a semi-autonomous vehicle simulator Yovela Murzello, Shi Cao, Siby Samuel, Canada</p> <p>Biphasic effects of alcohol in simulated monotonous driving Hugo Nguma, Catherine Berthelon, Edith Galy, Morgane Evin, Aurelie Banet, France</p>	
<p>174</p>	<p>Ergonomics in Urban Planning III Co-Chairs: Dennisse Alvarez Macias and Diana Salinas, Ecuador</p>	<p>SUPI</p>
<p>10:00-11:30 AHFE 9: FLATIRON</p>	<p>Strategic urban planning of the banks of the Daule River: Case study in Guayas, Ecuador Dennisse Alvarez Macias, Jesús Rafael Hechavarría Hernández, Maria Pin, Ecuador</p> <p>Strategic urban mobility plan: Case study in the central area of Daule city, Ecuador Diana Salinas, Jesús Rafael Hechavarría Hernández, Maria Pin, Ecuador</p> <p>Sustainable urban delta: The inspiration to PRD through the comparative analysis of Netherlands reclamation history Yu Liu, Peter Hasdell, Hong Kong</p> <p>Construction information management: The role of fourth industrial revolution tools Peter Adekunle, Clinton Aigbavboa, Wellington Didibhuku Thwala, Ayodeji Oke, Opeoluwa Akinradewo, South Africa</p> <p>The future of facility management: A case for digital twin Olushola Akinshipe, Clinton Aigbavboa, Chimay Anumba, South Africa</p> <p>Legal factors in the Nigerian construction Industry Benjamen Sunkanmi Adeyemi, Clinton Aigbavboa, Wellington Didibhuku Thwala, South Africa</p> <p>Analysis of the use of houses on the T-plan to shape the plans of community housing complexes with low development intensity Alicja Maciejko, Poland</p>	

Thursday, July 28

175	Usability and User Experience Applications VI Co-Chairs: Rosa Navarrete and Qian Wu, Ecuador/China	UUE
10:00-11:30 AHFE 10: GRAMERCY	<p>Analysis of visual information accessibility design requirements for Phubbers in traffic scenes Qian Wu, Wei Ding, China</p> <p>A framework for data mining of structured semantic markup extracted from educational resources on university websites Lorena Recalde, Rosa Navarrete, Luis Rosero Correa, Ecuador</p> <p>The effect of mobile user interface design on comic reading performance Waricha Henchobdee, Sakol Teeravarunyou, Thailand</p> <p>The effectiveness of group stacks and funnel filter for mobile online shopping application Pattarapong Bhongjan, Sakol Teeravarunyou, Thailand</p> <p>Cognitive prediction model for geophysical prospecting instruments' user interface based on confirmatory factor analysis Xiaoli Chen, Shiyu Chang, China</p> <p>Ergonomic design of human-product interface in healthcare systems: Assurance of risk-free environment with automation for improved performance Pradip Kumar Ray, India</p> <p>A bibliometric and visual analysis of affordance-based-design Yuan Yuchen, Ren-ke He, Chaomin Ma, China</p> <p>Human factors engineering to improve customers services quality using Monte Carlo method Salah Elshourbagy, Egypt</p>	
176	User Interaction and Systems Usability Co-Chairs: Mika Luimula and Hugo Arias-Flores, Finland/Ecuador	SYSI
10:00-11:30 AHFE 11: MADISON SQUARE	<p>Analysis of user interaction on web pages in organizations located on the border between Ecuador and Colombia Hugo Arias-Flores, Freddy Quinde-Sari, Janio Jadán-Guerrero, Mireya Zapata, Ecuador</p> <p>The internet of things as an extension and augmentation of the user Jaroslaw Kowalski, Poland</p> <p>The impact of different interaction methods of virtual objects on mobile AR experience Ying Shu, Wenyu Yang, Xin He, China</p> <p>Interface evaluation method of medical equipment based on aesthetics measures Lele Duan, Xingsong Wang, China</p> <p>Challenges in achieving accessibility on official COVID-19 websites Patricia Acosta-Vargas, Ricardo Plaza Mendizabal, Michelle Abigail Rodriguez, Carlos Freire Vergara, Manuel Calvopina, Nikolaos C. Kyriakidis, Belén Salvador-Acosta, Esteban Ortiz Prado, Ecuador</p> <p>Optimal interaction design of remote operator interfaces: A case study of patrol separation interfaces for corridor robots Xiaoli Chen, Guoyan Wang, Yongheng Lu, Can Yao, Guocheng Hao, China</p>	
177	Applied Human Factors in Society Operations I Co-Chairs: Tero Reunanen and Oksana Kravchenko, Finland/Ukraine	HFBMS
10:00-11:30 AHFE 12: TURTLE BAY	<p>Student satisfaction towards studies - disciplinary, demographic or situation related variable? Tero Reunanen, Vesa Taatila, Finland</p> <p>The impact of social advertising on student adaptation in higher education institutions Oksana Kravchenko, Olena Baldyniuk, Halyna Bondarenko, Yuliia Pidvalna, Tetiana Okolnycha, Ukraine</p> <p>Active learning methods to enhance higher education in business Ana María Vallina-Hernández, Hanns De la Fuente-Mella, Jose Barrera, Hugo Mansilla, Chile</p> <p>Shared work-load and team spirit - Correlations between university students and university personnel Tero Reunanen, Vesa Taatila, Finland</p> <p>The impact of refugees on economic growth in Latin America and the Caribbean Dandan Kowarsch, Jingyu Wang, USA</p> <p>The relationship between national culture and risk-taking among countries: Should researcher rethink competition? John Kuforiji, Yousif Abdelrahim, Saudi Arabia</p>	

<p>178</p>	<p>Maximizing, Measuring and Modifying Human Performance Using Simulation Co-Chairs: Debbie Patton and Glenn Hodges, USA</p>	<p>HFSIM</p>
<p>10:00-11:30 AHFE 13: MADISON 1</p>	<p>Toward understanding development of team resilience during stress exposure training Joan Johnston, Debra Patton, USA</p> <p>Optimizing human capital performance: Influence of simulation Glenn Hodges, Debbie Patton, Samantha Napier, USA</p> <p>Distinguishing between dynamic altitude breathing threats to improve training Kylie Fernandez, Mitchell Tindall, Beth Atkinson, Daniel Logsdon, Emily Anania, USA</p> <p>Toward the development of a realistic, low-cost “gender retrofit kit” for use in combat medicine training Angela M. Alban, Cheryl Coiro, Trisha N. Patel, Jeffrey M. Beaubien, Mark Mazzeo, USA</p> <p>An analysis of squad communication behaviors during a field-training exercise to support tactical decision making Jason Saville, Randall Spain, Joan Johnston, James Lester, USA</p>	
<p>179</p>	<p>Advanced Production Management and Process Control II Co-Chairs: Beata Mrugalska and Benedict Wohlers, Poland/Germany</p>	<p>APMPC</p>
<p>10:00-11:30 AHFE 14: MADISON 2</p>	<p>Dynamic scheduling techniques in cloud manufacturing – an exploration of deep reinforcement learning as a critical opportunity for future research David Chambers, Thorsten Lammers, Kun Yu, Australia</p> <p>Product data quality in e-commerce: Key success factors and challenges Maciej Niemir, Beata Mrugalska, Poland</p> <p>Optical diagnostics of the dispersion composition of fuel-air flare Oksana Isaeva, Marina Boronenko, Yura Boronenko, Russia</p> <p>Measuring the velocity and temperature of particles in a low-temperature plasma flow Oksana Isaeva, Marina Boronenko, Pavel Gulyaev, Russia</p> <p>Implementation of an IoT-based environment to control an industrial process by voice commands using a virtual assistant John Guachun-Arias, Luis Serpa-Andrade, Ecuador</p> <p>Assembly line optimization applying a construction algorithm Jennifer Mayorga, Jorge Buele, Angel Soria, Manuel Ayala-Chauvin, Ecuador</p> <p>Principal component analysis of inhibiting factors to the espousal of lean construction in developing economies Matthew Ikuabe, Clinton Aigbavboa, Douglas Aghimien, Pretty Ramaru, Ayodeji Oke, Opeoluwa Akinradewo, South Africa</p> <p>Process safety in electrolytic green hydrogen production Rodrigo Dominguez, Enrique Calderón, Jorge Bustos, Chile</p>	
<p>180</p>	<p>Human Factors in Virtual Environments and Game Design III Co-Chairs: Nirit Gavish and Amandeep Singh, Israel/Canada</p>	<p>HFGD</p>
<p>10:00-11:30 AHFE 15: MADISON 3</p>	<p>Guided by the hint: How shader effects can influence object selection in virtual reality Philip Schaefer, Andre Vaskevich, Gerrit Meixner, Germany</p> <p>The effect of self-controlling difficulty levels in a virtual environment Nirit Gavish, Ezra Ozery, Ezri Tarazi, Israel</p> <p>Taking a romantic adventure together: Explore the design of virtual travelling for couples in long-distance relationships Sin-Wei Huang, Wei-Chi Chien, Taiwan</p> <p>Design and evaluation: Virtual reality haptic interface to enhance user experience Siyang Zhang, Yun Wang, Youru Wu, Sixuan Nie, Lu Chen, China</p> <p>Mobile application design with augmented reality triggers Cesar Guevara, Carlos Borja, Hugo Arias-Flores, Ecuador</p> <p>Coin game to improve the education of designers in product design Fabiola Cortes Chavez, Ana Paula Diaz Pinal, Elvia Luz Gonzalez Lopez, Alberto Rossa-Sierra, Mariel Garcia-Hernandez, Marcela De Obaldia, Mexico</p> <p>Virtual human centered design: An affordable and accurate tool for motion capture in mixed reality Saverio Serino, Carlotta Fontana, Nicola Cappetti, Rosaria Califano, Alessandro Naddeo, Italy</p> <p>The verification of human-machine interaction design of intelligent connected vehicles based on augmented reality Zhang Heng, Yuanbo Sun, Zhang Boyang, Yanan Che, China</p>	
<p>REFRESHMENTS: 11:30 - 12:00 • ROOM: EMPIRE BALLROOM (LEVEL 2)</p>		

