AHFE International
Applied Human Factors and Ergonomics Conference
2024
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2024 AHFE International

15th International Conference on Applied Human Factors and Ergonomics (AHFE 2024) and the Affiliated Conferences

Final Program

24-27 July, 2024

Nice, France

WWW.AHFE.ORG

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CONFERENCE EXHIBITION

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101	Noldus
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105	TEA
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Opening Plenary Session and Keynote Address

9:00-10:00 (CEST), Wednesday July 24, 2024
Université Nice Sophia-Antipolis - St Jean d'Angély
Address: 24 Avenue des Diables Bleus, 06300 Nice, France

INTRODUCTORY REMARKS

Waldemar Karwowski - General Conference Chair

Innovations in Healthcare Technology: Digital Biomarkers of Teamwork in the Operating Room

Dr. Roger Daglius Dias
Harvard Medical School, USA

Dr. Dias, MD, PhD, MBA is a physician-scientist and his research focuses on the application of emerging technologies, such as artificial intelligence, machine learning, digital biomarkers and extended reality to measure and enhance clinicians' performance and improve patient safety in a variety of fields, including emergency medicine, critical care, surgery, space medicine and military. Dr. Dias' research is funded by the NIH, DoD, NASA, NSF and AHRQ. He was trained in Internal Medicine and Emergency Medicine at the University of Sao Paulo Medical School, in Brazil and earned a Ph.D. in Medical Sciences and an M.B.A in Hospital and Health Systems Administration. He completed a postdoctoral research fellowship at Harvard Medical School in Human Factors and Medical Simulation. Currently, he is an Assistant Professor of Emergency Medicine at Harvard Medical School and the Director of Research and Innovation at the STRATUS Center for Medical Simulation | Mass General Brigham (MGB), in Boston, MA, where he leads the Human Factors and Cognitive Engineering Lab.

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: Wednesday July 24 • 18:00-22:00 (CEST)
Hyatt Regency Nice Palais de la Méditerranée
Address: 13 Prom. des Anglais, 06000 Nice, France

(Badge Required)
Dress is business casual

Tutorials

Conference program schedule is listed in Central European Summer Time (CEST)

Pre-conference Tutorials

The AHFE 2024 tutorial program will be offered in Hybrid format (Live onsite, Online and Recorded format) on July 22-23, 2024.

JULY 22, 2024

TUTORIAL GROUP A • 9:00 - 12:30 (CEST)		Room
T-1	Next Generation Simulation and Training using Virtual Reality and Augmented Reality Presenter: Mahdi Ebnali, Harvard University	AHFE 1 (Recorded Tutorial)
T-2	Ubiquitous Health Monitoring and Assessment of Human Psychophysiology Using Remote Measurement and AI Presenter: Sarkar, Virginia Tech Transportation	AHFE 2 (Live Tutorial Online)
T-3	Fundamentals in Data Visualization and Dashboard Design Presenter: Abbas Moallem, San Jose State University	AHFE 3 (Live Tutorial Onsite)
T-4	Eye Tracking Methods and Applications Presenter: Jan Watson, Drexel University	AHFE 4 (Recorded Tutorial)

JULY 22, 2024

TUTORIAL GROUP B • 13:00 - 16:30 (CEST)		Room
T-5	Great UX Design: Twelve steps to a great user experience Presenter: Everett McKay, UX Design Edge	AHFE 5 (Live Tutorial Onsite)
T-6	Human Factors and Cybersecurity Presenter: Abbas Moallem, San Jose State University	AHFE 6 (Live Tutorial Onsite)
T-7	Towards Data Science: Modelling Techniques in Predictive Analytics with Python Presenter: Javed Anjum Sheikh, Minhaj University Lahore	AHFE 7 (Live Tutorial Onsite)
T-9	Cognitive Neuroscience for the Human Factors Practitioner and Fundamentals of Brain Imaging Presenter: Adrian Curtin, Drexel University	AHFE 8 (Recorded Tutorial)

JULY 23, 2024

TUTORIAL GROUP C • 9:00 - 12:30 (CEST)		Room
T-10	Interactive Strategies: Employing Serious Games for Secure and Sustainable Socio-Technical Cybersecurity Systems Design Presenter: Stewart Kowalski, Visiting Professor, Research Institutes of Sweden	AHFE 1 (Live Tutorial Onsite)
T-13	Optimizing UX and UI with Ergonomics-centric Design Presenter: Javed Anjum Sheikh, University of Minhaj	AHFE 2 (Live Tutorial Onsite)
T-14	Effective Design Reviews: How to Give and Receive Meaningful, Actionable Design Feedback Presenter: Everett McKay, UX Design Edge	AHFE 3 (Live Tutorial Onsite)

Conference Tracks

Track	Acronym
Human Factors in Accessibility, Assistive Technology and Digital Environments	AATDE
Human Factors in Artificial Intelligence and Social Computing	AISC
Affective and Pleasurable Design	APD
Transportation: Aviation and Space	AVI
Cognitive Computing and Internet of Things (IoT)	CCIoT
Creativity, Innovation and Entrepreneurship	CIE
Neuroergonomics & Cognitive Engineering	CN
Human Factors in Cybersecurity	CYBER
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
Global Issues Challenge: Challenges in AI at the Human Level	GIC
Human Dynamics and Design for the Development of Contemporary Societies	HDCS
Human Factors in Product Evaluation and Quality	PEQ
Human Error, Reliability, Resilience, and Performance	HERRP
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 Robots, Drones and Unmanned Systems	HFRDUS
Human Factors and Simulation	HFSIM
Human Factors, Software and Systems Engineering	HFSSE
Human Factors and Wearable Technologies	HFWT
Health Informatics and Biomedical Engineering Applications	HIBEA
The Human Side of Service Engineering	HSSE
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 and Rail	RR
Sustainable Built Environment	SBE
Human Factors in Sports, Injury Prevention and Outdoor Recreation	SIPOR
Safety Management and Human Factors	SMHF
Social & Occupational Ergonomics	SOE
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 Central European Summer Time (CEST)

#	Session Title	Track	Room
	Refreshments: 10:00-10:30 • Location: Lobby Level		
	Wednesday, July 24, 2024 - Session Time: 10:30-12:00 (page 10)		
1	Sounding Better: Alarms and Soundscapes in Healthcare	EHMD	AHFE 1
2	Design Strategy and User Experience	UUE	AHFE 2
3	Playing with Cyber Security: Using Games to Understand the Issues	CYBER	AHFE 3
4	Design and Evaluation for Safety	ED	AHFE 4
5	Autonomous and Automated Driving I	RR	AHFE 5
6	Ecosystem-Based Data Economy	HFBMS	AHFE 6
7	Design for All and Cultural Heritage	DI	AHFE 7
8	Systems Engineering Applications	HFSSE	AHFE 8
9	Human Performance and Reliability Analysis	HERRP	AHFE 9
10	SIG: Human Factors in Naval Aviation Training: The Intersection of Automation and Simulation	HFSIM	AHFE 10
11	Industry 4.0 and Intelligent Manufacturing Technologies I	MFG	AHFE 11
	Refreshments: 12:00-12:30 • Location Lobby Level		
	Wednesday, July 24, 2024 - Session Time: 12:30-14:00 (page 15)		
12	Sensory Engineering and Emotion I	APD	AHFE 1
13	Human Digital Twins Across Domains and Perspectives	DHMAO	AHFE 2
14	3D Prototyping and Additive Manufacturing	MFG	AHFE 3
15	Current Investigative Processes and Future Visions with Artificial Intelligence	SMHF	AHFE 4
16	Workspace Design and Safety	SYSI	AHFE 5
17	Human Factors in Robotics Research: Convergent Approaches	HFRDUS	AHFE 6
18	Innovations in Digital Technology for Cultural Heritage in Communication	HFCD	AHFE 7
19	Human-Centered Metaverse and Digital Environments	AATDE	AHFE 8
20	Explorations in Design Education	IPID	AHFE 9
21	Approaches to Aging Workforce and Special Needs	HFAS	AHFE 10
22	Human Factors for Apparel and Textile Engineering: Wearability and Function	HFATE	AHFE 11

Conference at a Glance

#	Session Title	Track	Room
	Thursday, July 25, 2024 - Session Time: 8:30-10:00 (page 21)		
23	Evaluation and Assessment in Maritime Training and Transportation	MAR	AHFE 1
24	Cognitive Computing on Psychophysiological Strain of Action Forces	CCIoT	AHFE 2
25	Electric and Automated Vehicle Driving: Performance and Requirements	RR	AHFE 3
26	Usability Evaluation and Emotional Design	UUE	AHFE 4
27	Intelligent Teams and Team Cohesion	HFBMS	AHFE 5
28	Human Factors in Virtual Environments I	HFGD	AHFE 6
29	Building Information Modeling and Sustainable Construction Industry	SBE	AHFE 7
30	HSSE Plenary	HSSE	AHFE 8
31	Artificial Intelligence: The Human-Machine Interaction	GIC	AHFE 9
32	Neuroscience of Creativity	APD	AHFE 10
33	Ergonomics in Architecture	SUPI	AHFE 11
	Refreshments: 10:00-10:30 • Location Lobby Level		
	Thursday, July 25, 2024 - Session Time: 10:30-12:00 (page 26)		
34	Physical Ergonomic Evaluation I	PEHF	AHFE 1
35	Driver Performance, Behavior and Physiology I	RR	AHFE 2
36	Decision Support in Sociotechnical Systems	SYSI	AHFE 3
37	Human Autonomy Interactions in Simulation Supported Evaluation	HFSIM	AHFE 4
38	Enhancing Healthcare Experiences: A Focus on User-Centred Medical Device Design	HIBEA	AHFE 5
39	Interaction with Emerging Technologies I	HDCS	AHFE 6
40	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies	HSSE	AHFE 7
41	Optimizing Learning and Education	TELS	AHFE 8
42	Air Traffic Controllers and Flight Deck	AVI	AHFE 9
43	Toward Adaptive Automation: From Affective Computing to Tailored Decision-Making Support	CN	AHFE 10
44	Wearable Technologies and Sensors	HFWT	AHFE 11
	Enjoy lunch at the restaurant of your choice • 12:00-13:30		
	Thursday, July 25, 2024 - Session Time: 13:30-14:30 (page 32)		
45	Cross-Cultural Decision Making	SOE	AHFE 1
46	Design, Co-Creation and Innovation I	CIE	AHFE 2
47	Human Factors in Game Design	HFGD	AHFE 3
48	Public Transportation and Safety I	RR	AHFE 4
49	Artificial Intelligence: Utilization and Innovations	AISC	AHFE 5
50	Human Factors for Apparel and Textile Engineering: Wearability and Fashion	HFATE	AHFE 6
51	Transformative Governance and Technological Innovation Advancing Social Impact	HFBMS	AHFE 7
52	User Experience and Kansei Research and Product Development Methodologies I	KE	AHFE 8
53	Innovations in Patient-Centered Care	EHMD	AHFE 9
54	Intelligent Applications with IoT in Digital Health	CCIoT	AHFE 10
55	Digital Accessible Applications	AATDE	AHFE 11

Conference program schedule is listed in Central European Summer Time (CEST)

#	Session Title	Track	Room
	Thursday, July 25, 2024 - Session Time: 14:30-16:00 (page 37)		
56	Physical Ergonomic Risk Assessment: Methods and Techniques	PEHF	AHFE 1
57	Social and Occupational Risk Assessment	SOE	AHFE 2
58	Ergonomics in Urban Planning	SUPI	AHFE 3
59	Human-Centered Design and Training for Maritime Transportation	MAR	AHFE 4
60	Navigating the Cybersecurity Landscape in Healthcare	CYBER	AHFE 5
61	Interdisciplinary Design Process	IPID	AHFE 6
62	AI and Creativity in Mixed Expanding Service Ecosystems	HSSE	AHFE 7
63	Innovations in Medical Technology and Design	EHMD	AHFE 8
64	Risk Management and Analysis	SMHF	AHFE 9
65	Human Factors in Automotive Engineering and Mobility Services	RR	AHFE 10
66	Design Evaluation and User Perspective	UUE	AHFE 11
	Refreshments: 16:00-16:30 • Location Lobby Level		
	Friday, July 26, 2024 - Session Time: 8:30-10:00 (page 43)		
67	Increasing Innovation Capability Between Engineering and Creative Domains	HFBMS	AHFE 1
68	Human Factors in Robotics Research: Human-Robot Research in Different Contexts	HFRDUS	AHFE 2
69	Panel: Training and Human Performance Issues in Human-Non-Human Teaming	HFSIM	AHFE 3
70	Interdisciplinary Design Practice	IPID	AHFE 4
71	Design, Co-Creation and Innovation II	CIE	AHFE 5
72	Body Intelligence	APD	AHFE 6
73	Training Technologies and Learning Strategies I	TELS	AHFE 7
74	Designing Future Service Business: Using Data to Enable New Forms of Value Creation	HSSE	AHFE 8
75	Human Factors Challenges in AI	GIC	AHFE 9
76	Design Applications and User Experience	UUE	AHFE 10
77	Cybersecurity and Organizational Resilience and Agent Based Modeling	CYBER	AHFE 11
	Refreshments: 10:00-10:30 • Location Lobby Level		
	Friday, July 26, 2024 - Session Time: 10:30-12:00 (page 47)		
78	Individualization of Services Using Generative AI	HSSE	AHFE 1
79	Design for Inclusion and Ageing Society	DI	AHFE 2
80	Wearable Technologies: Virtual Reality and Exoskeletons	HFWT	AHFE 3
81	Sustainable Built Environment	SBE	AHFE 4
82	Design and Evaluation	HDCS	AHFE 5
83	Aviation and Aerospace: Challenges and Applications	AVI	AHFE 6
84	Systemic Structural Activity Theory	CN	AHFE 7

Conference program schedule is listed in Central European Summer Time (CEST)

#	Session Title	Track	Room
	Friday, July 26, 2024 - Session Time: 10:30-12:00 (page 47)		
85	Driver Performance, Behavior and Physiology II	RR	AHFE 8
86	Multimodal Human Factors Research: Usability and User Interface Design	UUE	AHFE 9
87	Challenges on Implementing Human-Related Artificial Intelligence in Operation Management	HFBMS	AHFE 10
88	New Methods and Technologies for Human-Robot Interaction in Sociotechnical Work Systems	MFG	AHFE 11
	Enjoy lunch at the restaurant of your choice 12:00-13:30		
	Friday, July 26, 2024 - Session Time: 13:30-14:30 (page 53)		
89	Training Technologies and Learning Strategies II	TELS	AHFE 1
90	Biomedical Engineering - Data Utilization and Bio-Material Applications	HIBEA	AHFE 2
91	Human Factors in Artificial Intelligence and Social Computing I	AISC	AHFE 3
92	Technology and Design in Elderly Care	HFAS	AHFE 4
93	Sensory Engineering and Emotion II	APD	AHFE 5
94	Industrial Cognitive Ergonomics and Engineering Psychology	CN	AHFE 6
95	Design Philosophies and Ideas	ED	AHFE 7
96	Industry and Academia Collaborations in Service Design, Ethics, and User Experience Design Thinking	HSSE	AHFE 8
97	Innovative Agonology – Applied Science About Complementary Strengthening of Health and Survival	SIPOR	AHFE 9
98	Healthcare and Sports Applications Design	SYSI	AHFE 10
99	Autonomous and Automated Driving II	RR	AHFE 11
	Friday, July 26, 2024 - Session Time: 14:30-16:00 (page 58)		
100	Human Factors in Virtual Environments II	HFGD	AHFE 1
101	Today's Halcyon: Discourse on the Communication of Design Through the Lens of Human Values	HFCD	AHFE 2
102	Interaction with Emerging Technologies II	HDCS	AHFE 3
103	Product Evaluation, Emotional Design and Artificial Intelligence	APD/ PEQ	AHFE 4
104	Human Factors in Medication Management and Clinical Decision Making	EHMD	AHFE 5
105	Manufacturing, Process Control and Human-Robot Collaborative	MFG	AHFE 6
106	Physical Workload Assessment and Biomechanical Analysis	PEHF	AHFE 7
107	Public Transportation and Safety II	RR	AHFE 8
108	HMI Design and Studies	SYSI	AHFE 9
109	Interdisciplinary Design Research	IPID	AHFE 10
110	Accessibility, Assistive Technology and Digital Environments	AATDE	AHFE 11
	Refreshments: 16:00-16:30 • Location Lobby Level		

Conference program schedule is listed in Central European Summer Time (CEST)

#	Session Title	Track	Room
	Saturday, July 27, 2024 - Session Time: 8:30-10:00 (page 64)		
111	Design Considerations for Effective User Interactions	CN	AHFE 1
112	Ergonomics in Design: Learning and Teaching	ED	AHFE 2
113	Safety and Human Factors	SMHF	AHFE 3
114	Rail and Road Comfort and Operational Considerations	RR	AHFE 4
115	Digital Dynamics in the Workplace, Exploring AI Integration, Flexible Work Models, and Participatory Design	SYSI	AHFE 5
116	Implementation of Artificial Intelligence and Digital Transformation in Company Training	HFBMS	AHFE 6
117	Simulation Workload, Usability, Acceptance and Engagement	HFSIM	AHFE 7
118	From Data to Implementation - Leveraging Health Informatics to Improve Patient Care	HIBEA	AHFE 8
119	Human Factors in Artificial Intelligence and Social Computing II	AISC	AHFE 9
120	Driver Performance, Behavior and Physiology III	RR	AHFE 10
121	Performance, Risk, and Wellness in Sports	SIPOR	AHFE 11
	Refreshments: 10:00-10:30 • Location Lobby Level		
	Saturday, July 27, 2024 - Session Time: 10:30-12:00 (page 69)		
122	Putting the Human First: Balancing Benefits and Risks in the Digital Age	HSSE	AHFE 1
123	Design for Inclusion and Visual Design	DI	AHFE 2
124	Technologies for Smart Devices: Performance and Evaluation	HFWT	AHFE 3
125	Technological Solutions for Rehabilitation and Healthcare Improvement	EHMD	AHFE 4
126	Physical Ergonomic Evaluation II	PEHF	AHFE 5
127	UX and Usability Evaluation for Product and Service Design	UUE	AHFE 6
128	Innovative Approaches and Applications in Work Optimization and Human-Machine Interaction	SYSI	AHFE 7
129	Methodology and Applications of Complex Systems in Social Sciences	HFSIM	AHFE 8
130	Industry 4.0 and Intelligent Manufacturing Technologies II	MFG	AHFE 9
131	User Experience and Kansei Research and Product Development Methodologies II	KE	AHFE 10
132	Neuroergonomics: Neural Feature Extraction and Use	CN	AHFE 11
	12:00 - 13:00 • 12:00-13:30 Enjoy lunch at the restaurant of your choice		

Conference program schedule is listed in Central European Summer Time (CEST)