181	Design Communication III: Design Innovation Co-Chairs: Zhuoyue Diao and Huajie Wang, China	HFC
12:00-13:30 AHFE 1: CHELSEA	<p>Promoting elderly residents' quality of life: Design consideration for bathing experiences in the nursing home Yunhe Du, Brian Yu Hin Lee, Kin Wai Michael Siu, Hong Kong</p> <p>A collaborative co-creative design approach to intergenerational integration among communities Jianbin Wu, Kin Wai Michael Siu, Linghao Zhang, China</p> <p>Sustainable development index system: New design method about cultural and creative products Jinwu Xiang, Huajie Wang, Rong Chen, Miao Zhang, China</p> <p>Information analogies between digital communication and communication of design Zhuoyue Diao, China</p> <p>Playful public design by children Kin Wai Michael Siu, Kwok Yin Angelina Lo, Chi Hang Lo, Yi Lin Wong, Hong Kong</p> <p>Portugália publishing house and designer João da Câmara Leme Elisabete Rolo, Rafaela Costa, Portugal</p>	
182	New Perspectives on Human Decision Making and Errors Co-Chairs: Ronald Boring and Jeeyea Ahn, USA/Korea	HERRP
12:00-13:30 AHFE 2: UNION SQUARE	<p>Design of conversation interaction between users and systems to prevent human misunderstanding Toru Nakata, Japan</p> <p>Sustainability of human resources: A heuristic approach Farman Moayed, Kendall Cribelar, Annette Smith, USA</p> <p>How was it possible to do everything right and yet 19 Prescott Fire Department Firefighters died in one fell swoop on June 30, 2013? Fred Schoeffler, Joy A. Collura, USA</p> <p>Evaluating human performance in a complex search-and-retrieve task Shashank Uttrani, Bhavik Kanekar, Aadhar Gupta, Harsh Katakwar, Varun Dutt, India</p> <p>Can vigilance be enhanced by flashing visual stimuli? An EEG study Thibaud De Barnier, Mickael Causse, France</p> <p>Identification of the dependence between local muscle load and the method of predetermined times Pavel Vránek, Michal Šimon, Filip Rybníkář, Ilona Kačerová, Czech Republic</p> <p>Measuring project and team health to support resilient teams with subjective metrics Marisa Bigelow, Lisa Douglas, Michael Smith, USA</p> <p>Adaptation patterns to cope with burn mass casualty incidents Sheuwen Chuang, David D. Woods, Sen-kuang Hou, Taiwan</p>	
183	Explorations in Design Education Chair: George Chow, USA	IPID
12:00-13:30 AHFE 3: SUGAR HILL	<p>Understanding the vertical studio: Experimentation and delivery Adam Feld, USA</p> <p>Adaptation in 3D modeling pedagogy: How COVID-19 upended then improved course outcomes Betsy Barnhart, USA</p> <p>Experimental processes with precious plastics George Chow, USA</p> <p>Studio as a hub not a home Paul Skaggs, USA</p> <p>Designing expressive wearables: a trans-disciplinary, co-curricular, dance-led design collaboration Raja Schaar, Valeri Ifill, USA</p> <p>Enhancing patient engagement: The development of mirror therapy tasks for stroke rehabilitation Yu Hsiu Hung, Yu Ching Lin, Shan Song Yang, Yen Chen Liu, Taiwan</p> <p>Design and tools for the transformation and valorisation of agro-industrial waste for Made in Italy industries Elena Cioffi, Barbara Pizzicato, Italy</p>	

184	Design for Health and Wellbeing Chair: Elga Patrícia Maximiano Ferreira, Portugal	HDCS
12:00-13:30 AHFE 4: SUTTON PLACE	<p>Using co-design methods to develop a patient monitoring system in hospital emergency care to support patient safety Sandra Neves, Vera Oliveira, Maria Guarino, Portugal</p> <p>Cohort study good practices: Design communication and capacitation processes Elga Ferreira, Eliana Penedos-Santiago, Constança Rocha, Daniela Marques, Esteêvo Santos, Sara Dias, Portugal</p> <p>Oughtred's Circles of Proportion 2.0: A proof of concept for hands-on science engagement Renato Bispo, Samuel Gessner, Joana Blanc, Portugal</p> <p>Defining the complex emotional experiences of depression through visual language – color as expressive tool Carla Lobo, Puja Kumar, Luisa Barreto, Portugal</p> <p>Language and visual perception as a communication tool for children with autism spectrum disorders Luisa Barreto, Hugo Gonçalves, Portugal</p> <p>The CBmeter: Designing innovative strategies for early diagnosis of metabolic diseases Maria Guarino, Marlene Lages, Ipek Suluova, Rui Fonseca Pinto, Nuno Lopes, Portugal</p> <p>Participatory design as an approach for public engagement in health policy-making in Portugal Tânia Alves, Sandra Neves, Portugal</p> <p>Health and design at service of a refugee camp in Iraq Lea Camacho, Eliana Penedos-Santiago, Elga Ferreira, Portugal</p>	
185	Re-Balancing the Benefits of Digitalisation: Service Innovation, Empowerment and Regulation Co-Chairs: Christine Leitner and Christoph Glauser, UK/Switzerland	HSSE
12:00-13:30 AHFE 5: MURRAY HILL	<p>Shedding light on the digital vulnerability: Challenges and solutions Kristina Reinsalu, Estonia</p> <p>The soul of a new machine: Promises and pitfalls of artificial intelligence in finance Christian Stiefmueller, UK</p> <p>Fostering actor engagement with human centered service design (HCSD): Lessons learned from the cross domain examples of service dominant architecture Markus Warg, Germany</p> <p>Digital matching for live-in care Mohammad Allagha, Oskar Kruschitz, Katherina Voss, Stefanie Binder, Kevin Truckenthanner, Austria</p> <p>Sustainability-related gamified design science approaches for successful value creation Flora Poecze, A Min Tjoa, Austria</p> <p>An integrated digital healthcare infrastructure for providing healthcare services with PHCs as anchors Shrikant Parikh, India</p> <p>From Alibaba to YouTube: User search for digital democracy topics in Switzerland Christoph Glauser, Uwe Serdült, Switzerland</p>	
186	Innovation During Start-Up and Entrepreneurship Co-Chairs: Matthias Hillner and Florentin Popescu, UK/Netherlands	CIE
12:00-13:30 AHFE 6: BOWERY	<p>Decision support system for SME-managers by aligning individual experience and contemporary digital information Dennis Bakir, Florian Engels, Germany</p> <p>Creating new blockchain business ideas using morphological analysis: A case study Junseong Park, Sung H. Han, Young In Koh, South Korea</p> <p>Broadband development and firm creation: Dif-in-dif estimates for Germany Kirill Sarachuk, Magdalena Missler, Germany</p> <p>The Scandinavian democratic governmental support model for start-ups and innovations (SDeGMSI) Evangelos Markopoulos, Hugo Rourke, Hannu Vanharanta, UK</p> <p>A strategic partner selection decision-making support methodology in the business modelling phase for startups in the pre-incubation phase Evangelos Markopoulos, Emmanuel Querrec, Mika Luimula, Finland</p>	

187	Software and Systems Engineering in Artificial Intelligence Co-Chairs: Luis Serpa-Andrade and Andres Viscaino-Quito, Ecuador	AISC
12:00-13:30 AHFE 7: BRYANT PARK	<p>Detecting potential depressed users in Twitter using a fine-tuned DistilBERT model Miguel Antonio Adarlo, Marlene De Leon, Philippines</p> <p>The songbird and the robotic self-awakening Valarie Yerdon, USA</p> <p>Development of a platform based on artificial vision with SVM and KNN algorithms for the identification and classification of ceramic tiles Edisson Pugo-Mendez, Luis Serpa-Andrade, Ecuador</p> <p>Synchronization procedure for data collection in offline-online sessions Andres Viscaino-Quito, Luis Serpa-Andrade, Ecuador</p> <p>Proposal for the generation of profiles using a synthetic database Andres Viscaino-Quito, Luis Serpa-Andrade, Ecuador</p> <p>Improving common ground in human-machine teaming: Dimensions, gaps, and priorities Robert Wray, James Kirk, Jeremiah Folsom-Kovarik, USA</p> <p>Daphne-AT: A crew assistance tool for anomaly treatment during long duration exploration missions Poonampreet Kaur Josan, Prachi Dutta, Renee Abbott, Kyle York, Raymond Wong, Bonnie J Dunbar, Daniel Selva, Ana Diaz Artiles, USA</p>	
	188	Ergonomics in Interface Design Co-Chairs: Daniel Raposo and João Neves, Portugal
12:00-13:30 AHFE 8: COLUMBUS CIRCLE	<p>Design of access control system based on ergonomics in post-epidemic era Zikun Gao, Peiqi Yi, Luyu Wang, Xin He, China</p> <p>Brand marks examination. Empirical study of graphic parts in their relation to contrast, recognition, and memorization Daniel Raposo, Fernando Moreira da Silva, Ricardo Correia, Rogério Ribeiro, João Neves, Jose Silva, Portugal</p> <p>Effect of shape of landmark and function of visual field on accuracy of spatial position detection Ayane Sujaku, Mayu Kikuchi, Yohsuke Yoshioka, Japan</p> <p>Principles of development and evaluation of pictograms João Neves, Fernando Moreira da Silva, Daniel Raposo, Jose Silva, Portugal</p> <p>The application of life cycle assessment in sustainable furniture system design Dongfang Yang, Italy</p>	
	189	Emerging Techniques Co-Chairs: Niels Hinricher and Patrick Seitzinger, Germany/Canada
12:00-13:30 AHFE 9: FLATIRON	<p>Prototype of a piece of clothing for patients for quick and easy patient mobilizations in healthcare facilities Lorenz Müller, Niels Hinricher, Janina Gersie, Claus Backhaus, Germany</p> <p>Considerations and strategies for operationalizing heuristic evaluation work Helen Fuller, Timothy Arnold, Kyle Maddox, Kathleen Adams, USA</p> <p>Analysis of antibiotic purchasing service design based on SAPAD-AHP method Miao Liu, Wenjun Wang, China</p> <p>A novel headset system synchronizing vision and EEG testing for a rapid assessment and diagnosis of concussions and other brain injuries David Edquilang, Jeff Feng, USA</p> <p>Design of proton radiotherapy room based on environmental psychology Xinxiong Liu, Zikun Gao, China</p> <p>A product-service system approach to light therapy for treatment of seasonal depression Kaat Kenis, Ivo Dewit, Belgium</p> <p>Comparison of lab- and remote-based human factors validation – a pilot study Karoline Johnsen, Bernhard Wandtner, Michael Thorwarth, Germany</p>	

190	Interaction Design: Applications and Techniques Co-Chairs: Isabel Nunes and Janio Jadan-Guerra, Portugal/Ecuador	SYSI
12:00-13:30 AHFE 10: GRAMERCY	<p>Using intelligent personal assistants for teaching English Janio Jadán-Guerrero, Alexandra Avila, Johann Jadán, Isabel L. Nunes, Ecuador/Portugal</p> <p>Learning based on board game to inspire mathematical thinking Janio Jadán-Guerrero, Marco Santórum, Isabel L. Nunes, Diana Espinoza, Ecuador/Portugal</p> <p>Digital learning experiences in virtual museums Janio Jadán-Guerrero, Mónica Mendoza, Patricia Acosta-Vargas, Isabel L. Nunes, Ecuador/Portugal</p> <p>Using comics in the English language classroom Janio Jadán-Guerrero, Juan Ramos, Hugo Arias-Flores, Isabel L. Nunes, Ecuador/Portugal</p> <p>Helping kids and teens deal with cyberbullying through informative learning capsules Janio Jadán-Guerrero, Alexandra Bermeo, Priscila Cedillo, Isabel L. Nunes, Ecuador/Portugal</p> <p>Didactic strategy with mobile devices: An approach for correct use of English tense verbs Evelyn Moore, Juan Murillo-Morera, Janio Jadán-Guerrero, Costa Rica</p>	
191	Symposium: Digital Human Modelling By Women in Human Factors Co-Chairs: Sofia Scataglini and Silvia Imbesi, Belgium/Italy	DHMAO
12:00-13:30 AHFE 11: MADISON SQUARE	<p>Collecting data for digital human modeling during the COVID-19 pandemic Martin Fleischer, Germany</p> <p>Action research arm test with multisensory information Jesus Fernando Padilla Magaña, Esteban Peña-Pitarch, Neus Tico Falguera, Anas Al Omar, Iñaki Alceyalarrión, Spain</p> <p>Combining motion capture with vibrotactile feedback for real-time posture correction Alexander Van Gastel, Sander Zelck, Sofia Scataglini, Stijn Verwulgen, Belgium</p> <p>Design of a rehabilitation system monitoring gait of users with Parkinson's disease: Data visualization as a methodological tool Silvia Imbesi, Giuseppe Mincoelli, Italy</p> <p>Using 3D surface scanning to predict spinal profile when lying: Surface topology to predict internal spinal alignment Lionel Rayward, Maree Izatt, Daniel Green, J. Paige Little, Australia</p> <p>Grasp planning of unknown object for digital human model Quentin Bourret, Pierre-Olivier Lemieux, Julie Charland, Rachid Aissaoui, Canada</p> <p>Driver comfort and gender inequality measured with DHMS Mac Reynolds, Sofia Scataglini, USA</p> <p>Assessment of commercial off the shelf (COTS) sports brassieres for the U. S. Army tactical brassiere (ATB) program Hyegjoo Choi-Rokas, Edward Hennessy, Stephanie Brown, Linda DeSimone, USA</p>	
192	Safety Interventions and Training Programs Chair: Katherine Plant, UK	RR
12:00-13:30 AHFE 12: TURTLE BAY	<p>To stop, or not to stop, that it the dilemma: Evaluating the effects of safety countermeasures at signalized intersections during the yellow phase Alessandro Calvi, Fabrizio D'Amico, Chiara Ferrante, Claudio Petrella, Italy</p> <p>A driving simulator evaluation of second doses of an integrated driver training program Jeffrey Glassman, Sarah Yahoodik, Yusuke Yamani, Siby Samuel, Donald Fisher, USA</p> <p>A comprehensive safety analysis for gaze fixation of drivers to outside scene Abhijit Sarkar, USA</p> <p>Driver instruction for automated vehicles: Assessing the role of specific elements on learner motivation and mental model development Sophie Feinauer, Irene Groh, Tibor Petzoldt, Germany</p> <p>The evaluation of a training programme for drivers of level 4 automated vehicles Siobhan Merriman, Katie Plant, Kirsten Revell, UK</p>	

193	<p>Ergonomics in Urban Planning IV Co-Chairs: Eva-Maria Jakobs and Boris Orellana-Alvear, Germany/ Ecuador</p>	SUPI
12:00-13:30 AHFE 13: MADISON 1	<p>Design of inclusive urban itineraries: Case study in Guayaquil, Ecuador Veronica Solorzano, Malena Marin, Ecuador</p> <p>Potential of conflict communication formats for infrastructure projects Nils Hellmuth, Eva-Maria Jakobs, Germany</p> <p>Who plans and funds public space qualification projects? Policy, planning and delivery schemes in Lisbon metropolis João Rafael Santos, Luís Sanchez Carvalho, Portugal</p> <p>Mangrove infrastructure for the economic development of local communities in Naranjal - Ecuador Boris Orellana-Alvear, Juan Hidalgo, Alfredo Ordoñez, Esteban Zalamea, Ecuador</p> <p>Scales of gentrification in intermediary cities: A challenge for Ecuadorian territorial planning Alfredo Ordoñez, Boris Orellana-Alvear, Tania Calle-Jimenez, Esteban Orellana, Ecuador</p> <p>Validation of maintenance management core elements for higher educational institution buildings in developing countries education sector Tunde Ogunbayo, Clinton Aigbavboa, Opeoluwa Akinradewo, Olusegun Oguntona, Didi Thwala, South Africa</p> <p>Core competencies required for construction project success: The project management angle Olushola Akinshipe, Clinton Aigbavboa, Ogunbayo Babatunde Fatai, Didi Thwala, South Africa</p>	
194	<p>Human Factors in Aviation II Co-Chairs: Joonas Lieb and Simon Cookson, Germany/Japan</p>	AVI
12:00-13:30 AHFE 14: MADISON 2	<p>Pilot's visual attention allocation when taking risk in flight simulator Ruiyuan Hong, Kai Qu, Shan Gao, Lei Wang, China</p> <p>The ground station operator in single pilot operations – active or passive role? Ana P. G. Martins, Joonas Lieb, Max Friedrich, Germany</p> <p>Misrepresenting reality - limitations of accident documentaries for airline pilot training Simon Cookson, Japan</p> <p>Attention allocation during human-autonomy interactions: A human-in-the-loop simulation experiment on a multi-vehicle management task Tetsuya Sato, Yusuke Yamani, Eric Chancey, Samia Islam, USA</p> <p>Human factors analysis of flight deck energy management issues Kevin Siragusa, Edward Austrian, Tara Gibson, Michael Sawyer, USA</p>	
195	<p>Systems Design and Innovation Co-Chairs: Adriana Savescu and Christian Vocke, France/Germany</p>	SYSI
12:00-13:30 AHFE 15: MADISON 3	<p>Status quo and quo vadis: Creativity techniques and innovation methods for generating extended innovation processes Christian Vocke, Wilhelm Bauer, Germany</p> <p>Exploring user-preferred gestures for interaction tasks of data visualization on the large display Yiqi Xiao, China</p> <p>Garbage sorting and recycling system of the master and slave stations in commercial blocks Yaxi Wang, Ziyun Tong, China</p> <p>Generating a gesture set using the user-defined method in smart home contexts Yanming He, Peiyao Cheng, Shumeng Hou, China</p> <p>Collaborative robotics: Analysis of influence of the tool and the characteristics of the task on the upper limbs joint angles and task precision Adriana Savescu, Isabelle Urmes, Gilles Reno, Olivier Remy, Olivier Morel, Kevin Desbrosses, France</p>	
13:30-14:30 LUNCH AT THE RESTAURANT OF YOUR CHOICE		

196	Applied Human Factors in Society Operations II Co-Chairs: Hanss De la Fuente-Mella and Alina Yakymchuk, Chile/ Ukraine	HFBMS
14:30-16:00 AHFE 1: CHELSEA	<p>Analysis of political debate programs to identify the elements of political transition process in Chile Claudio Elórtégui Gómez, Hanns De la Fuente-Mella, Chile</p> <p>Innovative transport technologies of Ukraine: Sustainable development, economy, infrastructure Alina Yakymchuk, Mykola Shvets, Nataliia Ostapiuk, Oksana Zayachkivska, Ukraine</p> <p>Oppression among nations: Does it influence country's corruption? Yousif Abdelrahim, Russina Eltoum, Riham Hassan, Saudi Arabia</p> <p>Big data analysis in vehicular market forecasts for business management Lloyd Morris, Homero Murzi, Hernan Espejo, Olga Jamin Salazar De Morris, Juan Luis Arias Vargas, Colombia</p> <p>Motivations, success factors and challenges of open innovation for start-ups Florentin Popescu, Rob Warmenhoven, Netherlands</p> <p>Construction project failures around the world: What have we learned so far? Opeoluwa Akinradewo, Olushola Akinshipe, Clinton Aigbavboa, South Africa</p>	
197	Distance Learning and Pedagogy Co-Chairs: Kimi Ueda and Louise Sauve, Japan/Canada	TELS
14:30-16:00 AHFE 2: UNION SQUARE	<p>Psycho-emotional state of school children in conditions of quarantine limitations and distance learning Oksana Kravchenko, Oleksandr Safin, Yevhen Potapchuk, Svitlana Bobrynova, Dariia Karpova, Ukraine</p> <p>Monitoring the efficiency of the educational process in the conditions of distance learning Irina Reznichenko, Victoriya Makarchuk, Myroslava Tkachuk, Vita Bezliudna, Alla Dobryden, Tetiana Okolnycha, Ukraine</p> <p>Understanding dropout in distance and online learning by taking into account multiple factors Louise Sauve, Cathia Papi, Guillaume Desjardins, Serge Gerin Lajoie, Canada</p> <p>Motivational design of an e-learning application for managers in healthcare Marisa Schirmer, Mareike Sorge, Christina Mayer, Wiebke Stöver, Verena Nitsch, Susanne Mütze Niewöhner, Germany</p> <p>Effects of speaker's voice pitch variation on listener's intellectual concentration during online lecture Dongliang Liu, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Fumiaki Obayashi, Japan</p> <p>The incidence of Information Anxiety in virtual education in Mexico during the SARS-CoV-2 pandemic Mariel Garcia-Hernandez, Marco Antonio Marin Alvarez, Adriána Acero Gutiérrez, Nancy Alejandra Noriega Tovilla, Mexico</p> <p>Applying service design to online learning to increase user experience Shuo-Fang Liu, Yi-Chieh Wu, Taiwan</p>	
198	Applications in Robots, Drones and Unmanned Systems I Co-Chairs: Carsten Wittenberg and Daniel Schilberg, Germany	HFRDUS
14:30-16:00 AHFE 3: SUGAR HILL	<p>Challenges in research projects on augmented reality in the domain of mechatronic and robotic applications Benedict Bauer, Carsten Wittenberg, Germany</p> <p>Robots in popular sciences compared with their real capabilities Daniel Schilberg, Jelena Borovica, Lea Vianden, Meiko Litzba, Florian Millmann, Germany</p> <p>Analysis of intelligent design of service robot based on intelligent transformation Wei Ding, Zhaoyi Li, China</p> <p>Learning to master robotic arm movements with bimanual joystick control: Indicators for evaluating the difficulty of movement tasks Felix A. Dreger, Lewis Chuang, Gerhard Rinkenauer, Germany</p> <p>Assessing human factors for drone operations in a simulation environment Daniela Doroftei, Geert De Cubber, Hans De Smet, Belgium</p> <p>Multidimensional, intuitive and augmented interaction models for robotic surgery Giovanna Giugliano, Sonia Capece, Mario Buono, Italy</p> <p>Seeing each other in the air - or not? Implications for the visibility of a drone from a helicopter cockpit in the maritime environment Thomas Lübcke, Philipp Gorczak, Germany</p>	

199	Human Factors in Naval Aviation Training: Success and Challenges Co-Chairs: Beth Atkinson and Emily Anania, USA	HFSIM
14:30-16:00 AHFE 4: SUTTON PLACE	<p>Designing advanced automated performance measures and data analytics Mitchell Tindall, USA</p> <p>Exploration of integrated training environments John Killilea, USA</p> <p>Non-facilitated, self-led debriefing in instructorless training environments Emily Anania, USA</p> <p>Next generation pilot training solutions leveraging XR technology Michael Natali, USA</p> <p>Using human factors principles and methods to support aviation survival training instructors Beth Atkinson, USA</p> <p>Human systems integration for manned unmanned teaming for naval aviation James Pharmer, USA</p>	
200	Human Factors in Virtual Environments and Game Design IV Co-Chairs: Meixue He and Ao Jiang, China	HFGD
14:30-16:00 AHFE 5: MURRAY HILL	<p>The impact of digital tools on the education process in times of pandemic in Ecuador José Gómez, Ecuador</p> <p>Revisiting the correlation between video game activity and working memory: Evidence from machine learning Dingzhou Fei, China</p> <p>Thinking of aesthetic empathy in immersive exhibitions Meixue He, Ao Jiang, China</p> <p>The development of Muay Thai training game for tourism 4.0 Nanthawan Am Eam, Thailand</p> <p>Dora: An AR-HUD interactive system that combines gesture recognition and eye-tracking Xingguo Zhang, Zinan Chen, Xinyu Zhu, Zhenyu Gu, China</p> <p>Karaoke game with body movement tracking for investigating singing-motor interactions: System proposal Ryota Horie, Luiz Fernando Pedroso, Japan</p> <p>VR-app for a virtual perception of memory impairment in Alzheimer's patients Anis Jedidi, Fahmi Bellalouna, Mika Luimula, Tunisia</p> <p>Influence of age and industry experience on learning experience and outcome in virtual reality mines rescue training Shiva Pedram, Stephen Palmisano, Sebastien Mielliet, Pascal Perez, Australia</p>	
201	Kansei Engineering III Co-Chairs: Xiaoxue Zhang and Toshio Tsuchiya, China/Japan	KE
14:30-16:00 AHFE 6: BOWERY	<p>Availability of pedaling depth monitor for preventing unintended acceleration Toshio Tsuchiya, Kota Kuwada, Moe Oguri, Natsuki Kawaguchi, Yuki Higashinaga, Japan</p> <p>Mining design elements of household medical products based on user comments Xiaoxue Zhang, China</p> <p>Chronicling changes of Manzai Acts in M-1 Grand Prix and the Manzai Takuma Ino, Masashi Yamada, Japan</p> <p>Correspondence analysis on the production staff for the anime series Nintama Rantaro Ayaka Iguma, Masashi Yamada, Japan</p> <p>Kansei evaluation of localized film posters Emiri Otsuka, Namgyu Kang, Japan</p> <p>Customer preference of recycled plastic products Pei-ju Lin, Jun-yu Yang, Taiwan</p>	