#	Session Title	Track	Room
	Saturday, July 27, 2024 - Session Time: 13:30-14:30 (page 75)		
133	Democratic Decision Support in Industrial Scenarios	CCIoT	AHFE 1
134	Social and Organizational Factors	SOE	AHFE 2
135	Artificial Intelligence, Mentoring and Managing Diversity in an Organization	HFBMS	AHFE 3
136	Research for Digital Environments and Game Design	HFGD	AHFE 4
137	HSSE Best Paper and Wrap Up	HSSE	AHFE 5
138	Innovations in Assistive Devices and Aging Well	HFAS	AHFE 6
139	Artificial Intelligence - Machine Learning and Technology Utilization	GIC	AHFE 7
	Saturday, July 27, 2024 - Session Time: 14:30-16:00 (page 78)		
144	Design for Health, Comfort and Quality	ED	AHFE 1
145	Digital Human Modeling and Applied Optimization	DHMAO	AHFE 2
146	Software Engineering Applications	HFSSE	AHFE 3
147	Virtual Reality, Digital Solutions and User Experience	UUE	AHFE 4
148	Training and Assessment: Applications for Enhanced Learning	TELS	AHFE 5
149	Human Factors in Robotics Research: Autonomy and Trust	HFRDUS	AHFE 6
150	Human Factors in Next-Generation (Next-Gen) Cybersecurity	CYBER	AHFE 7
151	Human Error and Performance Analysis	HERRP	AHFE 8
152	Human Factors in Energy: Offshore Drilling and Control Room Design	ENERGY	AHFE 9
153	Design, Co-Creation and Innovation III	CIE	AHFE 10
	Refreshments: 16:00-16:30 • Location Lobby Level		

CONFERENCE ORGANIZATION:

General Inquiries: admin@ahfe.org
Technical Support: support@ahfe.org

1	**Sounding Better: Alarms and Soundscapes in Healthcare** Co-Chairs: Judy Edworthy, UK and Carryl Baldwin, USA	EHMD
10:30-12:00 - AHFE 1	Enhancing clinician alarm response in the operating room via music volume modulation Mabel Cummins, Akash Gururaja, Alexandra Bruder, Christy Crockett, Olivia Henry, Matthew Shotwell, Yaping Shi, Joshua Shive, Joseph Schlesinger, USA Using sound to facilitate attentional control and restoration Carryl Baldwin, Rachel Sutton, UK How standards can help improve alarms Judy Edworthy, UK Improving detection of auditory alarms through modification of harmonic structure Mabel Cummins, Joseph Schlesinger, Molly Bingham, Ayush Sangari, USA Acoustic biotopes of intensive care units: Towards a framework of investigation Elif Özcan, Netherlands	
2	**Design Strategy and User Experience** Co-Chairs: Alina Marquet, Germany and Kaj Helin, Finland	UUE
10:30-12:00 - AHFE 2	Conceptualization of a serious game for validation and optimization of a decision support system in disturbance and error management on the shop floor Alina Marquet, Sven Münker, Antonia Markus, Anas Abdelrazeq, Robert H. Schmitt, Bert Leyendecker, Germany Early-stage user experience design of the remote operation concept of the Harbour's Reachstacker by exploiting eXtended reality Kaj Helin, Andrea Alesani, Timo Kuula, Vladimir Goriachev, Finland User experience evaluation for AR learning platform on endangered animals in Taiwan Chieh-ju Huang, Pin Ju Chen, Jyun Ting Lin, Hsiang-yu Chang, Taiwan Influence of intelligent agent anthropomorphic image and role on user acceptance Yan Shi, Shuhao Zhang, Yiwei Xiong, Na Liu, China Technology affinity in the nuclear domain: An initial assessment of operator attitudes towards technology Kelly Dickerson, Michael Hildebrandt, Niav Hughes, Heather Watkins, John Grasso, Isaac Wang, Peter Gerhardstein, USA The influence of background music popularity on consumer online shopping behavior: A model analysis Hui Zhang, Xinjie Liang, Yingping Cao, China Correlation Analysis of Mobile Vibration Parameters and Emotional Responses Chao Zeng, Wang Haining, China	

3	**Playing with Cyber Security: Using Games to Understand the Issues** Co-Chairs: Oli Buckley and Niklas Henderson, UK	CYBER
10:30-12:00 - AHFE 3	Planning the perfect heist: An adversarial cyber game Oliver Buckley, Jake Montanarini, Helen Quinlan, UK The disPHISHinformation game: Creating a serious game to fight phishing using blended design approaches Niklas Henderson, Helen Pallett, Sander Van Der Linden, Jake Montanarini, Oliver Buckley, UK Cracking the code: A cyber security escape room as an innovative training and learning approach Tash Buckley, Oliver Buckley, UK ZachCoin: An interactive cryptocurrency lab for undergraduate students Zachary Peterson, USA Gamification: 20 years on, what have we learned? Holly Aldred, UK Towards a human-centric AI trustworthiness risk management framework Kitty Kioskli, Laura Bishop, Nineta Polemi, Antonis Ramfos, UK/The Netherlands/Greece Practising safe sex(t): Developing a serious game to tackle technology-facilitated sexual violence Tia Cotton, Lynsay Shepherd, UK	
4	**Design and Evaluation for Safety** Co-Chairs: Bijan Aryana and Jonas Borell, Sweden	ED
10:30-12:00 - AHFE 4	Design strategies to reduce personal protective equipment noncompliance Bijan Aryana, Anna-Lisa Osvalder, Jonas Borell, Sweden Evaluating the correct usage, comfort, and fit of personal protective equipment in construction work Jonas Borell, Anna-Lisa Osvalder, Bijan Aryana, Sweden Effect of table width for upper limb rehabilitation of hemiplegic stroke patients Mako Tsukamoto, Tokio Sakakibara, Sho Maruyama, Masaaki Kubo, Ami Ogawa, Japan High-frequency gripping area for one-handed smartphone rear interactions Xinyue Zhang, Wei Wang, Guanhua Sun, Yikai Zhong, China Exploring the subjective response of keyboard key sounds on individuals' and susceptibility to interference and sensitivity to noise Yaxuan Xu, Yuxuan Tian, Yun Chen, China Systematic comparison of signal quality in portable and wearable wireless EEG devices: Methods and standards Qichao Zhao, Ran Yang, Xiaoqing Zhu, Chunxiao Li, Xin Gao, Yanan Li, Haiyang Yu, Jie Wang, Junli An, Ziying Tan, Ziyuan Zhao, China Service design for waste separation and disposal in university housing complexes - Around the Gwangju Campus of Chonnam National University Huang Baimin, Li Chu Yang, Byungjun Jeon, Jung-ho Jung, South Korea	

5	**Autonomous and Automated Driving I** Co-Chairs: Matthias Beggiato, Germany and Mervyn Franssen, Netherlands	RR

10:30-12:00 - AHFE 5

Typology of behavioral and emotional reactions to uncomfortable automated driving operations
Matthias Beggiato, Cornelia Hollander, Stephan Enhuber, Klaus Moessner, Georg Jahn, Germany

Evaluation of different HMIs to improve operator hazard perception and user experience in teleoperation of automated shuttles
Shanmuga Priya Srinivasan, Paul Tribulowski, Alisa Lindner, Germany

How to support level-compliant driver behavior in automated driving with optimized user experience?
Nuria Brüggemann, Preis Sebastian, Arnd Engeln, Anne Pagenkopf, Germany

Age limit for "driving" an autonomous vehicle: an open issue for future road transport system
Saeedeh Mosaferchi, Alireza Mortezapour, Luca Orlando, Alessandro Naddeo, Italy

Slideo: Bicycle-to-vehicle communication to intuitively share intention to turn with automated vehicles
Jochem Verstegen, Pavlo Bazilinskyy, Netherlands

Combining internal and external communication: The design of a holistic human-machine interface for automated vehicles
Rutger Verstegen, Ruolin Gao, Regina Bernhaupt, Pavlo Bazilinskyy, Marieke Martens, Netherlands

Exploring the effects of interior design elements on the uncertainty of passengers of fully automated cars
Mervyn Franssen, Haoyu Dong, Rutger Verstegen, Marieke Martens, Netherlands

6	**Ecosystem-Based Data Economy** Co-Chairs: Minna Takala and Vesa Salminen, Finland	HFBMS

10:30-12:00 - AHFE 6

Fair data economy for digital service development
Heikki Ruohomaa, Vesa Salminen, Finland

Approaching cognitive biases in the circular economy through serious gaming
Anna-Kristin Behnert, Julia Arlinghaus, Melanie Kessler, Maria Freese, Germany

Strengthening co-creation competencies and engaging innovation ecosystem partners through ecosystem games and innovation camps
Minna Takala, Taina Tukiainen, Vesa Salminen, Finland

Revitalizing technology governance for the post-COVID era: A strategic framework
Mihkel Lauk, Janar Linros, Ragner Paevere, Madis Tapupere, Ingrid Pappel, Estonia

Enhancing organizational efficiency and security in supermarkets: A case study of DMart
Bhargavi Badve, Khushi Gandhi, Ganesh Jadhav, India

Technology for social change: Unpacking the impact of GovTech solutions on the achievement of SDGs
Alena Labanava, Marina Weck, Estonia

7	**Design for All and Cultural Heritage** Co-Chairs: Michela Benente and Valeria Minucciani, Italy	DI
10:30-12:00 - AHFE 7	Narrative apparatus in archaeological museums and communication for all Michela Benente, Valeria Minucciani, Melania Semeraro, Italy Virtual reality for cultural heritage: Emotional involvement and design for all Valeria Minucciani, Michela Benente, Andrea Bottino, Francesco Strada, Italy How far has Japanese accessibility improved with Tokyo 2020 Olympics/ Paralympics? Satoshi Kose, Japan How do different physical properties of the seat material affect sit-to-stand motion? Yusuke Onoda, Ami Ogawa, Japan Inclusivity vs exclusivity. Applying design for all and universal design principles in the field of nautical design Salvatore di Dio, Mauro Filippi, Benedetto Inzerillo, Samuele Morvillo, Dario Russo, Italy Cultural perception of dominant color in static systems Jorge Gil Tejeda, Lorena Olmos Pineda, Mexico Crossing the East Asian cultural bridge: Comparison between Chinese and Japanese aesthetic education Zhuyun Yuan, China	
8	**Systems Engineering Applications** Co-Chairs: Rachael Hill and Rachel Chai, USA	HFSSE
10:30-12:00 - AHFE 8	Humans, physical systems, cyber systems and artificial intelligence – an initial architectural integration Robert Sharples, UK Understanding user needs of personalisation-based automated systems with development and application of novel ideation cards Joshua Duvnjak, Ayse Kucukyilmaz, Robert Houghton, UK Human factors in hybrid threat risk assessment Maryna Zharikova, Stefan Pickl, Germany Sociotechnical aspects of decentralized wastewater treatment systems Rachel Chai, Bhushan Lohar, Kaushik Venkiteshwaran, Sean Walker, Kevin White, USA Human factors design for particle accelerator control room interfaces Rachael Hill, Zachary Spielman, Casey Kovesdi, Katya Le Blanc, Madelyn Polzin, USA Design needs and human factors in electrical conductivity and high strength conductor of α-Al-Graphene+GAgNPs nanocomposites Victor Sunday Aigbodion, Daramy Vandi Von Kallon, South Africa Electrical resistivity of Fe-Ni-based HEA for soft magnetic materials: implications for addressing human factors and design needs Chika Ujah, Daramy Vandi Von Kallon, Victor Sunday Aigbodion, South Africa	

9	**Human Performance and Reliability Analysis** Co-Chairs: Fabian Fritsch, Germany and Hiroshi Ujita, Japan	HERRP
10:30-12:00 - AHFE 9	Model, method and data issues in human reliability analysis (HRA) Hiroshi Ujita, Japan Human reliability in the German site selection for a nuclear waste repository Fabian Fritsch, Oliver Straeter, Germany Nuclear power plant maintenance and commissioning activities from the perspective of HRA: A comparative study Zijian Yin, Hongchao Zhang, Peng Cheng, Peiyuan Wang, Zhizhong Li, China Data collection and analysis of patient and document flow during a disaster exercise at a large hospital Yumiko Bito, Taro Kanno, Kazumi Kajiyama, Misumi Yamazaki, Haruka Yoshida, Michihiro Tsubaki, Sachika Sharikura, Japan Challenges in applying human reliability analysis in systems containing Artificial Intelligence Martin Rasmussen Skogstad, Ronald Boring, Jan Hayes, Norway/USA/Australia The influence of set size in a dynamic decision-making task Colleen Patton, Christopher Wickens, Benjamin Clegg, Cap Smith, USA Mitigating human error in civil aviation: A cognitive analysis of job tasks using Success Likelihood Index Method (SLIM) Ucchita Sharma, T. Bangar Raju, India	
10	**SIG: Human Factors in Naval Aviation Training: The Intersection of Automation and Simulation** Co-Chairs: Beth Atkinson and Emily Anania, USA	HFSIM
10:30-12:00 - AHFE 10	Harnessing AI technologies for data synthesis in training research Mitchell Tindall, USA Human systems integration best practices in the application of artificial intelligence and automation technology James Pharmer, USA Naval aviation training: The intersection of automation and simulation Beth Atkinson, Emily Anania, USA Challenges and future directions in applying AI to tactics training John Killilea, USA Leveraging AI to provide pseudo-instructor support for instructorless training Emily Anania, USA	

11	**Industry 4.0 and Intelligent Manufacturing Technologies I** Co-Chairs: Erdem Gelec, Germany and Jorge Camba, USA	MFG
10:30-12:00 - AHFE 11	Green human resource management and employee green behaviour in the present generational context Beata Mrugalska, Poland Exoskeletons in action: The impact of exoskeletons on human factors during manual material handling Matteo Perini, Adriano Paolo Bacchetta, Riccardo Khamaisi, Riccardo Melloni, Alessio Morganti, Margherita Peruzzini, Lucia Botti, Italy Change and configuration management as a foundation for a new digital enterprise education Jorge Camba, Joseph Anderson, USA Addressing the challenges of decision support systems for small and specialized interest groups: A case study of date palm growers Noy Saraf, Yuval Cohen, Tal Oron-gilad, Maia Nosinov, Noah Morris, Tamir Ticuchinski, Avraham Sadowsky, Yael Salzer, Israel Exploring the influence of Industry 4.0 technologies on workplace dynamics: A literature analysis Mariannys Rodriguez Gasca, Sanderson Macedo Barbalho, Brazil Framework for agile organization and work design for industry 4.0 Erdem Gelec, Melih Sah Dogru, Germany	
	Refreshments:12:00-12:30 • Location Lobby Level	
12	**Sensory Engineering and Emotion I** Co-Chairs: Keiichi Watanuki and Kazunori Kaede, Japan	APD
12:30-14:00 - AHFE 1	Evaluation of the effect of the candle holder pattern on concentration and mental stress Masamitsu Nagayoshi, Keisuke Kisu, Keiichi Watanuki, Isao Inoue, Japan Factor of discomfort during jumping extended in virtual space Takuto Adachi, Keiichi Watanuki, Kazunori Kaede, Yusuke Osawa, Japan Design of 3D point cloud dataset of indoor spaces for feature extraction using Autoencoder with PointNet Takahiro Miki, Yusuke Osawa, Keiichi Watanuki, Japan Generating paintings eliciting specific emotions using machine learning for application in painting therapy Keisuke Kisu, Kozawa Motohiro, Keiichi Watanuki, Japan Estimation of worker stress considering differences in listening tempo Ryo Suetake, Keiichi Watanuki, Kazunori Kaede, Yusuke Osawa, Japan Effects of dual tasking with visual display terminal work and advertisement presentation on workers' interest and emotions Kanta Onimaru, Yusuke Osawa, Keiichi Watanuki, Kazunori Kaede, Japan Estimating work efficiency using biological information during computational work with cognitive load Kosuke Sato, Keiichi Watanuki, Kazunori Kaede, Japan	

13	**Human Digital Twins Across Domains and Perspectives** Chair: Valarie A. Yerdon, USA	DHMAO
12:30-14:00 - AHFE 2	Evaluation of helicopter performance indicators for use in the development of digital twin based on physiological sensor data from the aviator Kathryn Feltman, Amanda Kelley, USA Beyond symbiosis? How combining human digital twins with artificial intelligence sidekicks can surpass Licklider's vision Sylvain Bruni, USA The conduct of virtual work on virtual systems using extended reality (XR) Peter Hancock, Ben Sawyer, USA Human digital twins: The promise and peril Matthew Canham, Ben D. Sawyer, USA A comprehensive digital twin for assessing feasibility and ergonomics of high-tension cable assembly operations Manuela Vargas Gonzalez, Maria Pia Cavatorta, Valerio Cibrario, Lidia Ghibaudo, Ludovico Rossi, Italy Considerations in range of motion testing for characterizing spacesuit mobility capabilities Linh Vu, Christine Flaspohler, K. Han Kim, Sudhakar Rajulu, Nathaniel Newby, USA	
14	**3D Prototyping and Additive Manufacturing** Co-Chairs: Andrei Alexandru Popa, Denmark and Andrea Ratti, Italy	MFG
12:30-14:00 - AHFE 3	3D printed hands-free door handle to prevent COVID-19 virus spread: Developing a design based of Iranian population for medical centers Alireza Abouhossein, Zahra Ansari, Sajjad Rostamzadeh Kalkhoran, Mahnaz Saremi, Iran The influence of 3D printing parameters on pellet-extruded hyperelastic polymers for cost-efficient soft gripping with encapsulated sensors Andrei Alexandru Popa, Cristi Teslari, Denmark Leveraging large language models for computational design and 3D-prototyping in rehabilitation Mustapha Dere, Hyeongjun Park, Ji-hun Jo, Boreom Lee, South Korea Design and development of urban space products by large-scale robotic extrusion-based additive manufacturing technology Afonso Santos, Álvaro M. Sampaio, Artur Costa, António J. Pontes, Portugal Additive manufacturing in the maritime industry: Impact on production processes, workers, and end-users Massimo Piccioni, Andrea Ratti, Italy On the manufacturing of potted electrical connectors with 3D printing resin: An unobtrusive workflow Andrei Alexandru Popa, Olgierd Nowakowski, Lars Duggen, Denmark Innovating ceramic products through digitalization and additive manufacturing: two Made in Italy case studies Gabriele Goretti, Benedetta Terenzi, Italy	

15	**Current Investigative Processes and Future Visions with Artificial Intelligence** Co-Chairs: Anne Garcia, USA and Bart Accou, France	SMHF
12:30-14:00 - AHFE 4	The role of human factors in transport accident investigation Mark Young, UK AI-enhanced ergonomics: Revolutionizing industrial safety through real-time posture analysis and PPE detection Rafael Luque, José Ramón Vilanova, Gonzalo Diaz, Eduardo Ferrera, Spain Is there a future for safety management systems? Bart Accou, Fabrizio Carpinelli, France The role of artificial intelligence in transportation safety management systems: The aviation safety II case study Dimitrios Ziakkas, Konstantinos Pechlivanis, USA/UK Reliability and safety embedded design thinking and frugal engineering-based approach in assistive product system engineering Tushar Tiwari, Vikas Kumar Sharma, Pranab Kumar Dan, India Stop investigating events: Combining in-depth and HOF driven analysis of work, as performed in the reality of day-to-day operations Fabrizio Carpinelli, Bart Accou, France Human factors safety management issues in marine and pipeline accident investigations Derek Johnston, Anne Garcia, Sara Lyons, USA	
16	**Workspace Design and Safety** Co-Chairs: Vesna Spasojević Brkić, Serbia and Sarah Rudder, USA	SYSI
12:30-14:00 - AHFE 5	Ergonomic adjustment needs of transport and mining machines: A preliminary study of operators' attitudes in Serbia Vesna Spasojević Brkić, Mirjana Misita, Neda Papic, Aleksandar Brkić, Martina Perišić, Serbia Model-based systems engineering (MBSE) enterprise architecture framework (EAF) with human system integration (HSI) – a smart-city (SC) case study Sarah Rudder, USA Model training through synthetic data generation: Investigating the impact on human physical fatigue Arsalan Lambay, Ying Liu, Ze Ji, Phillip Morgan, UK Excavators' cabins ergonomic design influential factors modelling: Preliminary study Martina Perišić, Vesna Spasojević Brkić, Ivan Mihajlović, Aleksandar Brkić, Nemanja Janev, Serbia The role of the production control and safety management systems in construction safety performance Panagiotis Mitropoulos, USA Self-service health screening devices based on community health management services Shimeng Xiao, Xiaohan Tu, Long Liu, China Dumper operator's workplace risks: Preliminary study Neda Papić, Mirjana Misita, Vesna Spasojević Brkić, Martina Perišić, Nemanja Janev, Serbia	