202	Human Performance, Improvement, and Variability Co-Chairs: Edwin Irwin and Luis Serpa-Andrade, USA/Ecuador	HFAS
14:30-16:00 AHFE 7: BRYANT PARK	<p>Factors influencing the elderly's acceptance of online health education courses in chronic disease based on DEMATEL method Rui Sun, Chunrong Liu, China</p> <p>Early intervention to reduce falls in community-active seniors: A pilot study Edwin Irwin, Richard Ackermann, David Taylor, Edward O'Brien, USA</p> <p>Transforming the elderly's disadvantage into advantage in creativity activities Yun-Meng Zhao, Ding-Bang Luh, Yue Sun, China</p> <p>An analysis of influential factors to the elderly's intention to use public physical exercising facility based on DEMATEL approach Zan Mengyao, Chunrong Liu, China</p> <p>Addressing the gaps in elderly falling prevention from the perspective of a human-centered design Alisher Saduakas, Ulugbek Ismatullaev, Kwanmyung Kim, Kazakhstan</p> <p>Design analysis of sit-up booster based on KANO model Lan Xia, Deqiang Sun, Ming Yan, China/Italy</p> <p>Playful approach methods for children with special educational needs based on interactive connected devices Luis Serpa-Andrade, David Moscoso - Montenegro, Ecuador</p> <p>Effect of education on employers' attitude for employing people with visual disability Eyal Eckhaus, Israel</p>	
203	Human Dynamics for Social Cohesion Co-Chairs: Nuno Martins, Daniel Brandão and Daniel Raposo, Portugal	HDCS
14:30-16:00 AHFE 8: COLUMBUS CIRCLE	<p>'Quick Charge' optimization design and service practice for campus charging piles Tingyu Yang, Qian Ji, Yekai Wei, Chanchan Yao, China</p> <p>Overcrowded ecologies: Designing value through more-than-human factors Elisabetta Cianfanelli, Maria Claudia Coppola, Margherita Tufarelli, Italy</p> <p>Benefit of inconvenience: Revising human ability for the design of Kansei Design Yuuki Shigemoto, Japan</p> <p>UpStart – Creative industries through design for social innovation, heritage and management Paula Reaes Pinto, Paulo Simões Rodrigues, Rui Fragoso, Rui Quaresma, José Ventura, Fátima Jorge, Cristina Marreiros, Tiago Navarro Marques, António Gorgel Pinto, Portugal</p> <p>Digitization and enabling technologies for inclusive use of cultural and environmental resources: Italian cultural itinerary Rosa Maria Giusto, Mario Buono, Italy</p>	
204	Human-Centered Aerospace Systems and Sustainability Applications Co-Chairs: Pedro Arezes and Celina P. Leão, Portugal	HCASSA
14:30-16:00 AHFE 9: FLATIRON	<p>An advisory assistance system for crew-aided flight status management in single pilot operations Ali Zolghadri, France</p> <p>Method to assist zonal safety analysis for large civil aircrafts Xiaoyu Song, China</p> <p>Model-based flight phase suppression safety design and evaluation process for crew warnings Lina Wu, Kai Liu, China</p> <p>The use of UAVs throughout time – a safety retrospective Celina P. Leão, Susana Costa, Portugal</p> <p>Human factors hazards in aviation operating environment during COVID -19 Rosa Maria Arnaldo Valdés, Victor Fernando Gómez Comendador, Maria Zamarreño Suarez, Francisco Pérez Moreno, Raquel Delgado-Aguilera Jurado, Spain</p> <p>Impact of artificial intelligence in the certification of human-centered aviation systems Rosa Maria Arnaldo Valdés, Victor Fernando Gómez Comendador, Raquel Delgado-Aguilera, Francisco Perez Moreno, Maria Zamarreño, Spain</p>	

Thursday, July 28

205	Service Innovation in a VUCA World Co-Chairs: Christian Zagel and Freimut Bodendorf, Germany	HSSE
14:30-16:00 AHFE 10: GRAMERCY	<p>Corporate effectuation as human-centered entrepreneurs: Suggestions from established technology-driven company Yuriko Sawatani, Japan</p> <p>Interaction as a concept for social service engineering Christian Zinke-Wehlmann, Julia Friedrich, Vanita Römer, Germany</p> <p>Analysing Internet-related social work opportunities of an approach inspired by Actor-Network Theory (ANT) Matthias Scheibe, Germany</p> <p>Blockchain-powered digital ownership from users' perspectives Dam Thi Thien Nhi, Leonhard Glomann, Alexander Piazza, Germany</p> <p>Are we prepared for the rise of service robots? - A review on acceptance measurement Nina Merz, Joerg Franke, Freimut Bodendorf, Germany</p> <p>Combining digital and physical user interfaces – concept of a self-service system for exhibitions Christian Zagel, Matthia Leyendecker, Germany</p>	
207	Emotional Engineering IV Co-Chairs: Hiroko Shoji and Hideyoshi Yanagisawa, Japan	APD
14:30-16:00 AHFE 12: TURTLE BAY	<p>Design and research of household small electric drill based on users' perceptual needs Shuyu Wu, China</p> <p>An investigation into interpersonal space and conversation distances of Chinese people for different artwork styles and genders Yiyue Li, China</p> <p>Education in context and the variation of moods throughout COVID-19: an emotional design perspective, using the BRUMS methodology Iara Margolis, Bernardo Providência, João Sampaio, Portugal</p> <p>Design of a family product and service system DOSE to fulfill the emotional needs of patients with depression Xinqiao Wang, China</p> <p>Exploring the relationship between an emotional experience with everyday products and its contribution to people's well-being and life satisfaction Youngjun Park, Chajoong Kim, Jungkyoon Yoon, South Korea/USA</p>	
208	User Research and Interaction Design Co-Chairs: Paulo Noriega and Elisangela Vilar, Portugal	ED
14:30-16:00 AHFE 13: MADISON 1	<p>Morning boost on alertness, cognitive performance and mood with dynamic lighting Yanjie Li, Weining Fang, Beiyuan Guo, Haifeng Bao, China</p> <p>An interactive visualization system for urban cultural quantitative model Wenjun Hou, Yuxin Han, Xinli Wei, China</p> <p>Game or performance: The future of dance under the intervention of digital interactive technology Yixin Long, Ren-ke He, China</p> <p>Sports bra pressure: Effect on core body temperature and comfort sensation Qi Long Liu, Kit Lun Yick, Kam Ching Chan, Sin Tung Wong, Sun Pui Ng, Hong Kong</p> <p>Design of a human factors questionnaire to evaluate digital solutions developed for industrial work Susanna Aromaa, Päivi Heikkilä, Finland</p> <p>User acceptance: Case study of an interactive shopping assistant Elisangela Vilar, Margarida Cordeiro, Francisco Rebelo, Paulo Noriega, Portugal</p> <p>Inspiration mining: Exploring design strategies - Part II Paulo Maldonado, Alice Merkens, Inês Palma, Raquel Farinha, Rodrigo Balhan, Portugal</p>	

209	Occupational Safety and Safety Management Co-Chairs: Sari Tappura and Anne Garcia, Finland/USA	SMHF
14:30-16:00 AHFE 14: MADISON 2	<p>Future development areas for safety performance measurement Aki Jääskeläinen, Sari Tappura, Finland</p> <p>Evaluation of correct usage, comfort and fit of personal protective equipment for construction work Anna-lisa Osvaelder, Lars-ola Bligard, Bijan Aryana, Jonas Borell, Sweden</p> <p>Evaluation of the exposure risk to ultrasound emitted by ultrasonic cleaner machines: A case study Fabio Lo Castro, Sergio Iarossi, Massimiliano De Luca, Italy</p> <p>The effect of occupational accidents on the construction companies' economic performance Bàrbara Estudillo Gil, Jose M. Carretero-Gomez, Francisco J. Forteza, Spain</p> <p>Human-machine interaction safety in manufacturing: A scoping review Ilaria Lombardi, Sonia Capece, Maria Grazia Lourdes Monaco, Mario Buono, Italy</p> <p>Agriculture safety culture and risk management in Finland Jarkko Leppala, Risto Rautiainen, Finland</p> <p>The ups and downs of accidents' figures – the Portuguese case study revisited Celina P. Leão, Susana Costa, Joana Barbosa, Nuno Coelho, Portugal</p>	
210	Interaction Design and Evaluation of Intelligent Networking Vehicles II Co-Chairs: Kaimin Guo and Ge Li, China	ED
14:30-16:00 AHFE 15: MADISON 3	<p>Low-fidelity model as a redesign tool for frame running Juliana Cardoso Braga, Maria Fernanda Salamanca Carvalho, Frederico Sousa Santos, Gabriel Henrique Cruz Bonfim, Diego Augusto Costa Alves, Cleudmar Amaral De Araújo, Portugal</p> <p>Age-friendly digital express service design framework Jean Cao, Hao Jiang, Jiangjing Xu, Yu Hong, Tiantian Li, China</p> <p>User experience of spatial immersive interactive systems in autonomous vehicles: A case study of HUD mixed reality Kaimin Guo, YuanBo Sun, Shuai Sun, China</p> <p>From design to verification - case study of vehicle interaction and experience design Jie Gao, Yifan Li, China</p> <p>Persuasive interaction design based on the behavior of car-sharing users in Beijing Zhu Qingyu, Ying Zhao, Hao Yang, Yiyang Zhang, China</p> <p>Interactive design for intelligent vehicles in the context of smart city Yinan Che, Yuanbo Sun, Zhang Heng, Chenxi Wang, Zhang Boyang, China</p>	
REFRESHMENTS: 16:00 - 16:30 • ROOM: EMPIRE BALLROOM (LEVEL 2)		
211	Interconnect Systems and Vehicle Automation Co-Chairs: Sharon Ouddiz and Céline Lemerrier, France	RR
16:30-18:00 AHFE 1: CHELSEA	<p>Control centers for maneuver-based teleoperation of highly automated and autonomous vehicles: System model and requirements Nicolas Herzberger, Joscha Wasser, Frank Flemisch, Germany</p> <p>(Don't) talk to me! Application of the Kano method for speech outputs in conditionally automated driving Deike Albers, Niklas Grabbe, Yannick Forster, Frederik Naujoks, Andreas Keinath, Klaus Bengler, Germany</p> <p>Understanding resilient interactions between automated vehicles and active transport modes Katie Parnell, Katie Plant, UK</p> <p>Interactive merging behavior in a coupled driving simulator: Experimental framework and case study Olger Siebinga, Arkady Zgonnikov, David Abbink, Netherlands</p> <p>Evaluation of a user-adaptive light-based interior concept for supporting mobile office work during highly automated driving Fabian Walocha, Hoai Phuong Nguyen, Uwe Drewitz, Klas Arne Ihme, Germany</p> <p>How can the attentional capacity of drivengers in level 3 autonomous vehicle be improved? Influence of the non-driving-related task and the driving experience Sharon Ouddiz, Céline Lemerrier, France</p> <p>Human Autonomous Vehicle (HAV): From sickness prevention to emotional response Victor De Nalda Tárrega, Andrés Soler, Nicolás Palomares, Javier Silva, Jose Laparra, Jose Solaz, Spain</p> <p>Implications of human-machine interface for inclusive shared autonomous vehicles Ming Yan, Lucia Rosa Elena Rampino, Caruso Giandomenico, Huimin Zhao, Italy</p>	