17	**Human Factors in Robotics Research: Convergent Approaches** Co-Chairs: Alexandra Medina-Borja and Krystyna Gielo-Perczak, USA	HFRDUS
12:30-14:00 - AHFE 6	Integrating episodic and semantic memory in machine teammates to enable explainable after-action review and intervention planning in HAA operations Eric Davis, Katrina Schleisman, USA Navigating the seas of automation: Human-informed synthetic data augmentation for enhanced maritime object detection Amin Majd, Mehdi Asadi, Juha Kalliovaara, Tero Jokela, Jarkko Paavola, Finland State-of-the-art of human factors research in robotics and funding opportunities in the United States Alexandra Medina-Borja, USA How robot arms can be used for bin picking and shelf picking Seemal Asif, Shifan Li, UK Human factors consideration in mixed reality interface design for collaborative robots Laura Stanley, Apostolos Kalatzis, USA 4-DOF robotic arm simulator for machine operator training and performance evaluation: Engineering design and experimental validation Felix Dreger, Sarah Kuhlmann, Frank Weichert, Gerhard Rinkenauer, Germany	
18	**Innovations in Digital Technology for Cultural Heritage in Communication** Chair: Amic Ho, Hong Kong	HFCD
12:30-14:00 - AHFE 7	Field-of-view in stereo interaction Yang Cai and Mel Siegel, USA Reinventing the virtual museum post-pandemic: An audience-centric approach to enhancing virtual exhibitions of intangible cultural heritage Haitang Zhang, UK Exploring the impact of packaging information on consumer purchase decision Han Bing Li, Fei Chen Wu, Chun Heng Ho, Taiwan Teaching reform practice empowered by digital technology in local intangible cultural heritage aesthetic education courses Jiang Hui, Eakachat Joneurairatana, Thailand Virtual scene design of Peking Opera Farewell My Concubine based on human-computer interaction technology Siyuan Du, China Chinese Yunnan Pu-er Tea ecological branding design for the Japanese market Rei Hashiba, Japan Facilitating stakeholder consensus in geothermal development: Developing an AIGC-integrated 3D visual-tactile opinion communication system Zhenyu Ma, Xiaotong Wang, Japan	

19	**Human-Centered Metaverse and Digital Environments** Co-Chairs: Bernardo Marques, Portugal and Evangelos Markopoulos, UK	AATDE
12:30-14:00 - AHFE 8	Symbolism in extended reality Yang Cai, USA Video generation method unconsciously gaze-guiding for a passenger on autonomous vehicle with controlling color and resolution Yamato Miyajima, Chun Xie, Itaru Kitahara, Japan Measuring remote collaboration supported by extended reality: A multidimensional evaluation approach Bernardo Marques, Samuel Silva, Betriz Sousa Santos, Portugal The role of collaborative virtual reality engagement in stroke survivors' rehabilitation Bernardo Marques, Sérgio Oliveira, Hugo Ferreira, Paula Amorim, Paulo Dias, Betriz Sousa Santos, Portugal Exploring the willingness of knowledge workers to use the metaverse office: A qualitative study Yuzhen Wang, Ruifeng Yu, China Digital 3D generation and optimization of ancient Chinese bronzes driven by photogrammetry Zhehao Zhu, Lisha Ren, Zhiwen Deng, China Aligning digital twins and metaverse with the UN SDGs and applying them to understand human behaviour in smart and virtual cities. Evangelos Markopoulos, Panagiotis Markopoulos, Akash Nandi, Kui Zhao, Mascha Samkova, Tong Wu, Finalnd/UK/USA/France	
20	**Explorations in Design Education** Co-Chairs: George K. Chow and Min Kang, USA	IPID
12:30-14:00 - AHFE 9	An EV charging UX design exploration for broader distribution of level 2 charging system with improved user experience Min Kang, Suochun Fang, USA Nicer neighborhoods: Improving lives one design at a time George Chow, USA Effective approaches of interdisciplinary collaboration in the foundation design course Xue Dong, USA A multisensory design approach to help relieve stress in a healthcare workplace Shruti Shukla, Elham Morshedzadeh, Jeff Feng, USA Curricular development in industrial design: An dive into understanding Adam Feld, USA Buddy4All – A platform to connect generations Elisabeth Broneder, Christoph Weiß, Stephanie Puck, Youssef Ibrahim, Austria	

21	**Approaches to Aging Workforce and Special Needs** Co-Chairs: Sajjad Rostamzadeh Kalkhoran, Iran and Zhen Zaho, Hong Kong SAR China	HFAS
12:30-14:00 - AHFE 10	Importance of handgrip strength and endurance time for predicting COVID-19 mortality in older adult patients: K-Nearest Neighbors (k-NN) algorithm Sajjad Rostamzadeh Kalkhoran, Amin Allafasghari, Alireza Abouhossein, Atabak Alafasghari, Iran Retired independent women adjusting to co-living Marie J. Myers, Canada An approximate metaverse virtual store designed for reducing cybersickness in middle-aged consumers Cheng-li Liu, Shiaw-Tsyr Uang, Taiwan Overcoming obstacles: Examining user resistance to home-based health monitoring systems among older adults Zhen Zhao, Qian Mao, Yun Hei Chak, Trudy Cheung, Hailiang Wang, Hong Kong SAR China Smart relax armchair - a solution for active and safe ageing at home Sarah De Cristofaro, Luca Rizzi, Dario Cardone, Lisa Berti, Ubaldo Spina, Italy The other aspect of ergonomics: Job crafting in a sample of older adults still in employment Mohamed Mokdad, Bouhafs Mebarki, Sami Al-mahjoub, Algeria Chinese nursing home design studies based on changes in design formal language Jiaxin Liu, Changming Tang, China	
22	**Human Factors for Apparel and Textile Engineering: Wearability and Function** Co-Chairs: Emilia Visileanu and Marian-Catalin Grosu, Romania	HFATE
12:30-14:00 - AHFE 11	Alternative methods for building energy preservation Marian-Cătălin Grosu, Ioan Hossu, Emilia Visileanu, Florin Breabăn, Alexandra-Gabriela Ene, Felicia Dondea, Romania Advanced materials with infrared camouflage properties Emilia Visileanu, Elena Perdum, Laurentiu Dinca, Adrian Salistean, Felicia Dondea, Razvan Scarlat, Romania Fashion design combining agar bioplastics with other materials Yutaro Kori, Japan Comprehensive analysis of body shapes in the Indian male population: A national and regional study Manoj Tiwari, Noopur Anand, India Comprehensive analysis of body shapes in the Indian female population: A national and regional study Manoj Tiwari, Noopur Anand, India Seasonal variations in the comfortable bedroom temperature at the time of waking Tamaki Mitsuno, Mayuko Yoshimura, Japan Integrating tradition with modernity: Transformation of Tang Dynasty aesthetics in contemporary costume design through Dunhuang mural inspirations Yunfan Zhang, Eakachat Joneurairatana, China	

23	**Evaluation and Assessment in Maritime Training and Transportation** Co-Chairs: Charlott Sellberg and Gesa Praetorius, Sweden	MAR
8:30-10:00 - AHFE 1	Assessment measures and practices in maritime education and training Martina Odéen, Gesa Praetorius, Sweden Participatory learning analytics workshops with maritime instructors: Designing teacher-facing dashboards for simulation-based training Susan Harrington, Charlott Sellberg, Martina Odéen, Gesa Praetorius, Sweden Assessment of resilience in a maritime autonomous transport system Odd Erik Mørkrid, Kay Fjørtoft, Marianne Hagaseth, Even Holte, Norway The human element in data driven decision making for winter navigation Mashrura Musharraf, Cong Liu, Finland Operational integration of maritime autonomous surface ships and training requirements for remote control operators Michael Baldauf, Germany	
24	**Cognitive Computing on Psychophysiological Strain of Action Forces** Co-Chairs: Rita Paradiso, Italy and Lucas Paletta, Austria	CCIoT
8:30-10:00 - AHFE 2	Wearable solutions for smart integrated extreme environments health monitor system Rita Paradiso, Italy Innovative biosensor based aeromedical monitoring solution for specific military medical evacuation scenarios Florian Haid, Alexander Almer, Anna Weber, Markus Bergen, Gerald Bauer, Austria Semantic decision support for action forces with risk stratification from estimated physiological strain, cognitive-emotional stress and situation awareness Florian Haid, Michael Schneeberger, Belén Carballo Leyenda, Jose A. Rodríguez-Marroyo, Stefan Ladstätter, Anna Weber, Alexander Almer, Jochen Mosbacher, Lucas Paletta, Austria Deep learning based Human Activity Recognition in first responders wearing a sensorized garment Edoardo Spairani, Rita Paradiso, Giovanni MagenesItaly, Italy Wearable system for the evaluation of well-being in the workplace Rita Paradiso, Eefke Krijnen, Italy Analysis of environmental and human factors of attention deficit in special-needs students using eye-tracking technology Armand Manukyan, Jérôme Dinet, Somealea Ung, Anne-Marie Eby, France Validation of wearable biosignal sensor-based estimation of the physiological Strain Index using Gaussian process regression Michael Schneeberger, Belén Carballo Leyenda, Jose A Rodríguez-Marroyo, Lucas Paletta, Austria	

25	**Electric and Automated Vehicle Driving: Performance and Requirements** Co-Chairs: Markus Gödker and Thomas Franke, Germany	RR
8:30-10:00 - AHFE 3	The role of users' privacy concerns in the decision for smart battery electric vehicle charging Madlen Günther, Bettina Kämpfe, Josef Krems, Germany Car commuters' requirements for using light electric vehicles (LEV) Annika Dreßler, Emma Höfer, Mascha Brost, Laura Gebhardt, Michael Böhm, Germany Assessing energy-related situation awareness using self-controlled occlusion during electric vehicle driving scenes Markus Gödker, Thomas Franke, Germany Feeling comfortable? Exploring the relation between personality, competence, and range interaction in electric vehicles Markus Gödker, Vivien Moll, Thomas Franke, Germany Efficiently explained: Leveraging the SEEV cognitive model for optimal explanation delivery Akhila Bairy, Martin Fränzle, Germany Clustering analysis of research direction for intelligent cockpit ergonomics based on Knowledge Mapping Quan Yuan, Qingkun Li, China	
26	**Usability Evaluation and Emotional Design** Co-Chairs: Qingju Wang and Di Fang, China	UUE
8:30-10:00 - AHFE 4	The relevancy of knowledge and the knowledge of relevancy: An information theory-based quantitative methodology for evaluating UI design and usability Lance Chong, Canada Evaluation of the usability and intuitiveness of a teleoperated forklift Leonhard Feiner, Florian Canzek, Johannes Fottner, Germany Effects of different visual feedback mechanisms on eye-controlled interaction in a vibration environment Mingyu Ai, Xiaonan Yang, Shuai Wang, Wanni Wei, Hongwei Niu, Haonan Fang, China Support from conversational agent on daily stress for user satisfaction improvement Peixian Lu, Liang Ma, China A method for analyzing consumer behavior and evaluating marketing effectiveness of online websites based on multimodal data synchronization Ping Wu, Qichao Zhao, Qingju Wang, Lei Shi, Jieyun Fan, Qian Zhou, Ying Gao, Han Li, China An experiential study of digital interactive feedback for anxiety attention bias modification Di Fang, Hanling Zhang, Jin Li, China A brief analysis of the application of the five senses in emotional design - taking tea tray design as an example Danmeng Xu, Rui Xu, China	

27	**Intelligent Teams and Team Cohesion** Co-Chairs: Vesa Salminen and Pengcheng Ni, Finland	HFBMS
8:30-10:00 - AHFE 5	Team, unit, and networked cohesion in start-up entrepreneurship Vesa Salminen, Matti Pyykkönen, Carita Salminen, Joonas Pylvinen, Finland Revolutionizing talent: The path in 21st century workforce transformation Elizabeth Koumpan, Lynda McOwen, Canada Taxonomy of knowledge management systems in a complex environment Pengcheng Ni, Jussi Kantola, Finland The importance and necessity of early-stage financial support for startups and venture companies in Japan Minoru Kobayashi, Japan Enhancing public engagement and awareness: An analysis of internet meme posts usage by Indian police departments on Instagram Bhaskar Mishra, Samrat Dev, India Systems intelligence in an expert organization: A mixed methods approach Jari Kautiala, Satu Jumisko Pyykko, Raimo P. Hämäläinen, Esa Saarinen, Finland	
28	**Human Factors in Virtual Environments I** Co-Chairs: Marek Bures, Czech Republic and I-jui Lee, Taiwan	HFGD
8:30-10:00 - AHFE 6	What about the real use of virtual, extended and augmented reality? A survey of a French representative sample Jean-Marie Burkhardt, Dina Attia, Francine Behar-Cohen, Ouriel Grynszpan, Evelyn Klinger, Régis Lobjois, Guillaume Moreau, Olivier Nannipieri, Alexis Paljic, Pascale Piolino, Hung Thai-van, Serge Tisseron, Isabelle Viaud-Delmon, France Kitchen horrors: Unraveling the influence of multimodal stressors on user experience in virtual reality through electrodermal activity Aleksandra Zheleva, Michał Kacper Gil, Edoardo Pelosin, Durk Talsma, Lieven De Marez, Klaas Bombeke, Belgium The effect of a chat option in social virtual reality versus video-mediated communication on the willingness to collaborate Nirit Gavish, Dor Gonen, Israel Use of virtual reality for crime scene investigation training by security forces Marek Bures, Alena Lochmannová, Czech Republic Multisensory virtual reality reminiscence therapy: A preliminary study on the initial impact on memory and spatial judgment abilities in older adults I-jui Lee, Pan Xin-Ting, Taiwan Mobile solution for ergonomic training in industry: A HoloLens 2 mixed reality approach Katharina Kuznecova, Susanne Werking, Gerrit Meixner, Germany	

29	**Building Information Modeling and Sustainable Construction Industry** Co-Chairs: Babatunde Fatai Ogunbayo and Oluwaseun Raimi, South Africa	SBE
8:30-10:00 - AHFE 7	**Strategies to improve BIM usage among professionals in the construction industry** Babatunde Fatai Ogunbayo, Clinton Aigbavboa, Samuel Adekunle, South Africa **Challenges in the implementation of modern methods of construction, including construction 3D printing, in South Africa: A comprehensive examination of products performance** Jeffrey Mahachi, South Africa **Using the UN SDGs and the ESG Index towards the development of a unified building information modelling language and culture for sustainable construction** Evangelos Markopoulos, Panagiotis Markopoulos, Akash Nandi, Tong Wu, Kui Zhao, Mascha Samkova, Menglei Huang, Finland/UK/USA/China/France **Integrating digital twins into the metaverse for dynamic and computer-human interactive building information modeling** Panagiotis Markopoulos, Evangelos Markopoulos, Akash Nandi, Jussi Kantola, UK **Systematic review of the application challenges of virtual reality for facilities management in the South African construction industry** Oluwaseun Raimi, Babatunde Fatai Ogunbayo, Clinton Aigbavboa, South Africa **Validating critical factors affecting national safety incentives policy for the construction industry in developing countries** Kunle Elizah Ogundipe, Clinton Aigbavboa, Babatunde Fatai Ogunbayo, South Africa **Gender gap in the construction industry's consultancy: Is this a threat to achieving sustainable development Goal 5?** Andrew Ebekozien, Clinton Aigbavboa, Mohamad Samsurijan, Mohamed Ahmed, Samuel Adekunle, Opeoluwa Akinradewo, Matthew Ikuabe, Angeline Nwaole, South Africa	
30	**HSSE Plenary** Co-Chairs: Christine Leitner, UK, Clara Bassano, Italy, Debra Satterfield, USA, and Rainer Nägele, Germany	HSSE
8:30-10:00 AHFE 8	**Artificial Intelligence (AI) in Education** Wojciech Cellary, Poland	

31	**Artificial Intelligence: The Human-Machine Interaction** Co-Chairs: Jay Kalra, Canada and Massimo Micocci, UK	GIC
8:30-10:00 - AHFE 9	**Artificial intelligence for cluster detection and targeted intervention in healthcare: An interdisciplinary system approach** Patrick Seitzinger, Zoher Rafid-Hamed, Jay Kalra, Canada **Exploring the integration of AI in sepsis management: A pilot study on clinician acceptance and decision-making in ICU settings** Massimo Micocci, Hannah Kettley-Linsell, ShanShan Zhou, Paul Festor, Simone Borsci, Matthieu Komorowski, Myura Nagendran, Peter Buckle, George B. Hanna, Aldo Faisal, Anthony C. Gordon, UK/Netherlands **Exploring employees' perspectives on the impact of technology on their work environment and well-being** Riadh Ladhari, Mouna Knani, Canada **Strategic integration of AIGC in Asian elderly fashion: Human-centric design enhancement and algorithmic bias neutralization** Hongcai Chen, Vongphantuset Jirawat, Yan Wang, Thailand **Towards safer routes: Exploring the potential of artificial intelligence and augmented reality in children's school commuting environment design** Jinghao Hei, China	
32	**Neuroscience of Creativity** Co-Chairs: Kazutaka Ueda, Japan and Koji Koizumi, UK	APD
8:30-10:00 - AHFE 10	**Effects of visual analogy in design task on brain functional connectivity related to creative thinking** Kentaro Maeta, Takeo Kato, Kazutaka Ueda, Japan **Investigating the neurological substrates of creative thinking in engineering design with human and with AI** Fukashi Mikami, Kazutaka Ueda, Koji Koizumi, Masayuki Nakao, Yukihisa Yokoyama, Japan **Effect of forest bathing for mindwandering** Atsushi Ito, Yuko Hiramatsu, Kazutaka Ueda, Madoka Hasegawa, Yasunari Harada, Yasunari Harada, Japan **Creativity: The writer as transmitter and the recipient as reconstructor - The dual structure and the imagination that bridges the gap between them** Yuko Hiramatsu, Japan **Exploration of the neural foundations of creative design** Koji Koizumi, UK **Design theory based on users' thought processes with serendipitous value discovery** Nodoka Yamada, Kazutaka Ueda, Keisuke Nagato, Masayuki Nakao, Japan **Brand associations with traffic patterns in store layout planning** Jiacheng Wang, Regina W. Y. Wang, Taiwan	