212	Social & Occupational Ergonomics II Co-Chairs: Zenija Roja and Henrijs Kalkis, Latvia	SOE
16:30-18:00 AHFE 2: UNION SQUARE	<p>More than a machine at work: Exploring the impacts of technological change on mental health Liliana Cunha, Daniel Silva, Sarah Maggioli, Portugal</p> <p>Effects of cognitive ability and social presence on performance of mathematical calculation and recognition memory tasks Zhecheng Wang, Ruifeng Yu, China</p> <p>Toxic workplace environment Asmaa Alsereidi, Amal Almarzooqi, Saed Amer, UAE</p> <p>Towards data-driven dairy farming in Thailand: A preliminary survey of farmer's needs based on in-depth interviews Gorn Perapalanunt, Jirat Viriyataranon, Chinnakrit Channok, Bhumibhat Imsamran, Ampan Laosunthara, Danai Jattawa, Thanathip Suwanasopee, Skorn Koonawootrittriron, Takumi Ohashi, Natt Leelawat, Jing Tang, Thailand</p> <p>Bases and fundamentals of Obradorism in Mexico Cesar Guevara, Marco Antonio Rojo Gutiérrez, Ana Karina Guevara, Ecuador</p> <p>Ergonomic intervention in pharmaceutical distribution work in India using the principles of anthropometry Pallavi Murarka, Manjit Chauhan, India</p> <p>Biomechanical risk assessment of curbside waste collection round through heart rate and GPS data Alessio Silveti, Lorenzo Fiori, Antonella Tatarelli, Adriano Papale, Alberto Ranavolo, Giorgia Chini, Tiwana Varrecchia, Ari Fiorelli, Francesco Draicchio, Italy</p>	
213	Ergonomics in Urban Planning V Co-Chairs: Maria Matos Silva and Madlen Günther, Portugal/Germany	SUPI
16:30-18:00 AHFE 3: SUGAR HILL	<p>Lisbon's metropolitan public space network as an opportunity for the management of the urban water cycle Maria Matos Silva, Ana Beja Da Costa, Portugal</p> <p>Knowledge city vs smart city: Approaches and development areas Sonia Cueva, Ecuador</p> <p>Territorial strategic plan focused on the sustainable urban-environmental micro-zoning of the Puerto Jeli parish, Santa Rosa canton, Ecuador 2021 Maria Isabel Romero, Laura de Jesús Calero Proaño, Maria Pin, Ecuador</p> <p>The liveable city - How effective planning for infrastructure and personal mobility can improve people's experiences of urban life Madlen Günther, Josef F. Krems, Germany</p> <p>Experimentation in open sea of the composite structures for the sustainable development of aquatic ecosystems Alexandra Gabriela Ene, Carmen Mihai, Mihaela Jomir, Romania</p> <p>Institutional evaluation of public and private partnerships relevant contributions to housing delivery system Tunde Ogunbayo, Clinton Aigbavboa, Didi Thwala, Opeoluwa Akinradewo, Olusegun Oguntona, South Africa</p>	
214	System Interaction and User Perception Co-Chairs: Safa Elkefi and Saptarshi Kolay, USA/Ecuador	SYSI
16:30-18:00 AHFE 4: SUTTON PLACE	<p>The influence of inherent interactivity on information recall in knowledge visualization design Wang Hairong, Lei Tian, China</p> <p>Digital storytelling to help improve reading comprehension Kelia Mayorga, Hugo Arias-Flores, Carlos Ramos-Galarza, Isabel L. Nunes, Ecuador</p> <p>An overview of spatial stimulus-response (S-R) compatibility studies for further human machine interface studies Alan Chan, Siu Shing Man, Tingru Zhang, Wilson W. Chan, Saad A. Alabdulkarim, Hong Kong</p> <p>Using a human factors approach to evaluate patient-centered cancer care Safa Elkefi, Onur Asan, Tina W. F. Yen, USA</p> <p>The influence factors of standby sign on user shutdown behavior Weiyi Li, Sha Liu, Zichen Zhang, China</p> <p>User models for recommendation systems Maritzol Tenemaza, Ecuador</p>	

215	Advanced Learning Techniques in Education II Co-Chairs: Charlott Sellberg and Salman Nazir, Sweden/Norway	TELS
16:30-18:00 AHFE 5: MURRAY HILL	<p>Eye-tracking in simulator training and assessment: A semi-structured meta-review Charlott Sellberg, Gesa Praetorius, Markus Nivala, Sweden</p> <p>Analyzing Korean reading course and designing education: A focus on learner's eye-tracking analysis Seung nam Min, Jungnam Im, Murali Subramaniam, South Korea</p> <p>How does color matching of web-based courseware affect learners' satisfaction Zichen Zhang, Sha Liu, Weiyi Li, China</p> <p>A study for the impact of value co-creation on course performance in higher education Lu Lu, Hsien-Hui Tang, Taiwan</p> <p>Behavior-based performance optimization in military training environments Audrey Zlatkin, Costas Koufogazos, Gwen Campbell, USA</p> <p>A care-oriented design process model for sustainable design education Ying Jiang, China</p> <p>COVID-19 pandemic state: Teaching children colors with mobile application based on augmented reality Nigar Tuğbagül Altan, Oğuzkaan Sarıkaya, Turkey</p> <p>Measuring mental models Lisa Elliott, Morgan Janney, USA</p>	
216	Applications in Robots, Drones and Unmanned Systems II Co-Chairs: Yang Cai and Simon Hoffmann, USA/Germany	HFRDUS
16:30-18:00 AHFE 6: BOWERY	<p>Extreme reality (EXR) telemetry interfaces Yang Cai, Haocheng Zheng, Lenny Weiss, USA</p> <p>Quantifying the influence of image quality on operator reaction times for teleoperated road vehicles Simon Hoffmann, Felix Willert, Markus Hofbauer, Andreas Schimpe, Frank Diermeyer, Germany</p> <p>The use of drone technologies within the built environment of South Africa Benjamin Nicolai Jensen, Eljane Uys, Laetitia Cook, South Africa</p> <p>Exploring heterogeneity for human-machine teams with real systems, real users, and real consequences Jessica Steiner, Nhut Ho, Kevin Zemlicka, Ali-akbar Agha-Mohammadi, Olivier Toupet, Muhammad Fadhil Ginting, Nelson Brown, Marcel Kaufmann, Benjamin Morrell, Michael Milano, Karen Dominguez, Shaun Cabusas, Andranik Yelanyan, Elizabeth Knight, Cesar Flores, USA</p> <p>Automatic control system of transportation equipment for power transmission line Haiyan Wang, Chengyong Huang, Junhong Zhou, Wenzhuo Lian, Kang Hou, China</p>	
217	Cybersecurity in Software Development, Critical Infrastructure and Transportation Contexts Co-Chairs: Aryn Pyke and Dan Cassenti, USA	CYBER
16:30-18:00 AHFE 7: BRYANT PARK	<p>Assessing human factors and cyberattacks at the human-machine interface: Threats to safety and pilot and controller performance Mark Miller, Sam Holley, USA</p> <p>Navigating through cyber threats, a maritime navigator's experience Erlend Erstad, Runar Ostnes, Mass Soldal Lund, Norway</p> <p>A coherence model to outline obstacles and success factors for information security from the CISO's point of view Asiye Öztürk, Erfan Koza, Germany</p> <p>Privacy concerns about smart home devices: A comparative analysis between non-users and users Chola Chhetri, Vivian Genaro Motti, USA</p> <p>A software security study among German developers, product owners, and managers Stefan Dziwok, Sven Merschjohann, Thorsten Koch, Germany</p> <p>From security-as-a-hindrance towards user-centered cybersecurity design Rick van der Kleij, Netherlands</p> <p>Security in vehicle-to-infrastructure communications Pablo Marcillo, Ángel Leonardo Valdivieso Caraguay, Myriam Hernandez-Alvarez, Ecuador</p>	

Thursday, July 28

218	Design for Disability Co-Chairs: Luis Serpa-Andrade and Theresa Lobo, Ecuador/USA	DI
16:30-18:00 AHFE 8: COLUMBUS CIRCLE	<p>Design for sustainable behaviour to design an adaptive climbing wall Marita Canina, Daniela Amandolese, Carmen Bruno, Italy</p> <p>Interactive die as an educational tool for children with special educational needs Luis Serpa-Andrade, David Moscoso-Montenegro, Ecuador</p> <p>Design process in the development of educational tools for children with special educational needs Luis Serpa-Andrade, David Moscoso-Montenegro, Ecuador</p> <p>Intelligent interactive accompaniment platform to support the learning process for highly vulnerable children Luis Serpa-Andrade, Roberto García-Vélez, Vladimir Robles-Bykbaev, Paul Mata-Quevedo, Cristhian Flores Urgiles, Adriana Leon-Pesantez, Lucia Cordero Cobos, Ecuador</p> <p>Information and communication technologies learning methodologies for children with ADHD Roberto García-Vélez, Luis Serpa-Andrade, Graciela Serpa-Sndrade, Ecuador</p> <p>Inclusion of people with ADHD in school, college, university and work Roberto García-Vélez, Luis Serpa-Andrade, Graciela Serpa-Andrade, Ecuador</p> <p>Innovative intelligent technology and information systems for visually impaired Theresa Lobo, USA</p>	
219	Organizational Factors Co-Chairs: Anna Maria Teperi and Blandine Brangier, Finland/France	HFML
16:30-18:00 AHFE 9: FLATIRON	<p>Interrelation of organizational climate of trust, trust profile of leaders and business performance Tom Werner Hermann Albert Sommerlatte, Germany</p> <p>Organizational culture and digital transformation: Mapping the field Jorge Cruz-Cárdenas, Javier Parra Domínguez, Ekaterina Zabelina, Olga Deyneka, Ecuador</p> <p>Participative development for improving safety – collaborative work process analysis in nuclear maintenance Anna Maria Teperi, Ilkka Asikainen, Arja Ala-Laurinaho, Vuokko Puro, Finland</p> <p>The impact of COVID-19 on job security of millennial quantity surveyors Elzane van Eck, Danie Hoffman, South Africa</p> <p>Personality and crisis preparedness: The mediation and moderation of narcissistic rivalry and escalation of commitment Yael Brender-Ilan, Dikla Asnafy Hetzrony, Israel</p> <p>Hotels as an alternative property investment asset class and its funding challenges in South Africa Laetitia Cook, Fabio Walter Nava, South Africa</p> <p>Factors affecting total quality management implementation in the construction industry Benjamin Sunkanmi Adeyemi, Clinton Aigbavboa, Wellington Didibhuku Thwala, South Africa</p>	
220	Design Communication IV: Design Culture Co-Chairs: Daniel Raposo and Amic Ho, Portugal/Hong Kong	HFCD
16:30-18:00 AHFE 10: GRAMERCY	<p>Revitalizing the national folk play: The tiger hunting folk play Sarawuth Pintong, Thailand</p> <p>The importance of design and digital media for the promotion and sustainability of cultural and religious tourism Nuno Martins, Sergio Dominique Ferreira, Rita Perdiz, Susana Barreto, Cláudia Lima, Eliana Penedos-Santiago, Portugal</p> <p>How a learning-based system utilizing visual language and creative mindsets can increase participation in a complex concept of science campaign. Clara Choi, USA</p> <p>Ethnographic study of living alone elderly with mild cognitive impairment in Hong Kong: A pilot study Alex Pui-yuk King, Kin Wai Michael Siu, Hong Kong</p> <p>Exploring visual design strategies for gender diversity representation through a design game workshop Xinyin Bao, Wen Tao Zhu, China</p>	

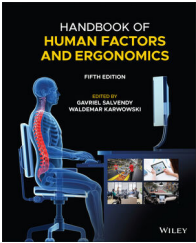
	221 Human Factors and the Design of Performance Products Chair: Susan Sokolowski, USA	IPID
16:30-18:00 AHFE 11: MADISON SQUARE	<p>Visual, volumetric and anthropometric measurement comparisons between boot interior and 3D foot scans to improve firefighter safety Susan Sokolowski, Huiju Park, Linsey Griffin, Meredith McQuerry, James Tuttle, USA</p> <p>Understanding footwear traction performance to reduce the risk of outdoor falls and improve mobility for the aging population Susan Sokolowski, Nicole Demby, Ezra Ende, Chrissy Bettencourt, USA</p> <p>Understanding footwear traction performance to reduce the risk of indoor falls and improve mobility for the aging population Susan Sokolowski, Chrissy Bettencourt, USA</p> <p>Evolution and development trends for experience design of manufacturing enterprises under the background of industry 4.0 Yonghong Liu, Zhaorui Zeng, Yanlin Yin, Yiming Song, China</p> <p>Designing mobile robots: A systems thinking approach for industrial designers Yong-Gyun Ghim, USA</p> <p>Interdisciplinary industrial design strategies for human-automation interaction: Industry experts' perspectives Naomi Yvonne Mbelekani, Klaus Bengler, Germany</p> <p>Vernacular products: An example to circular design José Vicente, Portugal</p>	
	222 Design and Sustainabilities Co-Chairs: Liliana Soares and Ermanno Aparo, Portugal	HDCS
16:30-18:00 AHFE 12: TURTLE BAY	<p>The achievement of a balanced and consistent PhD thesis - journey towards the PhD proposal Michele Santos, Rita Almendra, Portugal</p> <p>Slipper palace. Creative entrepreneurship for the common good António Gorgel Pinto, Paula Reaes Pinto, Portugal</p> <p>Interpreting Francis Bacon's work through contemporary digital media: Pedagogical practices in university contexts Cláudia Lima, Susana Barreto, Rodrigo Carvalho, Portugal</p> <p>From utopia to dystopia: Students insights for the development of contemporary societies through design fiction Violeta Clemente, Fátima Pombo, Portugal</p> <p>The concept of Tantra as meta-design to create sustainability Liliana Soares, Ermanno Aparo, Portugal</p> <p>Human-centered design on the ways to Santiago de Compostela: New artefacts for their sustainability João Martins, Luis Mota, Rui Cavaleiro, Portugal</p> <p>Worth by northwest: A design strategy for territorial sustainability Maria De Fátima Faria Costa, Ermanno Aparo, Liliana Soares, Portugal</p> <p>Disassembly objects: The importance of materials in product design education Paulo Dinis, Inês Veiga, Portugal</p>	
	223 Innovation and Healthcare Technology for the Aging Population Co-Chairs: Sandra Sueli Vieira Mallin and Jérôme Dinet, Brazil/France	HFAS
16:30-18:00 AHFE 13: MADISON 1	<p>Design research on outdoor fitness equipment for cognitive exercise Xiyang Xu, Dingbang Luh, China</p> <p>A DEMATEL approach to exploring influencing factors of the elderly satisfaction with park fitness facilities Chunrong Liu, Yahui Wang, China</p> <p>Design of a help-seeking companion robot for elderly people living alone Luyu Wang, Ying Huang, Xin He, China</p> <p>Mental fog and ergonomics: Approaches and interactions Sandra Sueli Vieira Mallin, Brazil</p> <p>Promoting physical activity for elderly people with immersive virtual reality (IVR) Jérôme Dinet, Rui Nouchi, France</p>	
	224 HSSE Wrap-Up Co-Chairs: Christine Leitner, Walter Ganz, Clara Bassano, Debra Satterfield, UK/Germany/Italy/USA	HSSE
	16:30-18:00 AHFE 14: MADISON 2	

Thursday, July 28

Detailed Technical Program

Thursday, July 28

225	Accessibility, Human Factors and Product Design Co-Chairs: Aimee Roundtree and Nao Takizawa, USA/Japan	HFAAT
16:30-18:00 AHFE 15: MADISON 3	<p>Redefining engineering psychology: Designing gestural car HMI for luxury car buyers Chujin Hu, Li Zhao, Yuxin Chen, Yuchen Zhang, Yuxuan Dai, Sibao Gao, Zhejun Zhang, Ruonan Huang, Lingjie Wu, Lu Wang, Wei Liu, China</p> <p>Towards accident prevention: An aspiration risk warning system for older adults during meals Takumi Ohashi, Honoka Hayashi, Sota Takagi, Yu Miyaji, Ryota Izawa, Miki Saijo, Japan</p> <p>Human-centered design of cattle behavior monitoring system for grazing in abandoned farmland Nao Takizawa, Takuya Washio, Masamoto Fukawa, Kenichi Takeda, Hiroyuki Ito, Miki Saijo, Takumi Ohashi, Japan</p> <p>Speech recognition technology for users with apraxia: Integrative review and sentiment analysis Aimee Roundtree, USA</p> <p>The role of design thinking in the development of assistive technologies: Case study of Morphic auto-personalization Anna Szopa, Gregg Vanderheiden, USA</p> <p>Design, robotics and co-working. A human-centric perspective on fifth industrial revolution Elena Laudante, Fabrizio Formati, Mario Buono, Italy</p> <p>User experience of artificial intelligence by users with visual disabilities Hyung Nam Kim, USA</p>	



Handbook of Human Factors and Ergonomics, 5th Edition Gavriel Salvendy (Editor), Waldemar Karwowski (Editor)

DESCRIPTION

Discover the latest developments in ergonomics and human factors with the newest edition of this market leading reference. In the newly revised Fifth Edition of Handbook of Human Factors and Ergonomics, Drs. Gavriel Salvendy and Waldemar Karwowski deliver a comprehensive exploration of workplace environment design, human-machine interfaces, and cutting-edge research on the reduction of health and safety risks. The editors have

compiled practical material from an international team of leading experts in ergonomics and human factors that will benefit specialists in the area, as well as safety engineers and human-computer interaction specialists.

The Handbook includes information culled from over 7500 sources and features brand new coverage in areas like artificial intelligence, social media, information technology and cybersecurity, and data analytics. Numerous case studies demonstrate the real-world application of the concepts and methods discussed within and showcase the extraordinary developments in the field since the publication of the Fourth Edition in 2012.

Readers will also benefit from the inclusion of:

- A thorough introduction to the human factors function, including the discipline of human factors and ergonomics and human systems design and integration
- An exploration of the fundamentals of human factors, including sensation and perception, selection and action control, information processing, and mental workload
- Discussions of the design of equipment, tasks, jobs, and environments, including workplace design, task analysis and design, and training systems
- An in-depth treatment of design for health, safety, and comfort, including low-back and upper extremity musculoskeletal disorders and the use of personal protective equipment

Perfect for ergonomics and human factors engineers at any level of their careers, Handbook of Human Factors and Ergonomics will also earn a place in the libraries of design engineers, applied psychologists, human-computer interaction specialists, engineering and technology managers, and safety professionals and industrial hygienists.

ABOUT THE AUTHOR

Gavriel Salvendy, PhD, is University Distinguished Professor at the College of Engineering and Computer Science at the University of Central Florida, Founding President of the Academy of Science, Engineering, and Medicine of Florida, and a member of the National Academy of Engineering (NAE). He is also Professor Emeritus of Industrial Engineering at Purdue University and Chair Professor Emeritus and Founding Head of the Department of Industrial Engineering at Tsinghua University, Beijing, P.R. China.

Waldemar Karwowski, PhD, is Pegasus Professor and Chairman of the Department of Industrial Engineering and Management Systems and Executive Director of the Institute for Advanced Systems Engineering at the University of Central Florida. He is a Past President of the Human Factors and Ergonomics Society and a Past President of the International Ergonomics Association (IEA). He is the recipient of three Honorary Doctorates from three countries.

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Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, TUESDAY, JULY 26, 2022

Time: 9:00-17:00

Room: Empire Ballroom (Level 2)

Virtual Room: AHFE Posters

- A1. Work-related noise exposure in a neonatal intensive care unit
Claus Backhaus, Simon Siebers, Germany
- A2. Experiencing the history and cultural heritage: The tourist centered map design of Liverpool City
Fang Bin Guo, Xiaochun Zhan, UK
- A3. Relationship between tire pressure and ride comfort of manually self-propelled wheelchairs
Shoichiro Fujisawa, Jyunji Kawata, Jiro Morimoto, Yoshio Kaji, Mineo Higuchi, Masayuki Booka, Japan
- A4. Estimating attackers' profiles results in more realistic vulnerability severity scores
Kitty Kioskli, Nineta Polemi, UK
- A5. Limiting the risk to the environment by measuring the characteristics of antennas in the near zone
Marian Wnuk, Poland
- A6. An analysis of influencer marketing effectiveness in luxury brands using eye tracking technology
Pilar Contero López, Jorge Camba, Manuel Contero, Switzerland
- A7. The influence of the visualization modality on consumer perception: A case study on household products
Almudena Palacios, Francesc Ochando, Jorge Camba, Manuel Contero, Spain
- A8. Effects of augmented reality application in recovery training of stump nerves
Zhenwei You, Zhe Li, Jian Liu, China
- A9. Tech4UX – An approach to systematically assess the potential of a technology for positive user experience
Valeria Bopp-Bertenbreiter, Doreen Engelhardt, Lena Rittger, Denise Pottin, Germany
- A10. Models and measures of arts teacher competency under COVID-19 normalization
Pei Yan, Wang Manman, Zhao Yating, Yihang Du, China
- A11. The impact of double gloves on hands temperature and blood volume changes at low temperature: A case study
Magdalena Młynarczyk, Joanna Orysiak, Emilia Irzmańska, Piotr Prus, Elżbieta Łastowiecka-Moras, Poland
- A12. Prevalence of musculoskeletal disorders and associated symptoms in workers of a pulp and paper industry
Isabel Moreira-Silva, Jorge Mota, Ricardo Cardoso, Nuno Ventura, Adérito Seixas, Joana Azevedo, Portugal
- A13. Risk analysis of musculoskeletal disorders for healthcare workers during patient handling for two-person assist tasks
Shu-Zon Lou, YuChi Chen, Ya-Ling Teng, Taiwan
- A14. Evaluating eye tracking in simulated aviation environments for U. S. Army aviator operator state monitoring
Christopher Aura, Jon Vogl, Aaron Mc Atee, Katie Feltman, Leonard Temme, Paul St Onge, USA
- A15. Smartphone applications for municipalities: The profiles of adopters and non-adopters
Hananel Rosenberg, Azi Levon, Israel
- A16. The effects of skip buttons on brand recognition in open-screen advertising
Xia Xia, Deyu Zhou, Haifeng Li, China
- A17. Creation and discussion of design criteria for dynamic tripod operation spoon in toddlers
Yu-chen Huang, Johan Chang, Taiwan
- A18. Recognition of micro-credentials in seafarers' education
Ana Gundic, Luka Grbic, Dino Zupanovic, Dalibor Ivanisevic, Croatia
- A19. Context-aware explainable recommendations based on do-main knowledge graph
Muzamil Hussain Syed, Huy Tran Quoc Bao, Sun Tae Chung, South Korea
- A20. Using decision tree to explore the assistive technology assessments factors: Case study of wheelchairs
Kwoting Fang, Taiwan
- A21. Charm value analysis of cognitive toys for preschool children
Runrun Wu, China
- A22. Development of a driving seat and control simulation setup for passenger vehicles
Antonio Gaido, USA
- A23. Learning environments as an alternative in education
Selene Vazquez, Jessica Garcia, Miguel Angel Cruz Domínguez Hernández, Mexico
- A24. Validation of webcam-based eye tracking under multiple experimental conditions
Divya Seernani, Nam Nguyen, Amadine Grappe, Andrew Korepanov, Kare Jensen, Kerstin Wolf, Denmark/USA