33	**Ergonomics in Architecture** Co-Chairs: Alicja Maciejko, Poland and Xiaoxuan Jiang, China	SUPI
8:30-10:00 - AHFE 11	**Approach to ensure inclusiveness for the identification of real mobility and public space re-design needs towards sustainability** Anna Antonakopoulou, Eva Grigoriadou, Pinelopi Alexiou, Ioulia Leventopoulou, Iasonas Sioutis, Vasilis Sourlas, Angelos Amditis, Evangelia Latsa, Greece **The impact of the natural environment on the design of infrastructure in national parks in terms of ergonomics, safety and accessibility** Michal Grzeskowiak, Alicja Maciejko, Poland **An appraisal of the benefits of supply chain management Integration in the South African construction industry** Emmanuel Ayorinde, Ntebo Ngcobo, Vhahangwele Mudzusi, Jeffrey Mahachi, Clinton Aigbavboa, South Africa **An assessment of the barriers facing supply chain management Integration in the South African construction industry** Emmanuel Ayorinde, Ntebo Ngcobo, Clinton Aigbavboa, Jeffrey Mahachi, Vhahangwele Mudzusi, South Africa **Problems of designing infrastructure of tourist trails in protected landscape and nature areas: analysis of selected examples** Alicja Maciejko, Poland **Design strategies for retrofitting elementary school campus spaces based on biophilic designs** Li Xu, Xiaoxuan Jiang, Ao Yu, Yuquan Zhou, China **Analysis of the willingness and path of metropolitan residents to participate in rural landscape design: A case study of Yanjing Village, Yexie Town** Zihan Ni, Xinyi Jiang, Xiaoyu Xu, Chun Zi Wu, Tianhong Fang, China	

Refreshments: 10:00-10:30 • Location Lobby Level

34	**Physical Ergonomic Evaluation I** Co-Chairs: Erman Çakıt, Turkey and Sean Gallagher, USA	PEHF
10:30-12:00 - AHFE 1	**Prediction of noise-induced hearing loss in the forest sector using machine learning techniques** Işık Doğru, Erman Çakıt, Turkey **Fatigue failure theory in continuous assessment of cumulative damage to the low back using inertial motion capture** Ivan Nail Ulloa, Nathan Pool, Bob Sesek, Richard F. Sesek, Mark C. Schall, Jr., Sean Gallagher, USA **A look at the use of lifts in Quebec's auto mechanics sector: What impact for automotive technician's work?** Maud Gonella, Damien Burlet Vienney, Sylvie Beaugrand, Élise Ledoux, Canada **Characteristics of muscle activity and joint dynamics during weight lifting by isotonic elbow flexion with assistive force** Satoshi Muraki, Yuan Yang, Teerapapa Luecha, Jeewon Choi, Ping Yeap Loh, Wen Liang Yeoh, Japan **Ergonomic risk assessment of sea fishermen part V: Muscle fatigue in Sardinian pot fishing** Alessio Silvetti, Francesco Draicchio, Adriano Papale, Giorgia Chini, Alberto Ranavolo, Tiwana Varrecchia, Elio Munafò, Italy **The effect of handrail height on stair walking in stroke hemiplegic patients** Mahiro Saito, Kenji Ogawa, Masatomo Shibata, Masaki Kurihara, Hirokazu Shinoto, Hiroshi Nagaoka, Ami Ogawa, Japan **Comparing different ergonomic interventions to influence shelving practices in libraries** Nerilee Watts, Nektarios Karanikas, Australia	

35	**Driver Performance, Behavior and Physiology I** Co-Chairs: Hugo Bréard, France and Tobias Rusch, Germany	RR
10:30-12:00 - AHFE 2	**Driving with anxiety/fear/apprehension: understanding the cognitive and emotional experience of drivers to design assistance systems** Hugo Breard, Béatrice Cahour, Jean-Marie Burkhardt, Arnaud Koustanai, France **Relationship between gaze behavior and whole-body movement during car ingress** Eisuke Okane, Tomokazu Furuya, Juntaro Sakazaki, Ken Kikuchi, Takahiro Higuchi, Japan **Driver cognitive distraction classification while using eco-driving applications** Rui Lin, Pei Wang, USA **"Pay attention to that aggressive vehicle": The effect of aggressive vehicle warning systems on driving behavior and perceived workload** Yi Wang, Wei Zhang, China **Physiological and psychological performance measurement for the practical driving test** Tobias Rusch, Ben Hübner, Silja Meyer-Nieberg, Wolfgang Winter, Armin Leopold, Marko Hofmann, Cornelia Küsel, Germany **Assessing the impact of driver assistance technology: A review of non-crash and crash studies** Iiona Scully, Kristin Lennox, Julio Yanes, David Cades, USA	
36	**Decision Support in Sociotechnical Systems** Co-Chairs: Mario S. Marques, Portugal and Lorena Olmos Pineda, Mexico	SYSI
10:30-12:00 - AHFE 3	**Who is responsible for what? Combining HTA and RACI for modelling cooperation in remote operation center of trains in future railway sector** Marcel Saager, Jörn Kruse, Anja Naumann, Germany **The General Automation Level Allocation (GALA) framework, or: Why do we need another level of automation framework?** Daniele Ruscio, Adrien Metge, Marvin Schopp, Daniel Dreyer, Benedikt Petermeier, Germany **Usability assessment of extended reality applications: A review** Mario Simões-Marques, Portugal **Are structured analytic techniques (SATS) the missing component in cognitive warfare? The future of ISR military operations** Justin Nelson, USA **Negative emotional valence shades, but does not inhibit, interaction and spatial processes** Lorena Olmos Pineda, Jorge Gil Tejeda, Mexico **Clarification of drug-checking strategies for expert pharmacists based on gaze analysis** Yoshitaka Maeda, Japan	

37	**Human Autonomy Interactions in Simulation Supported Evaluation** Chair: Caroline Cao, USA	HFSIM
10:30-12:00 - AHFE 4	Implementation concept for optimization methods in human-robot collaboration by using full-scope simulation Sumona Sen, Patrick Poetters, Germany Application of digital human modelling and factorial experiments for workstation optimization Busra Yetkin, Berna Ulutas, UK Virtual coach design and evaluation Anastasia Axiopoulou, Jada Day, Caroline G. L. Cao, USA Rest-frame cueing for cybersickness mitigation in virtual reality helicopter flight simulation Boris Englebert, Guido Tillema, Lodewijck Foorthuis, Netherlands The relationship between the individual events within the U. S. Army's combat fitness test and a simulated marksmanship performance task Jose D. Villa, Peioneti Lam, Stephanie A. T. Brown, Linda DeSimone, Meghan O'Donovan, Clifford Hancock, Wade Elmore, Seth Elkin-Frankston, Victoria G. Bode, K. Blake Mitchell, USA	
38	**Enhancing Healthcare Experiences: A Focus on User-Centred Medical Device Design** Co-Chairs: Adrian Morales Casas and Jose Laparra, Spain	HIBEA
10:30-12:00 - AHFE 5	From concept to context: Evaluating medical device usability where it matters most Adrian Morales Casas, Amparo López Vicente, Lorenzo Solano-García, Jose Laparra, Spain Connected care home platforms: Promoting self-management by empowering patients Beatriz Muñoz García, Adrian Morales Casas, Jose Laparra, David Garrido, Arturo Gomez Pellin, Spain Citizen Science applied health care: Active involvement of clinicians and patients in co-creating health products, services and environments Amparo López-Vicente, Adrian Morales Casas, Carlos Atienza, Raquel Marzo Roselló, Jose Laparra, Spain Humanizing X-ray services for children with Cerebral Palsy: A holistic approach to functionality, usability and aesthetics José Antonio Diez-De Pablos, Luis Martí Bonmati, Nicolás Palomares, Ignacio Espíritu García-Molina, Fernando Mollá-Doménech, Carlos Atienza, Orlando Carles Diaz, Adrian Morales Casas, Jose Laparra, Spain Augmented reality eyewear with ophthalmic correction for mainstream applications, overcoming acceptance barriers through human factors plan Jose Laparra Hernández, Adrian Morales Casas, Mathieu Feuillade, Xavier Bonjour, Armel Jimenez, Vanessa Jimenez, Luis Sánchez Palop, José Francisco Serrano Ortiz, José Manuel Rojas, Andrés Soler, Spain Using deep learning to assess teamwork in the operating room Ryan Harari, Marco Zenati, Vaibhav Unhelkar, Giovana Varni, Roger Dias, USA	

39	**Interaction with Emerging Technologies I** Co-Chairs: Zhizhong Li and Wangzhi Wang, China	HDCS
10:30-12:00 - AHFE 6	Identification of factors for dynamic function allocation from the perspective of human information processing Wangzhi Wang, Manrong She, Shanguang Chen, Zhizhong Li, China A generalized framework for human-machine function allocation Yanrong Huang, Manrong She, Chunhui Wang, Chao Zhu, Zhizhong Li, China Mental workload prediction method based on GOMS Wentao Li, Zhizhong Li, China The validation of SPAR-H in the application of teleoperation by micro-simulator Hongrui Zhang, China Cognitive-oriented process information presentation for augmented reality assisted product assembly Junfeng Wang, Ting Shi, Hui Xiong, Lei Wu, Yufan Lin, China	
40	**Knowledge and Creating Value in Teams, Organizations, Communities, and Societies** Co-Chairs: Youji Kohda and Yasunobu Ito, Japan	HSSE
10:30-12:30 - AHFE 7	Entrepreneuring of mature small- to medium-sized companies in crisis situation: A case study of a legacy bakery with 90 years of history Akira Yasujima, Yasunobu Ito, Japan Academic researchers' voluntary incentives in technology transfer: An ethnographic case study of genome science Takashi Onoda, Yasunobu Ito, Japan Visualizing transformation strategies for navigating organizational change dynamics: A case study of resource management in a Japanese corporation Natsumi Takahashi, Takashi Hashimoto, Amna Javed, Youji Kohda, Japan Initial education for CRCS with different background knowledge: Case study of a company supporting clinical trials in Fukuoka, Japan Etsuko Sugai, Yasunobu Ito, Japan "Unintended Consequences" of ICT system introduction in organizations and operations: A case study on efficiency improvement of transportation operations in four daycare facilities Maya Kondo, Yasunobu Ito, Japan Introducing cultural anthropological perspectives into practice: A case study of a general practice specialty training programme in Tottori, Japan. Inoue Kazuoki, Yasunobu Ito, Japan Micro-ethnography of creativity in the learning process of "design thinking": A case study at a Japanese liberal arts university Tomoyuki Shigeta, Tomohiro Uemura, Yasunobu Ito, Japan	

41	**Optimizing Learning and Education** Co-Chairs: Robert Kebbekus, Germany and Juha Kontio, Finland	TELS
10:30-12:00 - AHFE 8	**Human factors in improving engineering education with CDIO framework** Juha Kontio, Finland **Competency-based learning in the teaching of Geometrical Product Specifications (GPS)** Alina Sersch, Christian Sauder, Tobias Steger, Peter Gust, Germany **Situation awareness in crisis management: A case study from the Arctic Region** Natalia Andreassen, Rune Elvegard, Salman Nazir, James Badu, Norway **Formation of the necessary conditions to ensure the quality of training specialists in the field of humanitarian science** Aleksandra Minchenkova, Vera Vodyanova, Nikolay Zaichkin, Lidia Minchenkova, Olga Minchenkova, Chile/Russia **Design of intelligent accompanying playsets for ADHD children under the concept of STEAM education** Cheng Zhai, Jie Zhang, Tingting Cao, China **Metacompetence as an educational goal of future-oriented higher education** Robert Kebbekus, Germany **The impact of learning styles on the academic performance of middle school students** Lorena Verdugo, Rosa Diaz, Lilian Guamán Valdez, Ecuador	
42	**Air Traffic Controllers and Flight Deck** Co-Chairs: Fabrice Drogoul, Luxembourg and Zhimin Li, China	AVI
10:30-12:00 - AHFE 9	**Scientific evaluation of the impact of an increase in the retirement age on the cognitive functions and well-being of air traffic controllers (ATCOs)** Marc Baumgartner, Philippe Cabon, Fabrice Drogoul, Mickael Causse, Jean-Paul Imbert, Damien Mouratille, Switzerland/Luxembourg/France **Vigilant air traffic control: Gaze-based recognition of detection failures to visual warnings** Zhimin Li, Fan Li, China **Remote digital tower to support air traffic control systems** Kazuhiko Yamazaki, Satoru Inoue, Hisae Aoyama, Takeuhi Kimiaki, Japan **Hidden dangers on the flight deck: A stakeholder analysis of the issues surrounding commercial pilot mental health** Mark Miller, Katie Coleman-Assad, USA **Five senses: Integrated ergonomic/stylistic design for aircraft interiors** Nicola Corsetto, Francesco Fittipaldi, Italy **Making sense of culture in the cockpit: The crash of Japan Airlines Flight 1045** Simon Cookson, Japan **The impact of delayed communication on NASA's human-systems operations: Preliminary results of a systematic review** Megan Parisi, Kaitlin McTigue, Shu-Chieh Wu, John Karasinski, Tina Panontin, Lauren Landon, Alonso Vera, USA	

43	**Toward Adaptive Automation: From Affective Computing to Tailored Decision-Making Support** Co-Chairs: Alexandre Marois, Canada and Tanya Paul, UK	CN
10:30-12:00 - AHFE 10	Using cardiac and electrodermal activity as cognitive markers for interruptions and distraction in a surveillance simulation Alexandre Marois, Damien Mouratille, Yvan Pratviel, Cindy Chamberland, Sébastien Tremblay, Canada The inverse counterfactual: use of policy capturing to model decision-making in the cockpit Jonay Ramon Alaman, Daniel Lafond, Sébastien Tremblay, Canada Real-time machine learning for ICU hypoxia prediction: A pilot study Victor Niaussat, Raphaelle Giguere, Patrick Archambault, Tanya Paul, Alexandre Marois, France Cognitive evaluation method based on regression and eye-tracking for edge of human-computer multi-interface Linlin Wang, Wenzhe Tang, Chengqi Xue, China Training stress models on open-access data for a continuous human state monitoring platform Danielle Benesch, Tanya Paul, Alexandre Marois, Canada NeuroTeaming: Using power spectral density for adjusting teaming dynamics in Pilot-AI task allocation Tanya Paul, Daniel Lafond, Alexandre Marois, UK Validation of vigilance decline capability in a simulated test environment: A preliminary step towards neuroadaptive control Andra Mahu, Amandeep Singh, Florian Tambon, Benoit Ouellette, Jean-François Delisle, Tanya Paul, Foutse Khomh, Alexandre Marois, Philippe Doyon-Poulin, Canada	
44	**Wearable Technologies and Sensors** Co-Chairs: Christoph Szedlak, Germany and Ying-Chia Huang, Taiwan	HFWT
10:30-12:00 - AHFE 11	Developing smart trousers for university footballers for self-training purposes Ying-Chia Huang, Taiwan Wearable technology and machine learning for assessing physical fatigue in industry 4.0 Carlos Albarrán Morillo, Micaela Demichela, Devesh Jawla, John Kelleher, Italy Advancing the development of intelligent wearable robots for elderly assistance: An innovative user-centric co-creation (UC3) framework Vivian Lou, Yuen Man Cheng, Ning Xi, Hong Kong SAR China A systematic approach to comprehend user needs for wearable devices: Application of the extended FEA consumer needs model So-Hyun Lee, Young A. Koh, Juyeon Park, South Korea Unveiling decision-making dynamics through wearable sensors in business simulation games: A survey Christoph Szedlak, Germany Digital health applications to establish a remote pre-diagnosis through intelligent wearable devices: Enhancing healthcare accessibility in China Yangyang Pan, Yanchi Liu, Dai Pan, Yuting Chen, China	

12:00-13:30 Enjoy lunch at the restaurant of your choice

45	**Cross-Cultural Decision Making** Co-Chairs: Jussi Okkonen, Finland and Noriko Okabe, Japan	SOE
13:30-14:30 - AHFE1	Information ergonomics and factors related to sociotechnical environments of work among Ghanaian HE faculty members Jussi Okkonen, Reetta Oksa, Edward White, Mia Laine, Finland Trust and satisfaction in the airline: Retention of skilled employees during COVID 19 Noriko Okabe, Japan Measuring safety culture in the disaster resilient society context: An actionable toolkit Gabriella Duca, Giovanni Gugg, Vittorio Sangermano, Antonio Di Palma, Italy Assessment of health and safety knowledge in the educational sector in Sharjah (public) schools Najla Alshamsi, Ahmed Rasdan Bin Ismail, UAE Visualizing the development and trend of sustainability science and social-ecological system research Yu Liu, Izzy Yi Jian, Yangyang Pan, Baokang Wang, Peter Hasdell, Hong Kong SAR China An interactive aesthetic study of a digital display app for Chinese copper chisel paper cutting cultural gene Yuting Zhao, Wei Bu, China	
46	**Design, Co-Creation and Innovation I** Co-Chairs: Amic Ho, Hong Kong SAR China and Tero Reunanen, Finland	CIE
13:30-14:30 - AHFE 2	Business creation activities to optimize the outcomes of RDI projects in an applied science university – The Spin&Launch incubator Tero Reunanen, David Oliva, Finland Design of public space transformation under the lens of anthropology Yijun Lou, Yan Luo, China Proposal of color queue creation task for automatic divergent thinking evaluation Taiki Matsunaga, Ryunosuke Fukada, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Japan Driving citizen frugal innovation: leveraging insights in the FRANCIS project to improve the engagement of marginalized groups in innovation challenges Liza Wohlfart, Adrian Sins, Carmen Antuña Rozado, Martin Maga, Germany/ Finland Fostering corporate innovation activities through artist-created boundary media Taishi Kamiya, Japan The effects of short-term meditation on the creativity of novice designers: A pilot design task study using TTCT-figural assessment Yaning Li, Yu Zhang, Yumeng Yang, Zihan Tang, Zhenxian Hu, Chengxi Xie, Ziao Pan Chengye Chen Tuoda Qi, Zhixian Zhu, Qian He, Shumin Li, Yuan Yin, Ji Han, Peter Childs, Gaetano Cascini, Meng Li, China	

47	**Human Factors in Game Design** Co-Chairs: Masashi Yamada and Akane Fuchigami, Japan	HFGD
13:30-14:30 - AHFE 3	Beyond gaming: Neuroscientific insights into VR through Gameflow Analysis Jun Chen, Yazhou Chen, China Designing mobile game input unreachability: risks when placing items out of the functional area Wiliam Andrade, Australia Impressions of musical pieces in the Pokémon series Masaya Fukasawa, Masashi Yamada, Japan Effects of color of clothes on the impressions of a male character in a video game Akane Fuchigami, Masashi Yamada, Japan Impression change of a female character in illustration by shadow Rinka Yamaguchi, Masashi Yamada, Japan Design exploration of an augmented reality exergame for walking training: target-by-target vs. multi-target guidance Weiyi Li, Pengbo Feng, Hongtao Ma, Longfei Ma, Hengyu Zhang, Yuanyuan Liu, China	
48	**Public Transportation and Safety I** Co-Chairs: Mark Fleming, Canada and Yuichi Saito, Japan	RR
13:30-14:30 - AHFE 4	Safety culture indicators - For improvement not assessment Mark Fleming, Rebecca Cairns, Canada Design of a human-machine mediator to achieve drowsy driving detection and vehicle guidance control to roadside zone Yuichi Saito, Makoto Itoh, Toshiyuki Inagaki, Japan An assessment of two pedestrian safety inventories Curtis Craig, Marshall Mabry, Bradley Drahos, William Kessler, Thomas Lenz, Kara Olander, Nichole Morris, USA How can the analysis of human factors in risky situations encountered by users of new forms of mobility improve their safety in the city? Benjamin Brunet, Samuel Aupetit, Philippe Cabon, France Drivers takeover behaviors, eye movement patterns, and subjective feelings in automated vehicles: Effects of leading vehicle's driving style and type Shan Liu, Shen Dong, Jie Xu, Zhen Yang, China Impact of exposure on shared autonomous shuttle perceptions Maranda McBride, USA	

49	**Artificial Intelligence: Utilization and Innovations** Co-Chairs: Riccardo Pecori, Italy and Tim Schrills, Germany	AISC
13:30-14:30 - AHFE 5	Why do or don't you provide your knowledge to an AI? Philipp Renggli, Toni Waefler, Switzerland Application of large language models in stochastic sampling algorithms for predictive modeling of population behavior Yongjian Xu, Akash Nandi, Evangelos Markopoulos, UK/USA/Finland Predictive functions of artificial intelligence for risk assessment in remote hybrid work Giuditta Simoncelli, Mario Luca Bernardi, Laura De Angelis, Sara Anastasi, Emanuele Artenio, Riccardo Pecori, Michela Bonafede, Italy Positive interactions with intelligent technology through psychological ownership: A human-in-the-loop approach Bianca Dalangin, Stephen Gordon, Heather Roy, USA Evaluation of a scale to assess subjective information processing awareness of humans in interaction with automation & artificial intelligence Tim Schrills, Marvin Sieger, Marthe Gruner, Thomas Franke, Germany Human-centered explainable-AI: An empirical study in process industry Yanqing Zhang, Emmanuel Brorsson, Leila Methnani, Elmira Zohrevandi, Nilavra Bhattacharya, Andreas Darnell, Rasmus Tammia, Sweden	
50	**Human Factors for Apparel and Textile Engineering: Wearability and Fashion** Co-Chairs: Hiu Tung Yu, Hong Kong SAR China and Yiming Fan, UK	HFATE
13:30-14:30 - AHFE 6	Exploring lower body asymmetry in female fencers: implications for enhanced legging design and performance Ruixin Liang, Joanne Yip, Frances Wan, Xiaolu Li, Jun Zhang, Hong Kong SAR China Second-hand fashion and its impact on business sustainability Alejandra Torres Jaramiilo, Juan Manuel Maldonado-Matute, Ana Armijos, María José González Calle, María Isabel Arteaga Ortíz, Pedro Fernando Guerreo Maxi, Ecuador Reinterpretation of brand fashion archives. Recombining materials and techniques for new applications Maria Antonietta Sbordone, Ilenia Carmela Amato, Martina Orlacchio, Angelo Rega and Sara De Toro, Italy Design and development of large language model applied to fashion analysis Yiming Fan, Yinan Wang, UK Garment fit evaluation via customer feedback on daily wear Nga Yin Dik, Wai Kei Tsang, Ah Pun Chan, Kwan Yu Lo, Hong Kong SAR China An investigation of garment construction and textile properties in enhancing the plus-size shapewear bra effectiveness Hiu Tung Yu, Pak Yiu Liu, Ka Po Lee, Xiaolu Li, Joanne Yip, Hong Kong SAR China	

51	**Transformative Governance and Technological Innovation Advancing Social Impact** Co-Chairs: Marina Weck, Finland and Tarcisio Abreu Saurin, Brazil	HFBMS
13:30-14:30 - AHFE 7	Supporting adoption of circular business models in small and medium enterprises: Circular readiness assessment framework Marina Weck, Meri Jalonen, Heidi Kerkola, Finland Empowering women in the public sector: A challenge-based learning approach to achieving gender equity Josephine Lusi, Yolanda Martinez, Ingrid Pappel, Kenya/Estonia Econometric analysis of the determining factors of default in Chilean companies Hanns De la Fuente-Mella, Nelson Lay, Enyelbert Muñoz Anza, Chile Designing a P\proof of concept for a virtual competence assistant Markko Liutkevicius, Madis Kõosaar, Sadok Ben Yahia, Estonia The cost-effectiveness of the resilient performance of truck drivers in road freight transportation Claudia Medeiros, Tarcisio Abreu Saurin, Brazil The role of data intermediaries for small- and medium-sized enterprises in the innovation ecosystems of the Nordic-Baltic silver economy Eric Blake Jackson, Marina Weck, Ingrid Pappel, Estonia	
52	**User Experience and Kansei Research and Product Development Methodologies I** Co-Chairs: Jun Iio, Japan and Siqi Yu, China	KE
13:30-14:30 - AHFE 8	Sentiment analysis of self-driving cars using text mining Donghwan Kim, South Korea What are your impressions? Proposal for emotional assessment platform Jun Iio, Japan Comparison of usability, physical and cognitive ergonomics risks of using a laptop and tablet computers for online learning: A field experimental study Totsapon Butmee, Thailand Mechanism of multidimensional subjective perception of automotive interior fabric materials Siqi Yu, Guo Yongyan, China Facilitation of Kansei engineering design process with LLM multi-agent discussion Shigekazu Ishihara, Taku Ishihara, Keiko Ishihara, Japan	

53	**Innovations in Patient-Centered Care** Co-Chairs: Zoher Rafid-Hamed, Canada and Tim Arnold, USA	EHMD
13:30-14:30 - AHFE 9	Patient centered care: Medical error disclosure guidelines across Canada Jay Kalra, Zoher Rafid-Hamed, Bryan Johnston, Patrick Seitzinger, Canada Stepped wedge design analyses under pandemic`s period effect: Alternative approach using non-specific neck pain intervention data Matthew Kerry, Andrea Aegerter, Achim Elfering, Markus Melloh, Switzerland Evaluation of patient stress during mammograms through surface electromyography analysis Krystyna Gielo-Perczak, Riley McNaboe, Hugo Posada-Quintero, USA Integrating intelligent control into far UVC wearable garments for on-demand airborne viral and bacterial protection Layton Pratt, Ryan Robertson, Martin Mintchev, USA Investigating the barriers of high quality of care in virtual visits using the AcciMap framework Maryam Tabibzadeh, Mohammad Mokhtari, USA Words about work performance and the company they keep Tim Arnold, Helen Fuller, Ruth Reeves, USA	
54	**Intelligent Applications with IoT in Digital Health** Co-Chairs: Trygve Thomessen, Norway and Jonas Birkle, Germany	CCIoT
13:30-14:30 - AHFE 10	Requirements for virtual reality-based trainings of human-robot interaction Jonas Birkle, Verena Wagner-Hartl, Germany How to manage the safety of service robots operating in coexistence with demented patients Trygve Thomessen, Norway PREPARIO - Service design for a connected and automated food preparation platform Wolfgang Weiss, Henrik Schneider, Sandra Draxler, Manuela Ferreira, Adriana Antunes, Celine Sommer, Austria/Denmark/Portugal SmartAktiv: A tablet- and virtual reality-based training for individuals with cognitive decline Anna Schultz, Lucas Paletta, Amadeus Linzer, Judith Goldgruber, Ursula Berger, Wolfgang Kratky, Silvia Russegger, Sandra Draxler, Thomas Orgel, Amir Dini, Michael Schneeberger, Martin Pszeida, Wolfgang Weiss, Thomas Pfitzer, Marisa Koini, Sandra Schüssler, Julia Zuschnegg, Austria Towards the assessment of resilience parameters from wearable biosignal- and mobile eye tracking-based features Martin Pszeida, Jochen Mosbacher, Michael Schneeberger, Sandra Draxler, Wolfgang Weiss, Silvia Russegger, Dietrich Albert, Lucas Paletta, Austria	

55	**Digital Accessible Applications** Co-Chairs: Yanjie Zhang and Shuyi Cheng, China	AATDE
13:30-14:30 - AHFE 11	**Unraveling interaction challenges for deaf and hard-of-hearing users: An exploration of digital content and interfaces accessibility** Olarinde Farayola, Dastyni Loksa, Jinjuan Feng, USA **Investigation of potential fNIRS-based biomarkers in multi-domain virtual reality tasks for MCI assessment** Yanjie Zhang, Su Han, Fan Li, Donglin Li, China **Investigating the use of blockchain technology in fashion and textile industry** Simge Güner, Arzu Vuruskan, Turkey **Mitigating orbital debris via responsible system design** Janne Heilala, Kalea Texeira, Finland **The Impact of digital twins technology in maritime fleet and safety management** Evangelos Markopoulos, Panagiotis Markopoulos, Akash Nandi, John Faraclas, Chris Leontopoulos, Stavros Meidanis, Dimitris Monioudis, Grigoris Filahtos, Finland/UK/USA/Greece **Revitalizing urban village environments through digital twin technology: A case study of Nantou Ancient Town** Yangyang Pan, Yuanli Yu, Izzy Yi Jian, Yu Liu, Sky Tiantian Lo, Shuyi Cheng, China	

56	**Physical Ergonomic Risk Assessment: Methods and Techniques** Co-Chairs: Henrijs Kalkis, Latvia and Jongseong Gwak, Japan	PEHF
14:30-16:00 - AHFE 1	**Ergonomic risks at work and preventive measures for waste sorting operators and garbage collectors in waste sorting company** Henrijs Kalkis, Zenija Roja, Latvia **An investigation of impacts of caffeine intake and lighting conditions on arousal and task performance using Uchida-Kraepelin Psychodiagnostic Test** Jongseong Gwak, Kenshiro Ide, Japan **Managing ergonomic risk exposures to improve musculoskeletal health in the Irish workplace** Frank Power, Ireland **Application of wearable technologies for the assessment of an ergonomic intervention in hairdressers: Preliminary results** Alessio Silvetti, Ari Fiorelli, Antonella Tatarelli, Lorenzo Fiori, Giorgia Chini, Tiwana Varrecchia, Adriano Papale, Alberto Ranavolo, Francesco Draicchio, Italy **HARI: A new approach to quantifying MSD risk factors for hands and fingers** Olfa Haj Mahmoud, Anthony Ribot, France **Ergonomic work environment risks for diesel locomotive drivers in Latvia and health promotion measures** Diana Madelane, Henrijs Kalkis, Zenija Roja, Latvia **Ergonomic challenges in industrial machinery: Risks and human factors considerations** Hartini Mahmood, Mahar Diana Hamid, Che Rosmani Che Hassan, Malaysia	

57	**Social and Occupational Risk Assessment** Co-Chairs: Ali Aljaroudi, USA and Emilie Stroh, Sweden	SOE
14:30-16:00 - AHFE 2	The use of protective hearing devices and perceived noise disturbance and social climate in open office environments Emilie Stroh, Roger Persson, Jonas Borell, Sweden Human factors and facial recognition technology in emergency response: An integrative review Aimee Roundtree, USA Fitting new needs and requests of transport-related professions: The freight industry and truck drivers' profession Catarina Neto, Anabela Simoes, Portugal Ergonomic risk factors of musculoskeletal injuries in aviation maintenance Ali Aljaroudi, USA Identification of risk factors in work environments with ornamental aquaculture activities in Morelos Carlos Alejandro Martinez-Ibanez, Martha Roselia Contreras-Valenzuela, Mexico Human factors and ergonomics in patient safety within the framework of environmental, social and governance Olga Veilande, Henrijs Kalkis, Zenija Roja, Latvia	
58	**Ergonomics in Urban Planning** Co-Chairs: Andrea Reindl, Austria and Teresa Marrone, Italy	SUPI
14:30-16:00 - AHFE 3	How carsharing services in residential housing impacts modal split and car usage – a multi-method investigation including legal challenges Andrea Reindl, Austria Power to the citizens: Factors fostering satisfaction with citizen participation in urban planning Maria Kreusslein, Madlen Günther, Germany Evaluation of architectural perception in urban industrial heritage buildings based on eye tracking technology Xiaozhen Zhang, Yiming Lu, Yakun Luo, Rui Yang, Xiaonan Yang, China The resilience of small and troubling neighbourhoods for improving the destination brand of the cities. A case from the neighbourhoods of Naples Teresa Marrone, Giuseppe Fabio Cantone, Luigi Cantone, Vincenzo Basile, Italy The transformation of design strategy for triple ecological methodology of smart city Yi Chen Li, China Review of the Latent Demand Method for pedestrian and biking facility planning in California Maria Chierichetti, Fatemeh Davoudi, USA The adoption of current safety practices for the construction of telecommunication masts and towers: A principal component analysis Julius Egbobawaye, Clinton Aigbavboa, Osamudiamen Otasowie, South Africa	

59	**Human-Centered Design and Training for Maritime Transportation** Co-Chairs: Gesa Praetorius and Charlott Sellberg, Sweden	MAR
14:30-16:00 - AHFE 4	Towards a vision of Bridge Zero – participatory design of automated maritime solutions Hanna Koskinen, Jari Laarni, Marja Liinasuo, Antti Hynninen, Douglas Owen, Victor Bolbot, Meriam Chaal, Finland The automation of feedback in simulation-based maritime training: Design ethnography and learning experience design for an intelligent learning system Charlott Sellberg, Amit Sharma, Sweden Enhancing scenario design in maritime education and training Susan Harrington, Sweden Multi-modal data analysis for enhanced nautical skill development Hui Xue, Tae-Eun Kim, Robert Grundmann, Norway/Germany Assisting human-centred ship bridge design through virtual reality Bingyu Mu, Fang Bin Guo, Xiaohui Chu, UK A mixed-method approach for assessing passengers' perspectives of autonomous urban ferries Leander Pantelatos, Ole Andreas Alsos, Mina Saghafian, Øyvind Smogeli, Asun Lera St. Clair, Norway	
60	**Navigating the Cybersecurity Landscape in Healthcare** Co-Chairs: Kitty Kioskli, Netherlands and Theo Fotis, UK	CYBER
14:30-16:00 - AHFE 5	Integrating human factors into data-driven threat management for overall security enhancement Mohammed Alwaheidi, Shareeful Islam, Spyridon Papastergiou, Kitty Kioskli, UK The human factor impact on a supply chain tracking service through a risk assessment methodology Dimitris Koutras, Kitty Kioskli, Panayiotis Kotzanikolaou, Greece A self-organized Swarm Intelligence Solution for healthcare ICT security Kitty Kioskli, Spyridon Papastergiou, Theofanis Fotis, Stefano Silvestri, Haralambos Mouratidis, UK Development of approach for improving cybersecurity governance for factory systems Hiroshi Sasaki, Kenji Watanabe, Ichiro Koshijima, Japan Human factors and cybersecurity in NHS virtual wards Theofanis Fotis, Kitty Kioskli, Haralambos Mouratidis, UK Cracking the code: How social media and human behavior shape cybersecurity challenges Foteini Markella Petropoulou, Emmanuel Varouchas, Greece	

61	**Interdisciplinary Design Process** Co-Chairs: Joyce Thomas, USA and Megan Strickfaden, Canada	IPID
14:30-16:00 - AHFE 6	Mixed reality in physical rehabilitation, opportunities and challenges Youngmi Christina Choi, Kelly Fischer, UK Human-centered design in optimizing fitness benches Shuoning Shi, Simrun Sethi, Suresh Sethi, USA Designing products through the lens of the material landscape Joyce Thomas, Megan Strickfaden, USA/Canada Transitional learning through unexpected objects Megan Strickfaden, Joyce Thomas, Canada/USA History lives on: Interdisciplinary design to uplift rural communities David Smith, Gorham Bird, USA Mycography and biodesign pedagogy: Concepts and methods for creating living posters Devon Ward, USA Crafting improved vision: A comprehensive evaluation of products supporting individuals with vision challenges Juanjuan June He, Koya Chen, USA	
62	**AI and Creativity in Mixed Expanding Service Ecosystems** Co-Chairs: Clara Bassano, Italy and Hisashi Masuda, Japan	HSSE
14:30-16:00 - AHFE 7	Support vector machines models for human decision-making understanding: A different perspective on emotion detection Paolo Barile, Aysel Alizada, Clara Bassano, Italy Designing towards productivity: A centralized AI assistant concept for work Tam Cao, Yi Qing Khoo, Shivani Birajdar, Jurine Gong, Chia-fang Chung, Yassi Moghaddam, Anbang Xu, Hridhay Mehta,, Aaditya Shukla, Zhilin Wang, Rama Akkiraju, USA The customer's preparedness and product quality - impacts on customer satisfaction Louis E. Freund, Assil Talbi, Stephen K. Kwan, USA Enhancing trust in LLM chatbots for workplace support through user experience design and prompt engineering Zhiyun Gong, Shivani Birajdar, Tam Cao, Yi Qing Khoo, Chia-fang Chung, Yassi Moghaddam, Anbang Xu, Hridhay Mehta, Aaditya Shukla, Zhilin Wang, Rama Akkiraju, USA Use of a robot and the personalization of information provision in tourism marketing promotions Hisashi Masuda, Kanae Kochigami, Yin Jou Huang, Japan Harmonizing offline and online experiences: The AI in museums Yulin Shan, Ruilin Zhu, Hisashi Masuda, UK	

63	**Innovations in Medical Technology and Design** Co-Chairs: Helen Fuller, USA and Benedikt Janny, Germany	EHMD
14:30-16:00 - AHFE 8	**Human factors validation of collaborative medical workflows through multi-user workflow simulation: A case study in interventional radiology** Benedikt Janny, Robert Klank, Julian Glandorf, Frank Wacker, Bennet Hensen, Julia Moritz, Germany **Holograms for minimally invasive surgery training and planning** Alexandra Poltorak, Charli Hooper, Yang Cai, USA **Design for multiverse healthcare: The innovation spaces and transformation paths of the medical and health industry in the era of digital survival** Yuqi Liu, China **Comprehensive hand anthropometry from a diverse population** Angelica Mangahas, Karla Sintigo, Ahmed Basager, Quintin Williams, Heather Weinreich, USA **Back skin deformation during anaerobic exercises for ergonomics design application** Tsai-chun Huang, Bingxue Li, Hong Kong SAR China **Incorporating human factors methods into healthcare process improvement work** Helen J. A. Fuller, Kathleen Adams, Tee Achee, Tim Arnold, USA **Analysis of procedures and instruments for the digitization of the foot and ankle aimed at orthosis development** Rosangela Santos, Ademir Marques Jr, Flávio Cardoso Ventura, João Silva, Amanda Lima, Marcus Bueno, Milene Checoni, Brazil	
64	**Risk Management and Analysis** Co-Chairs: Ales Bernatik, Czech Republic and Mark Miller, USA	SMHF
14:30-16:00 - AHFE 9	**Prevention and risk analysis of hydrogen refueling station – case study** Ales Bernatik, Vojtech Jankuj, Juraj Sinay, Czech Republic **Occupational health and safety risk management with help of ARIS software: Case Study** Taivo Kangilaski, Jaanus Kaugerand, Estonia **Safety behaviour and safety management: System dynamics modelling of safety rule violation behaviour in a high-risk mining system** Tendai Mariri, Aletta Odendaal, South Africa **Application of the functional resonance analysis method (FRAM) to the occupational safety and health management** Joana Afonso Fernandes, Matilde Rodrigues, Pedro Arezes, Portugal **Integrated approach to risk management of hazardous substances in industrial settings** Lucie Kocůrková, Barbora Martinikova, Pavel Danihelka, Ales Bernatik, Czech Republic **Tired enough to be dangerous: Designing optimal fatigue risk management for aviation maintenance to complement human factors safety reporting** Mark Miller, Bettina Mrusek, Jeff Herbic, USA **Protecting the first responders: Improving FR situational awareness through multi-modal interfaces leveraging the ubiquitous personal smartphone** Christian Knecht, Ravi Kanth Kosuru, Germany	