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, TUESDAY, JULY 26, 2022

Time: 9:00-17:00

Room: Empire Ballroom (Level 2)

Virtual Room: AHFE Posters

- B1. Application of functional resonance analysis method and system-theoretic accident model and processes approaches combined with other methods
Alimeh Mofidi Naeini, Sylvie Nadeau, Canada
- B2. Social representations of physical disability in professional environment. Example of disabled workers practicing high-level sport
Bernardeau Moreau Denis, France
- B3. Transparency assessment of automated vehicle HMI: Comparison between simulator and online studies
Yuan-cheng Liu, Nikol Figalová, Jürgen Pichen, Klaus Bengler, Germany
- B4. Comparison of observational ergonomic methods: A case study in the automotive industry
André Cardoso, Hatice K. Gonçalves, Guilherme Deola Borges, Ana Pombeiro, Ana Colim, Paula Carneiro, Pedro Arezes, Portugal
- B5. Risk of COVID-19 infection and prevention and control strategies in universities
Hang Shang, Wenbo Liu, Yuhuan Li, China
- B6. Development of a virtual assistant Chatbot based on Artificial Intelligence to control and supervise a process of 4 tanks which are interconnected
Sandro Gonzalez-Gonzalez, Luis Serpa-Andrade, Ecuador
- B7. Kansei analysis of liquid laundry detergent bottle's shape and packages design
Namgyu Kang, Nishiya Kaito, Japan
- B8. Strategy of interactive information visualization publishing in online database under the background of design thinking
Fang Li, Ding Zhou, China
- B9. The application of visual translation in synaesthesia to product design
Xiaodong Gong, Yue Ji, China
- B10. The design method of alarm information manifestation based on visual attention
Xiaodong Gong, Yushun Liu, Qian Gong, Wenhan Liu, China
- B11. Spatial elements of middle school gymnasium based on youth visual perception
Taiyang Wang, Xianqi Zeng, Peng Luo, China
- B12. Adapting anthropometric research in a pandemic: A case study
Amelia Hubbard, Bruce Bradtmiller, USA
- B13. User interface evaluation of wireless ultrasound solution for point-of-care applications
Yourim Kim, Sangeun Park, Wonseuk Jang, South Korea
- B14. An installation on immersive dining of image and food
Jia-Ming Day, Tzu-ching Huang, Lien-cheng Wang, Wei-chih Lin, Shu-yu Lin, Taiwan
- B15. Influence of automated cars on human drivers' behaviour - Social learning in mixed traffic
Helene Walter, Germany
- B16. User preference for augmented reality concepts for pedestrian-vehicle interactions: An online study
Wilbert Tabone, Riender Happee, Jorge Garcia De Pedro, Yee Mun Lee, Maria Luce Lupetti, Natasha Merat, Joost de Winter, Netherlands
- B17. Exploring quantitative indicators for monitoring resilient team cognition
Saki Namura, Taro Kanno, Kazuo Furuta, Yingting Chen, Daichi Mitshhashi, Japan
- B18. Manipulating workload in simulated flight: A comparison of standard and individualized approaches
Amanda Kelley, Katie Feltman, USA
- B19. Construction of the localized knowledge production model based on social design method in the post-epidemic era
Jiaqi Qian, China
- B20. Behavioral and systems change in nursing homes with an integrated training intervention
Giulia Lefosse, Tommaso Bellandi, Italy
- B21. The influence of mobilization exercises on mobility and back pain in office workers
Patrycja Łach, Joanna Mazur-Różycka, Poland
- B22. Physiological tremor as a result of tiredness related to manual activities requiring precision
Joanna Mazur-Różycka, Patrycja Łach, Poland
- B23. Three-degree graph and design of an optimal routing algorithm
Bo-ok Seong, Jimin Ahn, Myeongjun Son, Hyeongok Lee, South Korea

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, WEDNESDAY, JULY 27

Time: 9:00-17:00

Room: Empire Ballroom (Level 2)

Virtual Room: AHFE Posters

- C1. Evaluating factors that impact situation awareness and takeover responses during cyberattacks on automated vehicles
Somayeh Aliebrahimi, Erika Miller, USA
- C2. Evaluating the efficacy of a virtual reality infused child-pedestrian training
Taufiq Rahman, Shuchisnigdha Deb, USA
- C3. Influence of environmental and ergonomic factors on mental workload during simulated MV-22 Osprey Casualty Evacuation (CASEVAC) medical scenarios
Rebecca Weller, Doug Jones, Becki McClintock, Carlos Alvarez, Doug Lowe, Josiah Hearne, Grace Montes, Mikye Parks, Jordan Lucas, Johnathan Swenson, Lee Sciarini, USA
- C4. User experiences and expectations towards automation and safety in air traffic control
Åsa Svensson, Maximilian Peukert, Sweden
- C5. Does multimodal interfaces affect mode awareness in partially automated vehicles?
Noé Monsaigneon, Loïc Caroux, Céline Lemerrier, Sabine Langlois, France
- C6. Evidence-based decision making using visual analytics for a local food bank
Steven Jiang, Kehinde Odubela, Lauren Davis, USA
- C7. Automated real time stress detection at the workplace using video monitoring
Simão Ferreira, Matilde Rodrigues, Nuno Rocha, Portugal
- C8. Working capacity and general functional state during a 20-day Arctic expedition (on the example of the Arctic Floating University)
Yana Korneeva, Mariya Tunkina, Natalia Simonova, Anna Trofimova, Russia
- C9. Developing a computer-vision model to estimate anatomical joint coordinates during manual lifting tasks
Chih-Yu Hsiao, Chien-chi Chang, Ting-yu Chen, Yi-ting Lin, Taiwan
- C10. Pattern noise prediction using artificial neural network
Sang Kwon Lee, South Korea
- C11. AI-powered misinformation labeler: Designing the interface and assessing its effectiveness
Morgan Edwards, Jeremiah Still, USA
- C12. The role of individual differences in operator state monitoring
Katie Feltman, Amanda Kelley, USA
- C13. Designing and implementing simulation exercises for state sanitary and epidemiological service
Robert Waszkowski, Tadeusz Nowicki, Agata Chodowska Wasilewska, Poland
- C14. Low-code development platform for business process automation: Aurea BPM
Robert Waszkowski, Poland
- C15. Comparing cybersickness in two levels of virtuality in a mixed reality head-mounted display
Ramy Kirolos, Wasim Merchant, Tania Randall, Canada
- C16. Investigating the impact of sleep deprivation on visual information intake during maritime navigation
Claire Giot, Nicolas Bessot, Damien Davenne, France
- C17. Design and usability of a mobile application user interface to control children's power chairs
Maxwell Sage, Charlie Hahm, Josiah Hasegawa, Conner Ozatar, USA
- C18. Posture analysis of mass rapid transit (MRT) passengers using the REBA Method in Jakarta, Indonesia
Dessy Laksyana Utami, Aisy Luthfianisa Putri, Indonesia
- C19. Design of ergonomic emergency car toilet seats as a solution to severe traffic in Jakarta, Indonesia
Dessy Laksyana Utami, Adi Heru Sutomo, Ketut Ima Ismara, Aisy Luthfianisa Putri, Indonesia
- C20. The relationship between work posture and low back pain (LBP) among the workers weaving sarong in Wanarejan Utara Indonesia
Dessy Laksyana Utami, Adi Heru Sutomo, Indonesia
- C21. AlphaAid
Emily Hacker, USA
- C22. Human factors and work-related hazards in installing and maintaining solar-powered products amongst technicians
Renting Tan, Amirmasoud Momenipour, USA
- C23. Work engagement and health promotion for revitalizing nursing organization
Motoki Mizuno, Yuki Mizuno, Yumi Arai, Yasuyuki Hochi, Takumi Iwaasa, Kentaro Inaba, Emiko Togashi, Yasuyuki Yamada, Japan

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, WEDNESDAY, JULY 27

Time: 9:00-17:00

Room: Empire Ballroom (Level 2)

Virtual Room: AHFE Posters

- D1. Using hierarchical clustering and data mining tools to predict secondary school performance
Ranella Howard, Demetria White, Tor Kwembe, USA
- D2. User-friendly embedding of vehicle fast charging in primary vehicle use with persona models
Lampros Tsolakidis, Alexander Mueller, Simon Buck, Fabian Schmiel, Germany
- D3. Social robots and performance errors: Level of empathy distinguishes changes in trust
Nina Rothstein, Ewart de Visser, Yigit Topoglu, Shawn Joshi, John Kounios, Frank Krueger, Hasan Ayaz, USA
- D4. Changes in lactate after the completion of repetitive cycle exercises with and without compression arm sleeves
Amber Rohrer, Daniel Conde, Gabriel Ibarra-Mejia, Jennica Juarez, USA
- D5. Cognitive positioning technologies for IoT network devices
Andriy Dudnik, Ivan Bakhov, Olha Cholyshkina, Andriy Fesenko, Olexander Grinenko, Volodymyr Brodkevych, Serhii Zybin, Ukraine
- D6. A multimodal interaction experience design approach for negative emotional driving situations
Ting Wei, Weiwei Wang, China
- D7. Where does the Mukbang boom go? Research based on use and gratifications
Shuangxu Li, Zhaolin Lu, Jingwen Liang, Jingjing Li, Jianan Xu, China
- D8. Development of a fundamental and operational marksmanship score based on expert and Novice Marksmanship data
Stephanie Brown, K. Blake Mitchell, USA
- D9. A concept for three-dimensional proxemics in human-robot collaboration
Marc Frychel, Sebastian Hoose, Jana Jost, Jens Gerken, Thomas Kirks, Germany
- D10. Kinematic analysis of working scenarios and upper crossed syndrome for office workers
YuChi Chen, Yi-wen Huang, Shu-Zon Lou, Yung-Ping Liu, Taiwan
- D11. Relationship between activation of prefrontal cortex and testosterone in N-back task
Aoki Makiko, Satoshi Suzuki, Ryouma Anzai, Japan
- D12. Investigation of the riding performance for an isometric steering system with two platform concepts
Arthur Werle, Frank Diermeyer, Germany
- D13. Detecting driving distraction: A neural network model using wearable devices
Annebella Tsz Ho Choi, Duoduo Hu, Zijian Ling, Lin Yong, Jibo He, China
- D14. Consumer expectations for owner's manuals - safety information and online availability
Steven Hall, Judith Isaacson, Raina Shah, Anne Ward, USA
- D15. Analysis of thermoregulatory behavior in laborers during the summer heat wave
Su-Young Son, South Korea
- D16. Cold water exposure in fishing & aquaculture industries: An in-depth exploration
Emily Walsh, Heather Carnahan, Noel Milley, Canada
- D17. Bone break hot debriefing tool: An approach to mitigating the impact of second victim
Tasha Flicek, Amberly Hess, Kelly Derby, Meshach Phillips, Sara Ayres, Jason Carney, Anthony Voll, Renaldo Blocker, USA
- D18. Home-at-work and occupational risk intervention during the COVID-19 pandemic
Liliana Vargas Puentes, Camilo Jose Peña Lapeira, Colombia
- D19. Strategic adaptive engineering
Nicholas Sarantopoulos, Martin Stein, USA
- D20. The Savior Band design as a traveling tool to maintain comfortable human posture
Dessy Laksyana Utami, Deva Arianti Herawati, Indonesia
- D21. Analysis of the behavior of elderly consumers as recipients of innovation
Daria Wrukowska, Poland
- D22. Redesigning the ergonomic pen tablet with wrist rest to prevent carpal tunnel syndrome among animators in creative village Jakarta Indonesia
Dessy Laksyana Utami, Istafti Qolbakha, Indonesia
- D23. Qualitative changes in communication and teamwork of nursing organizations in the Coronavirus pandemic
Yuki Mizuno, Motoki Mizuno, Yasuyuki Yamada, Yasuyuki Hochi, Takumi Iwaasa, Emiko Togashi, Yumi Arai, Kentaro Inaba, Hidenori Hayashi, Jyunko Sakurai, Japan

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, THURSDAY, JULY 28

Time: 9:00-17:00

Room: Empire Ballroom (Level 2)

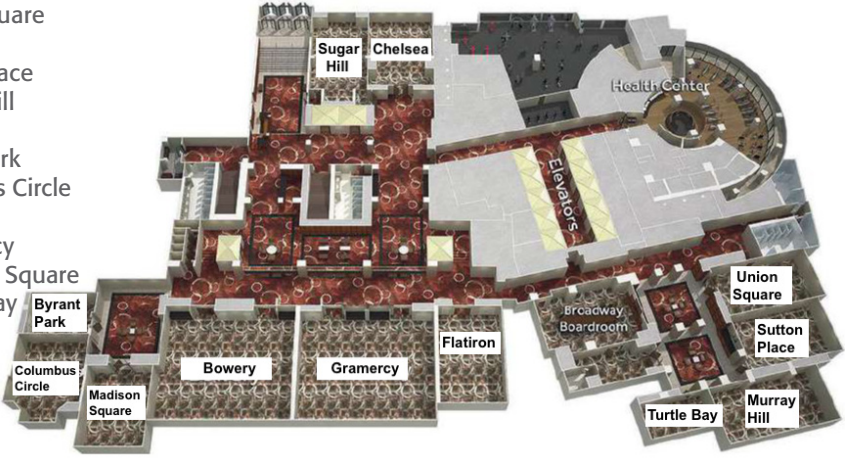
Virtual Room: AHFE Posters

- E1. An investigation into design engineering aspects of a shared autonomous micro vehicle concept
Devina Manoeva, Sigrid Salzer, Stephan Schmidt, Germany
- E2. Non-experts' perceptions regarding the severity of different cyber-attack consequences: Implications for designing warning messages and modeling threats
Natalie Lodinger, Keith Jones, Akbar Siami-Namin, Ben Widlus, USA
- E3. Effect of visibility of auditory stimulus location on ventriloquism effect using AR-head-mounted display
Kaoru Kawai, Kenji Muto, Japan
- E4. Design and implementation of startup consultancy certificate programs – the Decalysis Concept and XP-Consultancy Questionnaire
Helmut Wittenzellner, Germany
- E5. Detecting passive fatigue driving using eye movement data and wearable vital signs
Ko-Hsuan Ma, Zixu Li, Jibo He, China
- E6. The effect of anthropomorphic cues and attitudes toward artificial intelligence on the AI speaker based voice agent usability
Young Jin Shin, South Korea
- E7. Simple is the Best! Visual complexity of head-up display in automobiles modulates attentional tunneling and driving performance
Jieun Lee, Nahyun Lee, Jangkyu Ju, Jihwan Chae, Jiyeon Park, Hoe Sung Ryu, South Korea
- E8. Comparison and evaluation of visual and auditory signals according to different levels of information for multimodal eHMI design
Dokshin Lim, Seong Geun Ahn, South Korea
- E9. Musculoskeletal risk level among health professionals of a health entity
Wilder Hernández, Sandra Bibiana Avendaño Avendaño, Luis Gabriel Gutierrez, Colombia
- E10. Types of consumed drinks at work during summer and winter seasons among foresters: A pilot study
Joanna Orysiak, Magdalena Młynarczyk, Piotr Prus, Poland
- E11. Empowering individuals with limited joint mobility: An embedded interdisciplinary program between occupational therapy & industrial design
Kyndra Adams, Andrew Berger, Tod Corlett, Eric Schneider, Kimberly S. Mollo, USA
- E12. Operator function model to analyze ship accidents related to navigation aids
Seung-Kweon Hong, South Korea
- E13. Safety management in times of crisis: Status-analysis from German intensive care units
Michelle Schmidt, Sophie Lambert, Sebastian Sieberichs, Martin Klasen, Saša Sopka, Germany
- E14. Our social ecosystem and the associations with neural communication
Angela Jeter, Jessica Villarreal, USA
- E15. Improving the cognitive fidelity of agents in wargaming platforms
Christopher Myers, Nicholas Hanlon, Brian Fuesz, USA
- E16. Effects of COVID-19 pandemic on use and perceptions of shared micro-mobility
Shiva Pourfalamatoun, Erika Miller, USA
- E17. Review of existing sensors for tracking the activities of daily living
Hyung Nam Kim, USA
- E18. Luxury brands in the circular economy and implications in their value chain
Maria Inês Sousa, Olga Brites Pereira, João Alberto Batista Barata, Portugal
- E19. Augmenting submariner cognitive performance & reducing error in demanding environments: Decision aids, interfaces, state indicators, & interventions
Ben Lawson, Jeffrey Bolkhovsky, Sarah Chabal, Stephanie Karch, USA
- E20. Psychological safety of small and medium enterprises in local cities in Japan: A preliminary study
Kentaro Inaba, Motoki Mizuno, Japan
- E21. Smart voice user interface designs for users with visual disabilities
Hyung Nam Kim, Boubacar Oumarou, USA
- E22. Ergonomic improvement of medical hand tools based on physical user interface
Seung-min Mo, South Korea
- E23. Measuring workload on family medicine health professionals during COVID-19
Roncardy Mondesir, Hayley Dykhoff, Yaqoub Yusuf, Robert Peck, Steven Rosas, Heather Logslett, Kathleen Wittig, Renaldo Blocker, USA
- E24. Intelligent tutoring systems may improve the effectiveness of driver training programs
Siby Samuel, Canada
- E25. Operator vigilance in flight environment: A human-in-the-loop simulator experiment
Tetsuya Sato, Yusuke Yamani, Samia Islam, USA

Conference Layout

ROOMS ON LEVEL 1

- AHFE 1: Chelsea
- AHFE 2: Union Square
- AHFE 3: Sugar Hill
- AHFE 4: Sutton Place
- AHFE 5: Murray Hill
- AHFE 6: Bowery
- AHFE 7: Bryant Park
- AHFE 8: Columbus Circle
- AHFE 9: Flatiron
- AHFE 10: Gramercy
- AHFE 11: Madison Square
- AHFE 12: Turtle Bay

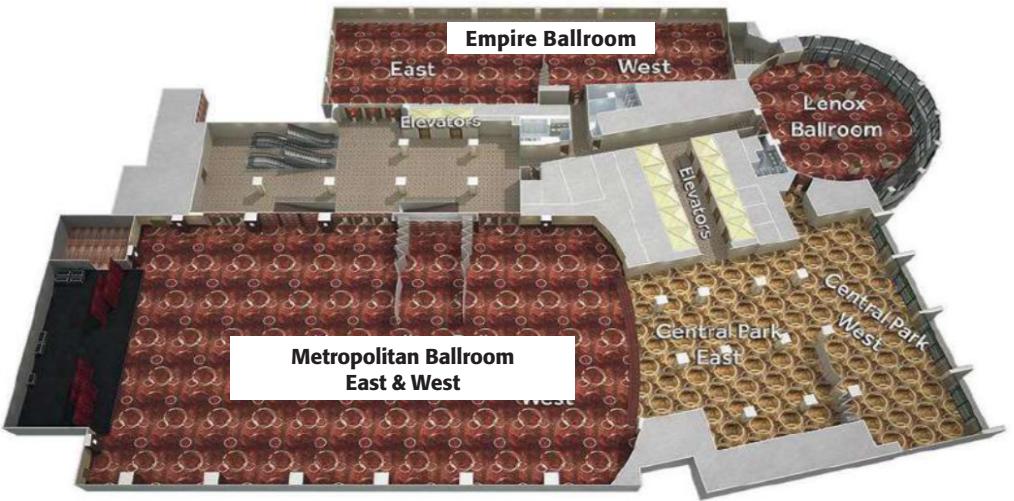


ROOMS ON LEVEL 2

Metropolitan East: July 25, 2022: Conference Opening Session



Metropolitan West: July 25, 2022: Conference Reception

Empire Ballroom: July 26-27-28, 2022: Exhibition Area, Poster Sessions Area and Coffee Breaks










ROOMS ON LEVEL 5

- AHFE 13: Madison 1
- AHFE 14: Madison 2
- AHFE 15: Madison 3

MADISON SUITE 6	MADISON SUITE 5	MADISON SUITE 4	MADISON SUITE 3	MADISON SUITE 2	MADISON SUITE 1
PARK SUITE 5	PARK SUITE 4	PARK SUITE 3	PARK SUITE 2	PARK SUITE 1	 

Exhibits

BOOTHS	COMPANY LOGO	COMPANY NAME AND WEB SITE
101		3dMD www.3dmd.com
102		Smart Eye AB www.smarteye.se
103		Noraxon USA www.noraxon.com
104		Instituto de Biomecánica de Valencia (IBV), Spain www.ibv.org
105		TEA Ergo Inc hwww.teaergo.com
106		AHFE International (Open Access Journal) www.proceedings.ahfe.org
107		AHFE International Conference July 20-24, 2023 San Francisco, California, USA www.ahfe.org

Conference Organization

GENERAL INQUIRIES:

admin@ahfe.org

EXHIBITS AND SPONSORSHIPS:

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TECHNICAL SUPPORT

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Access to the Conference Scientific and Technical Program will be available through the AHFE Submission System

Detailed access for all sessions will be sent to Registered Participants



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