65	**Human Factors in Automotive Engineering and Mobility Services** Co-Chairs: Woojin Choi, South Korea and Dennis Befelein, Germany	RR
14:30-16:00 - AHFE 10	X-ray analysis on the difference in ride comfort affected by increased number of air bladders in car seats Woojin Choi, Jueun Shin, Sunwoong Kim, Sohn Moonjun, South Korea The impact of secondary in-vehicle display animations and their location on driver attention and glance behavior Dennis Befelein, Christian Purucker, Frederik Schewe, Janik Dostert, Alexandra Neukum, Germany Perceived comfort prediction by occupant package layout and vehicle seat engineering factors Sunwoong Kim, South Korea What do older people think of mobility as a service? Rich McIlroy, UK Seat comfort evaluation method using x-ray: A case study in compact sedan Jueun Shin, Woojin Choi, Sunwoong Kim, South Korea Hybrid intelligent logistics system for a recycling center Markus Sihvonen, Finland Optimized design of road street furniture for pedestrian traffic - Smart zebra crossings Qian Shi, China	
66	**Design Evaluation and User Perspective** Co-Chairs: Chieh-ju Huang, Taiwan and Samuel Aupetit, France	UUE
14:30-16:00 - AHFE 11	Evaluation of student attitudes in problem-based learning within interdisciplinary integrated courses on user interface design Chieh-ju Huang, Taiwan Prospects of autonomous vehicles in evolving countries: A users' perspective Izza Anwer, Irfan Yousuf, Pakistan Experimentation of an innovative device for pedestrian safety: An eye tracking study in real traffic conditions Kylian Looten, Camille Gillet, Samuel Aupetit, France Design Feeling: A symmathetic approach for design processes Gustavo Simas Da Silva, Vânia Ribas Ulbricht, Brazil Innovative design research of time-honored brands based on Haipai Cultural Genes: A case study of Maochang Glasses Wu Jiawen, China Optimizing human-machine interface design through information transparency in autonomous driving systems Yuhan Hou, Fenghui Deng, China The effect of control-response ratio on commercial controllers Pei-chia Wang, Yen-chun Huang, Taiwan	

Refreshments: 16:00-16:30 • Location Lobby Level

67	**Increasing Innovation Capability between Engineering and Creative Domains** Co-Chairs: Kimmo Vänni, Finland and Asta Savanevičienė, Lithuania	HFBMS
8:30-10:00 - AHFE 1	Experimental research design for investigation of the impact of managerial behavior on employee stress Asta Savanevičienė, Živilė Stankevičiūtė, Lina Girdauskiene, Vilma Pluščiauskaitė, Daivaras Sokas, Audrys Kukulskis, Andrius Rapalis, Lina Jankauskaitė, Audrys Kukulskis, Rimvydas Eitminavičius, Lithuania Exploring consultant roles: Analyzing power dynamics through expert and referent power bases Rotem Lachmi, Batia Ben-hador, Yael Brender-Ilan, Israel How to set up design skills appropriate for each organization Toshiya Sasaki, Japan The investigation of systematic micro-refresh with auditory stimuli on intellectual work Orchida Dianita, Takuto Higashimaki, Reika Abe, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Fumiaki Obayashi, Japan Evolving anthropometric traits of Slovak consumers and their impact on furniture and furniture marketing Peter Starchon, Milos Hitka, Milos Gejdos, Andrej Miklosik, Slovakia Relationship between digital stress and innovation capacity Kimmo Vanni, Antti Syvanen, Jarmo Viteli, Finland An experimental study on the effect of short-term airflow on concentration during intellectual work Reika Abe, Takuto Higashimaki, Kento Nomura, Orchida Dianita, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Fumiaki Obayashi, Japan	
68	**Human Factors in Robotics Research: Human-Robot Research in Different Contexts** Co-Chairs: Ranjana Mehta, USA and Paola Palmitesta, Italy	HFRDUS
8:30-10:00 - AHFE 2	A method for human-robot collaborative assembly action recognition based on skeleton data and transfer learning Shangsi Wu, Xiaonan Yang, Peng Wang, China What we do in the shadows: Overnight sUAS disaster response exercise captures emergent human-robot teaming behaviors Ranjana Mehta, S. Camille Peres, Robin Murphy, Aakash Yadav, Gracie Woodland, Thomas Manzini, USA Combinatorial effects of unmanned vehicles on operator's mental workload and performance for searching Yonghao Huang, Omar Alqatami, Wei Zhang, China Design a robot that is able to...: Gender stereotypes in children's imagination of robots Paola Palmitesta, Margherita Bracci, Francesco Currò, Stefano Guidi, Enrica Marchigiani, Oronzo Parlangeli, Italy Requirements for successful human robot collaboration: design perspectives of developers and users in the scope of the EU Horizon Project FELICE Felix Dreger, Melanie Karthaus, Yannick Metzler, Felice Tauro, Vincenzo Carrelli, Georgios Athanassiou, Gerhard Rinkenauer, Germany	

69	**Panel: Training and Human Performance Issues in Human-Non-Human Teaming** Co-Chairs: Heather Lum and Gabriella Hancock, USA	HFSIM
8:30-10:00 - AHFE 3	Human-non-human team modeling Heather Lum, USA Training for resilience in humans and systems Peter Hancock, USA Learning complex tasks from human or AI instructors: Considerations for human performance Bradford Schroeder, USA Training performance and coping: Adaptive versus maladaptive approaches Gabriella Hancock, USA	
70	**Interdisciplinary Design Practice** Co-Chairs: Yong-Gyun Ghim and Cliff Shin, USA	IPID
8:30-10:00 - AHFE 4	Implementation of digital technologies in SMEs: An analysis of the implementation status for human factors with the recommendations for action Tobias Schmallenbach, Matthias Vogel, Giuseppe Strina, Germany Exploration of service robot morphology through generative AI applications Yong-Gyun Ghim, USA Applying pattern awareness to human centered design and systems thinking Braden Trauth, USA VR-based evaluation of design elements for restaurant service robots Domagoj Bui, Yong-Gyun Ghim, USA Brand gene-informed artificial intelligence generated content (AIGC) for the styling design of motorcycle headlights Jun Zhou, Wudi Hong, China Exploring cross-sensory perception: The correlation of visual and tactile sensations in home product materials Peixuan Wang, Qiong Zhang, Xueqin Li, Tao Zhang, Yuanyuan Liu, China Integrating causal layered analysis into design: Enhancing user research for deeper insights Zixin Zhuang, Yonghong Liu, Chen Qingxia, China	
71	**Design, Co-Creation and Innovation II** Co-Chairs: Hye Jeong Park, USA and Patrick Rupprecht, Austria	CIE
8:30-10:00 - AHFE 5	Developing college students' creative problem-solving ability: The roles of empathy, prosocial motivation, and cultural differences Hye Jeong Park, Yongyeon Cho, Huiwon Lim, USA Hybrid intelligence: An approach towards the symbiosis of artificial and human creativity and interaction in the design and innovation process in SMEs Patrick Rupprecht, Walter Mayrhofer, Austria Sustainability in innovation and product development: A holistic study on the importance of the influencing human factor Andreas Eursch, Sophie Steinmaßl, Germany A pilot study for understanding the lying neck posture with flexion and extension Yuqian Wang, Junjian Chen, Yan Luximon, Hong Kong SAR China Exploring satisfaction of the indoor environment and sustainable development of design strategies for classrooms in remote areas schools Ting Huei Goh, Sung-chin Chung, Yi-pin Lin, Taiwan Implementation of a centralised system for managing processes in cultural institutions Małgorzata Oleś-Filiks, Robert Waszkowski, Poland	

72	**Body Intelligence** Co-Chairs: Shuichi Fukuda, Shin'ya Nagasawa and Yoshifusa Matsuura, Japan	APD
8:30-10:00 - AHFE 6	Embodied cognition in customer experience (CX) Shinya Nagasawa, Japan Designing an application to encourage appreciation of body's 'Hyoh-Joh' in movement: Supporting embodied knowledge learning from phenomenological view Takahito Horiuchi, Japan Analysis of the impact of playing area size on ball retention time and number of touches in soccer and ice hockey possessions: A case study Masayuki Yamada, Yuta Ogai, Sayaka Tohyama, Japan Developing AI video analysis systems to explore human behavior in infant and ethnographic footage Yuta Ogai, Yuto Ono, Yasushi Noguchi, Sayaka Tohyama, Hideaki Kondo, Masayuki Yamada, Japan Awareness and empathy in self-body control for manufacturing skill education Yoshifusa Matsuura, Japan Increasing importance of body intelligence-the age of feeling Shuichi Fukuda, Japan Analysis of the emotional design and application of educational parent-child interactive products Changfeng Jiang, Rui Xu, Hongjun Yu, Danmeng Xu, Ziqiong Yang, China	
73	**Training Technologies and Learning Strategies I** Co-Chairs: Tina Haase, Germany and Ping Hsun Hsieh, Taiwan	TELS
8:30-10:00 - AHFE 7	Slicer deconstruction training for improving students' three-dimensional modeling ability Meng-Cong Zheng, Li-Jen Wang, Taiwan Chinese college students' use of self-regulated learning strategies in online general education courses Mei Yang, Yanyi Li, Qin Gao, P. L. Patrick Rau, China A case study on technology selection and didactical design for immersive learning and dialog spaces Tina Haase, Thu Ha Claudia Vuong, Julia C. Arlinghaus, Germany Optimization of English learning app interfaces through contextual learning Shuo-fang Liu, Ping Hsun Hsieh, An Yu Su, Yi Chieh Wu, Taiwan Immersive assistive technologies for knowledge transfer of crafts: Exploration and technical challenges Ian Garcia, Jouke Verlinden, Belgium Flexible and dynamic classroom layout – a participatory design strategy to facilitate educational equality Yuanyuan Wang, China Assessing creativity in higher education: An action research approach to developing effective assessment methods in creative education Amic Ho, Hong Kong SAR China	

74	**Designing Future Service Business: Using Data to Enable New Forms of Value Creation** Co-Chairs: Rainer Nägele and Jens Neuhüttler, Germany	HSSE
8:30-10:00 - AHFE 8	Governance of interconnected value creation systems: Rules of engagement for effective cooperation among companies in a competitive context Rainer Nägele, Anne Sophie Tombeil, Peter Ohlhausen, Anja Braun, Daniel Palm, Luca Dolgow, Alban Hajzeri, Gregor Henn, Sandra Luther, Bjarne Meyer-Clasen, Franziska Sauter, Isabel Schlecker, Germany Towards cognitive service systems Md Abul Kalam Siddike, Jens Neuhüttler, Germany Co-creation of Value-in-Context in high-quality service: A case study Miwa Nishinaka, Hisashi Masuda, Japan A form of value co-creation in an innovation success team Takaki Yasuda, Koki Ijuin, Chiaki Oshiyama, Naoshi Uchihira, Takuichi Nishimura, Japan Role of T-shape in IT academic research Leonard Walletzký, Zuzana Schwarzová, Janka Marschalková, Klára Kubíčková, Czech Republic	
75	**Human Factors Challenges in AI** Co-Chairs: Jenya Edelberg, USA and Ahad Alotaibi, UK	GIC
8:30-10:00 - AHFE 9	Created by humans & AI? Jenya Edelberg, USA Using ChatGPT to support criminal investigations: A comparative study of AI and human query Ahad Alotaibi, Chris Baber, UK The potential issues and crises of artificial intelligence development Lingxuan Li, Wenyuan Li, Dong Wei, China Ethical reflections on computationally enabled design in the age of digital intelligence Yijie Jia, Yi Shu, Jiamin Bu, China	
76	**Design Applications and User Experience** Co-Chairs: Joy McKay, UK and Gu Hongqing, China	UUE
8:30-10:00 - AHFE 10	Using human factors in the iterative design process of mobility as a service (MaaS): Challenges and solutions for app design Joy Mckay, Em Thorogood, John Preston, UK Comparing survey scores, transcriptions and questionnaires: What can we learn about the impact of trust when using MaaS? Em Thorogood, Joy McKay, John Preston, UK Human factor needs for highly available hyper converged appliance for containerized platform Shajeer Mohammed, Sathyanarayana Ramadas, India Product Innovation design through Integrated TRIZ-HCD methodological approach Qingchen Li, Yajun Li, Tianyu Wu, Yiqian Zhao, China The outdoor intelligent work space design based on KANO model Yuquan Zhou, Li Xu, Xiaoxuan Jiang, Ao Yu, China The application and trends of semiotics in design Gu Hongqing, China Research on the impact of human-computer interaction tasks in smart cockpit on user experience satisfaction Tianxiong Wang, Yuanyuan Wang, Mengmeng Xu, Long Liu, Jing Chen, China	

77	**Cybersecurity and Organizational Resilience and Agent Based Modeling** Co-Chairs: Palvi Aggarwal and Sridhar Venkatesan, USA	CYBER
8:30-10:00 - AHFE 11	Does penalty help people learn to detect phishing emails? Kuldeep Singh, Palvi Aggarwal, Cleotilde Gonzalez, Prashanth Rajivan, USA A survey of agent-based modeling for cybersecurity Arnstein Vestad, Bian Yang, Norway SoK: A comprehensive analysis of end user's susceptibility to phishing emails Blanca Galvan, Palvi Aggarwal, Kuldeep Singh, USA Mental firewall breached: Leveraging cognitive biases for enhanced cybersecurity Rebecca Pharmer, Rosa Martey, Giovanna Henery, Ethan Myers, Indrakshi Ray, Benjamin Clegg, USA Analyzing important factors in cybersecurity incidents using table-top exercise Kenta Nakayama, Ichiro Koshijima, Kenji Watanabe, Japan Discovering cognitive biases in cyber attackers' network exploitation activities: A case study Palvi Aggarwal, Sridhar Venkatesan, Jason Youzwak, Ritu Chadha, Cleotilde Gonzalez, USA Exploring user perspectives on prioritizing security through software updates Mahzabin Tamanna, Joseph Stephens, Abdolhossein Sarrafzadeh, Mohd Anwar, USA	
	Refreshments: 10:00-10:30 • Location Lobby Level	
78	**Individualization of Services Using Generative AI** Chair: Christian Zagel, Germany	HSSE
10:30-12:30 - AHFE 1	Beyond traditional boundaries: The impact of generative artificial intelligence on higher education Johannes Stübinger, Germany Future skills and (generative) AI – new era, new competencies? Sarah Haase, Germany How do we speak metaverse? The role of human communication in digital spaces Nadja Frank, Germany Developing future skills through a sequential module structure and practical orientation: A case study of the Bachelor Program in Applied Digital Transformation Christian Grosch, Germany Environmental impact of video streaming from users' perspectives Dam Thi Thien Nhi, Margarita Chuloy, Leonhard Glomann, Germany Concept and prototypic implementation of a tangible user interface for psychosocial interventions in the context of dementia Matthia Leyendecker, Christian Zagel, Germany Redefining emergency services with generative AI: Insights from a preliminary literature review Pavlina Kröckel, Germany	

79	**Design for Inclusion and Ageing Society** Co-Chairs: Anna-Lisa Osvalder, Sweden and Alessandra Rinaldi, Italy	DI
10:30-12:00 - AHFE 2	Insights for inclusive crisis preparedness: Development and implementation of a field crisis exercise involving people with disabilities Anna-Lisa Osvalder, Jonas Borell, Elin Stark, Sweden VR4ALL: Advancing design paradigms to deliver inclusive products for individuals with visual and motor disabilities Paula Escudeiro, Nuno Filipe Escudeiro, Márcia Campos, Francisca Escudeiro, Portugal Enhancing inclusive crisis planning: Insights from a disability-inclusive scenario workshop Linda Stjernholm, Charlotte Magnusson, Kirsten Rassmus Gröhn, Jonas Borell, Sweden New light vehicles' solutions for active, sustainable, and inclusive urban mobility of older users Alessandra Rinaldi, Jonathan Lagrimino, Italy Experiments on the manipulation of doors by the elderly with dementia Yoshiaki Goto, Ryou Ozaki, Hiroki Imoto, Japan Design for inclusion in maps design, for optimizing data usability and readability. The case study of two healthy maps Sara Viviani, Alessia Brischetto, Daniele Busciantella-Ricci, Alessandra Rinaldi, Italy	
80	**Wearable Technologies: Virtual Reality and Exoskeletons** Co-Chairs: Andrea Martina Aegerter, Switzerland and Ziqi Wang, UK	HFWT
10:30-12:00 - AHFE 3	WeMoveVirtual: Results from a brief virtual movement intervention for musculoskeletal pain and well-being in knowledge workers Andrea Martina Aegerter, Corina Schneider, Markus Melloh, Achim Elfering, Switzerland Comparative evaluation of commercially available and self-designed low-cost passive exoskeletons during lifting tasks: A randomized controlled trial Shahnawaz Anwer, Maxwell Fordjour Antwi-Afari, Imran Mehmood, Arnold Yu Lok Wong, Joonoh Seo, Masood Khan, Heng Li, Hong Kong SAR China Assessing lower limb muscular strength through resistance exercise with a hip-joint exoskeleton Daeeun Kim, Byungmun Kang, South Korea Virtual reality and extended reality for training of operators Alessandra Ferraro, Daniela Freda, Marco Pirozzi, Luciano Di Donato, Italy Analysis of personal safety walking alone at night and an innovative wearable solution Gaelic Jara-Reinhold, Ina Jovicic, Akash Nandi, Evangelos Markopoulos, UK/USA/Finland Enhancing body ownership of non-human Avatars in virtual reality through multimodal haptic feedback Ziqi Wang, Ze Gao, UK	

81	**Sustainable Built Environment** Co-Chairs: Ana Cardoso, Portugal and Gabriella Duca, Italy	SBE
10:30-12:00 - AHFE 4	Matter by design. How can circular economy play a role in building green efficient and sustainable through innovative use of Mediterranean materials Ana Cardoso, Raquel Salomé, Portugal Empowering sustainable urban futures: Exploring the temporary use of community in-between spaces Duan Wu, Haoyue Lei, Yuhong Ma, China A fresh glance at environmental ergonomics: a systematic review of human-environment interaction concepts and approaches Gabriella Duca, Italy Fundamental study on requirements for old RC Piers to continue to be used without seismic reinforcement Hisako Kobayashi, Hiroyoshi Kiku, Ryo Sawada, Japan Experience elements of user feedback for air-conditioning system in office buildings based on context theory Xin Yue Li, Jun Zhang, Yu Zhun, China Measures for improving building information modelling adoption in small and medium-sized enterprises in the Nigerian construction industry Olusayo Bamgbose, Babatunde Fatai Ogunbayo, Clinton Aigbavboa, Nigeria Appraising construction practitioners' preparedness to mitigate climate change in Nigeria: The way forward Andrew Ebekozien, Clinton Aigbavboa, Mohamad Samsurijan, Mohamed Ahmed, Samuel Adekunle, Opeoluwa Akinradewo, Andrew Awo-Osagie, South Africa	
82	**Design and Evaluation** Co-Chairs: Sonia Brito-Costa, Portugal and Gaby Shi, Hong Kong SAR China	HDCS
10:30-12:00 - AHFE 5	Evaluating the impact of prosthetics on gait symmetry in unilateral lower limb amputees Gaby Shi, Kit Lun Yick, Hong Kong SAR China Skin, architecture and sustainability: Three houses in Alentejo, Portugal Fernando Hipólito, Helena Botelho, Portugal Co-creating public service: Development of hobby voucher for youths and sport clubs Kimmo Tarkkanen, Esko Halonen, Elina Kontio, Niina Katajapuu, Finland User's visual behaviour: Relationships between readability, typography and background color - An eye-tracking view Eduarda Soares, Ines Soares, Quina Coelho, Ricardo Almeida, Rita Fernandes, Ana Teixeira, Sonia Brito-Costa, Silvia Espada, Maria Antunes, Portugal Effects on touchscreen slider operation: User-screen distance, slider length, and thumb size Haihui Ma, Changxu Wu, China The readiness of the elderly for autonomous vehicle technology: An integrated review Teng Wang, Yunshan Jiang, Yanling Zuo, Peggy Wang, Jia Zhou, China/USA	

83	**Aviation and Aerospace: Challenges and Applications** Co-Chairs: Dimitrios Ziakkas, USA and Qingli Liu, China	AVI
10:30-12:00 - AHFE 6	Should I board this advanced air mobility vehicle? A systemic risk assessment of eVTOL in a vertiport Elena Stefana, Natalia Guskova, Giulio Di Gravio, Riccardo Patriarca, Italy Show the way: Accelerating general aviation accident investigations through ChatGPT and HFACS Qingli Liu, Yuqi Yan, Fan Li, Shanshan Feng, China Interdisciplinary space design: A case study on lunar terrain vehicle seating Jessica Sanchez Russi, Elham Morshedzadeh, Jeff Feng, USA Patterning risk: An innovative task design method for simulating incidents in transportation studies Mengtao Lyu, Fan Li, Hong Kong SAR China Reduction and modification for aero engine rotor model considering contact stiffness Chengming Gao, Dahai Zhang, China Improved one-step block precise integration method for rotor nonlinear response calculation Jiaxuan Liu, Dahai Zhang, China The challenges of the implementation of artificial intelligence (AI) in transportation Dimitrios Ziakkas, Debra Henneberry, USA	
84	**Systemic Structural Activity Theory** Co-Chairs: Inna Bedny and Alexander M. Yemelyanov, USA	CN
10:30-12:00 - AHFE 7	Decision-making augmentation system for solving the problem of risk reduction Alexander M. Yemelyanov, USA Wide scope of applications of the SSAT toward the optimization of user experience Inna Bedny, USA On the theory of regulating educational and professional activity Oleksiy Chebykin, Marianna Skoromna, Inna Bedny, Ukraine Workers' modes of self-expression and behavioural manifestations of loyalty or exit-intentions when engaged in systemic structural activities Mohammed Aminu Sanda, Ghana The changing rule and intervention strategy of long-voyage crew's alertness Jin Liang, Cong Peng, Si Li, Xin Wang, Zhen Liao, Ye Deng, Yang Yu, Liang Zhang, Xiaofang Sun, Yulin Zhang, China	

85	**Driver Performance, Behavior and Physiology II** Co-Chairs: Anna Sjörs Dahlman, Sweden and Anabela Simoes, Portugal	RR
10:30-12:00 - AHFE 8	Validation of a one-item acute stress scale for driving tasks Anna Sjörs Dahlman, Kåre Karlsson, Stefan Candefjord, Anna Anund, Sweden Understanding driver's emotion and attention in the context of augmented reality head-up display system Jingyi Wan, Jun Zhang, Yan Luximon, Hong Kong SAR China The impact of autonomous driving takeover assistance information design on driver takeover performance and situational awareness Lin Tong Xie, Xiao Fang Yuan, China EEG-based prediction of driver takeover performance Jinhui Huang, Tingru Zhang, China Effects of interactive modality on the spatiotemporal characteristics of driver eye movement Lin Jie, Xing Liu, Tingru Zhang, Alan Chan, China Framework for the evaluation of a holistic fitness-to-drive system for commercial drivers in the PANACEA project Anna Sjörs Dahlman, Anna Anund, Katerina Touliou, Iosu Erauskin, Sweden	
86	**Multimodal Human Factors Research: Usability and User Interface Design** Co-Chairs: Gilbert Drzyzga, Germany and Chiaho Hsueh, Taiwan	UUE
10:30-12:00 - AHFE 9	Multimodal human factors research: Integrating eye tracking, facial expression analysis and psychophysiology Lucas Noldus, Guus Bongers, Harold Bult, Netherlands Interaction design of a center navigation system for female drivers Jie Zheng, Fenghui Deng, China Improving the usability of intelligent interface designs Gilbert Drzyzga, Germany Usability study on the user interface of arts and culture activity platforms Chiaho Hsueh, Chien-Hsiung Chen, Taiwan The user experience of app interface design in hospitals: An empirical study Hsiao Ching Chu, Chien-Hsiung Chen, Taiwan The construction method and application of a dynamic user experience evaluation system for smart home appliances Jian Wu, Nan Jiang, Shuming Zhang, Yao Ding, Yaoyao Zhao, Fengyi Guo, Sihan Chen, China The impact of information layout and gender on the user experience of smart home center control system interface Lu Lu, Chien-Hsiung Chen, Taiwan	

87	**Challenges on Implementing Human-Related Artificial Intelligence in Operation Management** Co-Chairs: Keijo Houhala and Vesa Salminen, Finland	HFBMS
10:30-12:00 - AHFE 10	Creative and effective human artificial intelligence co-evolution-interactive front-end content generation Vesa Salminen, Jyrki Peltomaa, Juha Varis, Finland Innovation automation by AI as an engine for value creation Keijo Houhala, Finland Knowledge management in sport: Case MyE. Way Knowledge Management System Elina Kontio, Niina Katajapuu, Jussi Salmi, Juho Metsavuori, Mikko Pohjola, Finland Corporate social responsibility and financial performance: An empirical analysis of Indian small cap firms Gulshan Kumar Yadav, Titas Bhattacharjee, Atasi Mohanty, India Servitization directions in different cultural environment Keiko Toya, Sweden Bridging business challenges: Optimizing brand experiences with experience strategy-oriented design thinking Weng-io Chan, Hsien-Hui Tang, Taiwan	
88	**New Methods and Technologies for Human-Robot Interaction in Sociotechnical Work Systems** Chairs: Sarah Fletcher, UK	MFG
10:30-12:00 - AHFE 11	On the design of human-robot collaboration gestures Anas Shrinah, Masoud Sotoodeh Bahraini, Fahad Khan, Seemal Asif, Niels Lohse, Kerstin Eder, UK Physiological and eye tracking determinants as markers of skill acquisition in manual inspection Sacha Godhania, Iveta Eimontaite, Sarah Fletcher, UK Collaboration and co-creation in Industry 5.0: User-engagement with industrial operators through co-creation workshops Vaishnavi Sashidharan, Iveta Eimontaite, Sarah Fletcher, Alejandro Arpa, Alessandro Mazzon, John Stavridis, Scott Tucker, Igal Israeli, Samuel Zerbib, UK Integrating ethical risk assessment and human factors in the design of industrial human-robot collaboration Sarah Fletcher, UK Software architecture and human-centric design methodology in human-robot collaborative production systems Spyros Koukas, Raimund Broechler, Kevin Haninger, Milan Gautam, Fernando Ubis, Urko Esnaola Campos, Iveta Eimontaite, Sarah Fletcher, Nikos Dimitropoulos, Sotiris Makris, Luxembourg/Germany/Finland/Spain/UK/Greece	
12:00-13:30 Enjoy lunch at the restaurant of your choice		

89	**Training Technologies and Learning Strategies II** Co-Chairs: Stefano Filippi, Italy and Betsy Barnhart, USA	TELS
13:30-14:30 - AHFE 1	United Nations Sustainable Development Group (UNSDGs) and health and safety Alfredo Soeiro, Portugal Beyond the classroom: A case study of higher education internship support for industrial design students Betsy Barnhart, Carly Hagins, Katherine Tierney, USA Possible applications of large language models (LLMs) in engineering education: An overview Barbara Motyl, Stefano Filippi, Italy The pivotal role of web technology in advancing interaction design learning Qian Cao, Xiandong Cheng, China Evaluating fundamental and operational marksmanship performance across head-borne equipment Patrik Schuler, Peioneti Lam, Blake Mitchell, USA	
90	**Biomedical Engineering - Data Utilization and Bio-Material Applications** Co-Chairs: Regan Watts and Andres Vanhooydonck, Belgium	HIBEA
13:30-14:30 - AHFE 2	The effect of spatial convolution on decoding imagined speech from EEG Hyeong-jun Park, Mustapha Dere, Ji-hun Jo, Boreom Lee, South Korea Optimizing high accuracy 8K LCD 3D-printed hollow microneedles: Methodology and ISO-7864:2016 guided evaluation for enhanced skin penetration Andres Vanhooydonck, Jochen Vleugels, Marc Parrilla, Phil Clerx, Regan Watts, Belgium Synthesis of papaya seed biochar-chitosan hydrogel beads for methylene blue adsorption Evelyn Wang, Wei Wei, Zhi Qi Lim, Singapore How a human-centred design approach can speed up market acceptance of long-term ECG monitoring devices Jose Laparra Hernández, Mónica Redón, Jorge Valero, Ignacio Espíritu García-Molina, Carlos Navarro, Paola Piqueras, José Navarro, María Jesús Solera, Carlos Atienza, Sara Enrique, Nicolás Palomares, Spain Comparing perceptions of human factors - priorities of cardiologists and biomedical engineers in the design of cardiovascular devices Grainne Tyrrell, Donna Curley, Leonard O' Sullivan, Eoin White, Ireland NurseAid Monitor: A non-invasive monitor to assess respiratory rate and pattern of bedridden patients Rafael De Pinho Andre, Almir Fonseca, Lucas Westfal, Brazil	

91	**Human Factors in Artificial Intelligence and Social Computing I** Co-Chairs: Yang Cai and Nawid Jamali, USA	AISC
13:30-14:30 - AHFE 3	Episodic memory with interactive 3D sequential graph Yang Cai, USA Meaningful Emoji: A preliminary exploratory study of graphic symbols usage for health communication Tingyi S. Lin, Sih-Wei Li, Taiwan Exploring the use of GenAI in the design process: A workshop with design students Elena Cavallin, Italy Development of an explainable pre-hospital emergency prediction model for acute hospital care Minjung Lee, Eun Jung Kwon, Hyunho Park, South Korea Dyadic interactions and interpersonal perception: An exploration of behavioral cues for technology-assisted mediation Hifza Javed, Nina Moorman, Thomas Weisswange, Nawid Jamali, USA AI-based learning recommendations - possibilities and limitations Martin Kröll, Kristina Burova-Keßler, Germany	
92	**Technology and Design in Elderly Care** Co-Chairs: Adviti Atluri, USA and Marie Sjölinder, Sweden	HFAS
13:30-14:30 - AHFE 4	Exploring AI smart home aging-in-place: use cases to empower individuals with MCI and their care partners Adviti Atluri, Brenna Phelps, Yi Qin, Corinne Cutts, Brian Jones, USA Design for digital ecosystems and telemedicine services to improve the quality of care pathways for frail older adults Francesca Tosi, Claudia Becchimanzi, Mattia Pistolesi, Italy Evaluation of an interactive solution for reminiscence and communication Marie Sjölinder, Elin Hollström, Hanna Rönntoft, Olov Ståhl, Anders Helin, Victor Marklund, Sweden Enhancing quality of care for older adults: A participatory design approach for assistive devices in caregiving Pilar Hernández Grageda, Ramiro Velázquez, Andrew Johnson, Mexico Elderly and digital health technologies: The relationship between gerontechnology and design for active and healthy ageing. Francesca Tosi, Mattia Pistolesi, Claudia Becchimanzi, Italy Facilitating social engagement for middle-aged and older individuals: Examining the role of idle goods and product-service design Jie Meng, Australia	

93	**Sensory Engineering and Emotion II** Co-Chairs: Xiaoqin Cao, China and Kanji Okazaki, Japan	APD
13:30-14:30 - AHFE 5	**Development of high-precision emotion estimation method using speech sound information with environmental noise reduction and low sampling rate** Kanji Okazaki, Keiichi Watanuki, Japan **Feature selection and estimation of route and gait during walking with route and speed changes by surface electromyograph using transformer** Naoki Nozawa, Yusuke Osawa, Keiichi Watanuki, Japan **AI-driven music generation and emotion conversion** Xinwei Gao, Deng Kai Chen, Zhiming Gou, Lin Ma, Ruisi Liu, Di Zhao, Jaap Ham, China **Enhancing user immersion in virtual reality by integrating collective emotions through audio-visual analysis** Sam Corpataux, Marine Capallera, Omar Abou Khaled, Elena Mugellini, Switzerland **Intelligent chair product design based on embodied emotion theory** Xiaoqin Cao, Huiqiang Xing, Aoyue Dong, China **Understanding emotional needs across stroke rehabilitation phases for affective design** Yixuan Lyu, Yue Chen, China	
94	**Industrial Cognitive Ergonomics and Engineering Psychology** Co-Chairs: Jonas De Bruyne, Belgium and Magnhild Kaarstad, Norway	CN
13:30-14:30 - AHFE 6	**Random gazes, telling eyes: Exploring gaze transition entropy as a performance indicator in evaluating instructional designs** Jonas De Bruyne, Laetitia De Leersnijder, Durk Talsma, Jelle Saldien, Klaas Bombeke, Jelle Demanet, Belgium **An explorative study of nuclear operators' perception of groupthink** Magnhild Kaarstad, Robert McDonald, Daniel Odéen, Norway **Team training and neural synchrony: An experimental study with fNIRS and machine learning** Shen Dong, Yifan Zhang, Ruoyu Niu, Jie Xu, China **Assessing cognitive workload in children with autism spectrum disorder through pupil dilation: A reading performance study** Othman Norashiken, Gogulasanti K Ganesan, Ummi Noor Nazahiah Abdullah, Khairul Salleh Basaruddin, Malaysia **Experimental paradigms and their knowledge associations in studies of information processing: A review** Lan Zhang, Xiaoli Wu, Biao Yan, Qian Li, Xingcan Yang, China	

95	**Design Philosophies and Ideas** Co-Chairs: Mengye Zhou, China and Paolo Cicconi, Italy	ED
13:30-14:30 - AHFE 7	Establishing a database of Jingchu textile patterns in intangible cultural heritage: A case study of Xilankapu wedding patterns Mengye Zhou, Fang Xing, Anran Feng, Yang Yuqi, Ziyi Wang, China Classification and development methods of design projects in digital marketing: Perspectives from art and design thinking Kyoko Kamimura, Japan Effect of street light intervals on distance to unknown approaching pedestrian that causes discomfort Koki Yoshida, Yohsuke Yoshioka, Japan Comparison of ergonomic principles for school furniture design between Europe, USA, and Asia: An overview Zamzarina Ahmad, Irwan Syah Md Yusoff, Velu Perumal, Ng Yee Guan, Norhafifah Samsudin, Mohd Nor Zamri Mat Amin, Nor Liza Mat Yasok, Nik Zuraihah Nik Mohammad, Mohd Ridzuan Samsury, Malaysia Defining the configuration of storage shelving in assembly workstations: An ergonomic tool for a parametric optimization Paolo Cicconi, Michele Trovato, Lorenzo Donati, Antonio Casimiro Caputo, Italy Human-centred design of Industry 4.0 technologies in research projects Susanna Aromaa, Päivi Heikkilä, Hanna Lammi, Finland	
96	**Industry and Academia Collaborations in Service Design, Ethics, and User Experience Design Thinking** Co-Chairs: Ryan Wilson and Debra Satterfield, USA	HSSE
13:30-15:30 - AHFE 8	Accessibility design in user experience and digital product design: Ethical and practical Imperatives Ryan G Wilson, Erica Price, USA Industry and academia collaborative learning: The CSULB and ISSIP AI Collab Pilot Program Debra Satterfield, Jen-mei Chang, USA Promoting motivation in learning introductory statistics Tianni Zhou, Debra Satterfield, Yiming Wang, Hiromi Masunaga, USA Localizing graphical user interfaces for right-to-left languages: A practical study Sam Anvari, Paul Woods, USA "Introspective creativity" leveraging inclusive leadership philosophy with design thinking methodologies Wesley Woelfel, USA VR-based, collaborative and hybrid service prototyping Erhan Efe, Hamide Yavuz, Pia Freitag, Moses Effinger, Nick Tugarin, Christian van Husen, Germany	

97	**Innovative Agonology – Applied Science About Complementary Strengthening of Health and Survival** Co-Chairs: Roman Maciej Kalina and Pawel Adam Piepiora, Poland	SIPOR
13:30-14:30 - AHFE 9	Complementary approach and mixed assessments – INNOAGON's basic research methods Roman Maciej Kalina, Poland Interpretation of Chinese hand-to-hand fighting systems and therapeutic exercises from the perspective of the INNOAGON Methodology Artur Kruszewski, Marek Kruszewski, Elena Cherkashina, Ilia Cherkashin, Tianqi Liang, Zhang Xiaoquan, Poland Burning books in human history as evidence of extremely aggressive activation of the 'toxic power syndrome' Michal Kruszewski, Leon Krzemieniecki, Poland INNOAGON generation born after 2025 – alternative recommended by science Pawel Adam Piepiora, Poland Cognitive effects of using the modified fun forms of falling method in measuring the susceptibility to body injuries during a fall in children Bartłomiej Gąsienica Walczak, Judyta Zachwieja, Poland	
98	**Healthcare and Sports Applications Design** Co-Chairs: Vera Marie Memmesheimer, Germany and Isabel L Nunes, Portugal	SYSI
13:30-14:30 - AHFE 10	Exploring the impact of visualizing key factors in badminton tournaments on audience experience Yuan Chieh Lee, Meng-Cong Zheng, Li-Jen Wang, Taiwan The impact of enhanced information presentation in sports event broadcasting on viewer experience: A case study of penalty shootout in football Ting Chun Lung, Meng-Cong Zheng, Li-Jen Wang, Taiwan Enhancing low basketball experience viewer broadcast experience via data visualization: The National Basketball Association case study Wei Chen, Meng-Cong Zheng, Li-Jen Wang, Taiwan Mixed reality handheld displays for robot control: A comparative study Vera Marie Memmesheimer, Ian Thomas Chuang, Bahram Ravani, Achim Ebert, Germany Preliminary exploration of tripartite social pain games: Expressions of feelings among three players and game mechanism design Yu-pin Weng, I-jui Lee, Taiwan The use of wearable sensors for ergonomic risk assessment of surgical procedures: A literature review Catarina Santos, Ana Teresa Videira Gabriel, Cláudia Quaresma, Isabel L. Nunes, Portugal	

99	**Autonomous and Automated Driving II** Co-Chairs: Siri Hegna Berge, Netherlands and Zhi Guo, USA	RR
13:30-14:30 - AHFE 11	Phantom braking in automated vehicles: A theoretical outline and cycling simulator demonstration Siri Hegna Berge, Joost de Winter, Yan Feng, Marjan Hagenzieker, Netherlands A conceptual framework for public acceptance of automated driving based on a multidisciplinary review and appraisal Zhi Guo, USA Considerations of interior design in fully automated vehicles: Influence of front window scenery on ride comfort and motion sickness Junya Tatsuno, Iori Hisada, Kazuma Ishimatsu, Hitomi Nakamura, Setsuo Maeda, Japan Teaming within Your Teammate: Examining human perception of teaming with a semi-autonomous vehicle Maya Luster, Brandon J. Pitts, USA Unveiling trust: A model-based approach to understanding and enhancing perceived safety in autonomous vehicles Ninja vom Stein, Manuel Löwer, Germany An online-survey on user expectations and mental model of automated driving: The effects of automation description and technology readiness Barbara Metz, Johanna Woerle, Alexandra Neukum, Germany/Singapore	

100	**Human Factors in Virtual Environments II** Co-Chairs: Ashley Rabin and Manish Dixit, USA	HFGD
14:30-16:00 - AHFE 1	Using multi-modal physiological markers and latent states to understand team performance and collaboration Ashley Rabin, Catherine Neubauer, Stephen Gordon, Kevin King, USA Studying spatial visualization ability under micro-gravity conditions simulated in virtual reality Manish Dixit, Faezeh Salehi, USA How age relates to spatial orientation ability under simulated microgravity environments? Manish Dixit, Faezeh Salehi, USA Human Extended Reality (HeR) breaking physical and digital barriers: Case study applied to humanize mobility solutions and enhance society acceptance Víctor De Nalda-Tárrega, José Manuel Rojas, Andrés Soler, Pedro Uribe, Javier Montesa, Jose Solaz, Jose Laparra Hernández, Spain Evaluating the impact of cybersickness in a mixed-reality's world Gabriella Severe-Valsaint, Ada Mishler, Javier Rivera, Tashara Cooper, USA VR controller design for autistic children and therapists Qing Xue, Yilin Yang, Wang Haining, Jing Ou, China Random dot kinematogram used in virtual reality: A preliminary experiment Caroline Schon, Kevin König, Johannes Tümler, Germany	

101	**Today's Halcyon: Discourse on the Communication of Design Through the Lens of Human Values** Chair: Amic Ho, Hong Kong	HFCD
14:30-16:00 - AHFE 2	Weaving cities through cultural psychology: A renewal design on the Hangzhou Imperial Ancestral Temple Square's cultural revitalization Yuyang Jiang, Wei Yixin, Jia Dehan, Hu Zhenhang, Zhao Deli, Pan Hui, Hong Kong SAR China Visual pictures and digital technologies in the digital anthropocene: Development, analysis, and critical reflection Xiaoyu Guo, Yuyang Jiang, Yawei Hao, China The development of a care assistive device based on design thinking: An examination of interview methods by visualizing ideas using sketches Risako Yanagase, Nao Takizawa, Takumi Ohashi, Miki Saijo, Japan Communication, conflict and speculation: The role of design in public space Haihua Wang, China Exploring the healing potential of tie-dye art therapy using a younger generation of college students' workshop as an example Zhiwei Wang, Shun Liu, Jiawen Mi, Huimin Wang, Yuyang Jiang, Dongliang Xu, Ze Gao, China Designing for emotion: An action research approach to enhancing student engagement in communication design Amic Ho, Hong Kong SAR China The exploration of puzzle design in advertising images I Ning Liu, Regina W Y Wang, Taiwan	
102	**Interaction with Emerging Technologies II** Co-Chairs: Yueying Chu, China and Marvin Sieger, Germany	HDCS
14:30-16:00 - AHFE 3	Quantifying information dissemination: Structured review on methods and variables for sharing behavior on social network sites Marvin Sieger, André Calero Valdez, Tim Schrills, Germany Developing climate change resilient contemporary societies Aelita Skarzauskiene, Monika Maciuliene, Lithuania An interaction engine and question refactor method in question answering for knowledge-driven process planning Tianzong Yu, Yan Ma, Peihan Wen, China Dynamic trust repair: Conceptual and feasibility analysis Yueying Chu, Peng Liu, China An experimental approach to measuring resilience potential: Interactions in a breakfast cooking task Haruka Yoshida, Taiki Ikeda, Taro Kanno, Daisuke Karikawa, Kohei Nonose, Satoru Inoue, Takashi Toriizuka, Japan	

103	**Product Evaluation, Emotional Design and Artificial Intelligence** Co-Chairs: Susan Xu, USA and Xinyun Li, China	APD/ PEQ
14:30-16:00 - AHFE 4	Consumer acceptance of grass ingredients in human diets Anne Mumbi, Helen Pittson, Frank Vriesekoop, Sebnem Kurhan, UK 3D numerical simulation for thermal protection of phase change material-integrated firefighters' turnout gear Susan Xu, Jonisha Pollard, Weihuan Zhao, USA Impact of self-contained breathing apparatus (SCBA) weights on firefighter's kinematics during simulated firefighter tasks Susan Xu, Rachel F Jones, Neethan Ratnakumar, Kübra Akbaş, Jeffrey Powell, Ziqing Zhuang, Alex Zhou, USA Development of an AI literacy scale using multiple-choice questions Xinyun Li, Qin Gao, P. L. Patrick Rau, China Review and appraisal of approaches to assess comfort of wearable devices Xuan Wang, Zilin Jiang, Qin Gao, China The application of interaction design to human emotion and pleasure based on interactive concepts Fu Siyu, Rui Xu, Danmeng Xu, Yan Yue, China Sit back, relax, and sniff some lavender!: Investigating the impact of scent on passengers in air taxis Shengdi Xiao, Jingjing Li, Dmitrijs Dmitrenko, Japan	
104	**Human Factors in Medication Management and Clinical Decision Making** Co-Chairs: Massimo Micocci, UK and Naska Xas, Norway	EHMD
14:30-16:00 - AHFE 5	A structured approach to clinical pathway mapping (CPM): A case study of a postoperative patient controlled analgesia (PCA) pump Massimo Micocci, Tayana Soukup, Hannah Kettley-Linsell, Shayan Bahadori, Shanshan Zhou, Simon Walne, Simone Borsci, Peter Buckle, George Hanna, UK/The Netherlands Challenges and uncertainties in violence risk assessment: A critical examination of practice and national guidelines in Norway's specialist mental health services Naska Xas, Norway Exploring the usability and user experience of the symptom checker interface Wei An Lin, Meng-Cong Zheng, Li-Jen Wang, Taiwan Exploring self-medication practices among undergraduate university students: A qualitative descriptive study Rodrigo Dominguez, Alex Rojas, Enrique Calderón, Dany Bahamondes, Catalina Torrejon, Aylin Astudillo, Macarena Santander, Chile Explainable hybrid machine learning technique for healthcare service utilization Ephina Thendral Surendranath, USA Artificial intelligence in medication management for Alzheimer's patients in China Xinyue Zhang, Rafiq Elmansy, Jingyang Liu, China Enhancing accessibility in Mexican healthcare: A versatile lift and walking aid system Danna Garcia, Valeria Catalina Siordia-Ortiz, Alondra Alejandra Vargas Villalpando, Alex Ander Iñiguez Velasco, Sergio-Alberto Valenzuela-Gomez, Mexico	

105	**Manufacturing, Process Control and Human-Robot Collaborative** Co-Chairs: Farhad Mazareinezhad, Canada and Olli Heimo, Finland	MFG
14:30-16:00 - AHFE 6	**The flow of sustainability information through interorganisational shipbuilding ecosystem** Olli Heimo, Tiina Vainio-kaila, Kalle Kinnunen, Seppo Helle, Sami Majaniemi, Leena Jokinen, Saara Hänninen, Teijo Lehtonen, Finland **Evaluating the accuracy of the MOST predetermined motion time system through lab experiments** Farhad Mazareinezhad, Firdaous Sekkay, Daniel Imbeau, Canada **Application of statistical cluster analysis in design process – the case of fabric design** Iou-ren Lin, Chien-Hsiung Chen, Taiwan **Human centered research agenda for intelligent technology in process control** Jami Aho, Antero Karvonen, Hanna Koskinen, Mika Luimula, Mari Myllylä, Bastian Tammentie, Finland **Feasibility evaluation method for scheduling schemes based on auxiliary elapsed time** Licai Qin, Xiaojun Liu, China	
106	**Physical Workload Assessment and Biomechanical Analysis** Co-Chairs: Rosimeire Padula, Brazil and Diana Catalina Pardo Ramos, France	PEHF
14:30-16:00 - AHFE 7	**What are the best and most complete observational methods for assessing workers' biomechanical exposure in the workplace? A systematic review** Rosimeire Padula, Daniela Pereira Valentim, Patricia Rodrigues da Silva, Lyssa Sandy Medeiros Rodrigues Cirino, Maria Padilha Alonso Gomes, Anderson Martins da Silva, Maria Luiza Caires Comper, Brazil **Developing anthropometrics competency-based learning with a simplified CAD model of a person** Yuliana Tónix Cuahutle, Donovan Esqueda Merino, Ricardo Jaramillo Godinez, Hector Rafael Morano Okuno, Luis Enrique Villagómez Guerrero, Oliver Gómez Meneses, Mexico **Intersegmental moments at the lower back, hip and knee joints during childcare for musculoskeletal disorders prevention** Diana Catalina Pardo Ramos, Antoine Muller, Raphaël Dumas, Adriana Savescu, France **Ergonomic risk reduction in picking activities: Evaluation of an active exoskeleton through Azure Kinect** Antonio Maria Coruzzolo, Chiara Forgione, Christian Di Natali, Francesco Lolli, Italy **Musculoskeletal disorders among construction workers** Simamnkele Ngxesha, Claire Deacon, John Smallwood, South Africa **Extending Fitts' Law: A model of stroke operations in commercial applications** Haotian Ju, Fangli Song, Wei Wang, Jun Zhang, Chen Qi, Le Du, China **The effectiveness of soft brace with pneumatic muscles on posture alignment for subjects with postural kyphosis: Pilot study** Shuk Fan Tong, Disheng Xie, Hsuan Yu Lu, Dezhi Liang, Zhongping Ye, Kun Zhu, Kai-yu Tong, Hong Kong SAR China	

107	**Public Transportation and Safety II** Co-Chairs: Pavlo Bazilinskyy, Netherlands and Melanie Juppe, Austria	RR
14:30-16:00 - AHFE 8	Exploring the correlation between emotions and uncertainty in daily travel Mervyn Franssen, Rutger Verstegen, Pavlo Bazilinskyy, Marieke Martens, Netherlands Ridesharing as a part of modal shift: An Austrian pilot case study Melanie Juppe, Austria Enhancing public transit accessibility: A human factors study on reducing transit disparities Hamed Tabkhi, USA Factors influencing pedestrian crashes: A study on effects of time pressure and compliance behaviour Apurwa Dhoke, Pushpa Choudhary, India Cognitive load, aids and driving ability: A protocol for a comparative analysis of subjects in different traffic conditions in a virtual environment Fabio Alexander Storm, Marta Mondellini, Alfonso Mastropietro, Simone Costantini, Vera Colombo, Mattia Chiappini, Matteo Malosio, Carla Dei, Giovanna Rizzo, Sara Arlati, Marco Sacco, Italy User requirement analysis for voice and gesture interactions with delivery robots: An interview study Vivian Lotz, Eva-Maria Schomakers, Martina Ziefle, Germany	
108	**HMI Design and Studies** Co-Chairs: Tanja Boljanic, Serbia and Sabine Langlois, France	SYSI
14:30-16:00 - AHFE 9	The role of training duration in frequency discrimination of electrotactile feedback Tanja Boljanić, Milica Baljić, Strahinja Došen, Matija Štrbac, Serbia Technology for improved drivers' safety: Testing a multimodal HMI Arnaud Koustanai, Sabine Langlois, Jean-Baptiste Haue, France Design and implementation of gesture interaction for a command and control system based on multimodal data fusion Méng Méng Gāo, Deqiang Fu, Ning Li, China Exploration in the design and development of emotive teaching aids Chia-hao Lin, I-jui Lee, Taiwan Region selector usability test: Dropdown vs. Tabs Yuanyuan Liu, Ying Xia, China Bimodal affective computing interfaces for emerging artificial intelligence paradigms Ian Gonsher, Joshua Phelps, Shiyu Yan, Xiaoxi Yang, USA The evolution and evaluation of pie menu interactions in text input Rupesh Nath, Anirudha Joshi, India	

109	**Interdisciplinary Design Research** Co-Chairs: Yong-Gyun Ghim and Cliff Shin, USA	IPID
14:30-16:00 - AHFE 10	Design of home appliance operation sounds based on the metaphorical nature of sound Megumi Umino, Ryota Yajima, Wonseok Yang, Japan Unraveling factors of decision fatigue in customization services Yugo Furuhashi, Wonseok Yang, Japan Effect of freedom of customization on psychological ownership Yuki Uwajima, Wonseok Yang, Japan The influence of microcopy on user decision-making Momoka Muto, Wonseok Yang, Japan On the use of Verb for micro interactions in UI Shunsuke Owa, Wonseok Yang, Japan Consideration of the problem of digital divide in the development of ICT Jun Otsuka, Wonseok Yang, Japan	
110	**Accessibility, Assistive Technology and Digital Environments** Co-Chairs: Lena Wirtz, Germany and Chengyuan An, UK	AATDE
14:30-16:00 - AHFE 11	Adaptive human-machine interfaces and inclusivity in the automotive field: A review Lena Wirtz, Emirhan Sever, Lutz Eckstein, Germany Exploring the relationship between acceptance and usage intention of smart mobility applications and the mobility of older adults: A systematic review Chengyuan An, UK User Study: Generative AI-based scientific writing assistant for students with visual impairments Alireza Darvishy, Stefano Anzolut, Oriane Pierrès, Felix Schmitt-Koopmann, Switzerland The ethics of immersion: A scoping review of VR and AR technologies Matteo Zallio, Takumi Ohashi, Yutaka Osaki, Taihe Huang, Shiqi Hong, Xiaomin Chang, Wei Liu, UK/Japan Exploring differences in work environment and work engagement as moderated by psychological capital Rebekah Clarke, USA A human-computer interaction design solution for women's home nodule detection devices Kaiqiao Zheng, Jing Luo, China Leveraging human data for avatar action recognition in virtual environments Somaya Eltanbouly, Osama Halabi, Qatar	

Refreshments: 16:00-16:30 • Location Lobby Level

111	**Design Considerations for Effective User Interactions** Co-Chairs: Thomas Strybel and Gabriella Hancock, USA	CN
8:30-10:00 - AHFE 1	**An introduction to single-case experimental designs for applied human factors and ergonomics** Sean Laraway, Susan Snycerski, Sean Pradhan, Bradley Huitema, William Rantz, Geoffrey Whitehurst, Vernol Battiste, USA **Measuring flow: Perceived emotions & arousal-valence** Ehm Kannegieser, Johannes Ratz, Germany **Evaluation of voice vs. text communication modes in simulated UAM operations** Thomas Strybel, Vernol Battiste, Kim-Phuong L. Vu, Panadda Marayong, Praveen Shankar, Stacey Ahuja, Maegan Schmitz, Justin Cheung, Chloe Culver, Andrew Alfaroarevalo, USA **Adaptive versus maladaptive coping: Correlations with performance in adaptive training** Gabriella Hancock, Bradford Schroeder, Javier Rivera, Sean Thayer, Jason Hochreiter, Yazmin Diaz, Mira Gruber, Wendi Van Buskirk, USA **Displaying information: Evolutionary trends** Peter Hancock, USA **Impact of anxiety on eye markers: Role of visual task complexity** Saurabh Sharma, Sonali Aatrai, Rajlakshmi Guha, India **Assessing the effects of fatigue on cognitive performance for shift workers in the petrochemical industry: A scoping review** Ashraf Alhujailli, Saudi Arabia	
112	**Ergonomics in Design: Learning and Teaching** Co-Chairs: Lingyan Zhang, China and Jinxiao Huang, Thailand	ED
8:30-10:00 - AHFE 2	**Advancing user research in industrial design education: Navigating challenges and harnessing innovation** Elham Morshedzadeh, USA **A critique of the use of information axiom for ergonomic design** Mahmut Ekşioğlu, Ömer Gündüz, Turkey **Design knowledge transfer from traditional Chinese furniture: Contemporary design and expression of tenon structure bamboo furniture space** Jinxiao Huang, Eakachat Joneurairatana, Thailand **A brief introduction into futures studies methods and its application prospects in field of design** Wei Du, China **Application and prospect of mixed reality in design experiment teaching** Lingyan Zhang, Shuangying Chen, Yun Wang, Jiqing Fu, Qianxi Zhang, Jiarui Liu, China **Types of children's cultural and creative products based on card sorting method** Zhengtang Tan, Yufan Zhou, Shuang Lin, Meizhen Den, Zhuyun Yuan, Shunshun Tang, China **Redefining problems: A creative approach in design** Yating Li, Henry Ma, Shen Qianhui, Hong Kong SAR China	

113	**Safety and Human Factors** Co-Chairs: Michelle Hight, USA and Craig Foster, UK	SMHF
8:30-10:00 - AHFE 3	Work interruptions and nearby-falls in geriatric nurses: Attention failure as a mediator and job tenure as moderator Achim Elfering, Tobias Zimmermann, Switzerland Progress towards the prediction of adaptation in the safety of UK air traffic control Craig Foster, Katie Plant, Rich McIlroy, UK The role of human factors in fall from height fatalities in the UK construction industry Oluwafemi Olatoye, Andrew Oyen Arewa, David Tann, UK The integration of human factors into a shipping company's Safety Management System (SMS) in the context of safety culture evolution. Georgios Lykos, Nikolaos Ventikos, Alexandros Michelis, Alexandros Koimtzoglou, Greece Prospective Gains in Safety and Cost Management; Using the HFACS to Proactively Address Organization Influences that Cause Human Error Mark Miller, Michelle Hight, USA Human factors implication in innovative strategies for containership fires prevention and management Vittorio Sangermano, Mario Ciaburri, Raffaella Russo, Daniele Palma Esposito, Italy	
114	**Rail and Road Comfort and Operational Considerations** Co-Chairs: Melina Makris, Sweden and Anja Naumann, Germany	RR
8:30-10:00 - AHFE 4	Train driver visual performance: A parametric survival model of reaction time Baris Cogan, Birgit Milius, Germany Vibration sensitivity measurement of back and buttocks for effective seat vibration warning Akinari Hirao, Akari Yoshida, Japan Unveiling the complexity of car ride comfort: A holistic model Melina Makris, Anna-Lisa Osvalder, Mikael Johansson, Jonas Borell, Sweden Experiences of upright sleeping in a vehicle: The preferred back rest angle Gerbera Vledder, Rebeca Sabater Compomanes, Utkarsh Singh, Halil Kılıç, Maxim Smulders, Yu Song, Peter Vink, Netherlands Automation in railway: How tasks and roles of operational staff change Anja Naumann, Birte Thomas-Friedrich, Germany Effects of deceleration level on train passenger comfort – field study in northern Sweden Niklas Olsson, Tomas Rosberg, Birgitta Thorslund, Sweden The vehicle as an immersive device to enhance the mental health to a peak state Franziska Braun, Sebastian Stegmüller, David Agola, Carolin Hamel, Paul Gerlach, Germany	

115	**Digital Dynamics in the Workplace, Exploring AI Integration, Flexible Work Models, and Participatory Design** Co-Chairs: Miriam Maibaum and Marc-André Weber, Germany	SYSI
8:30-10:00 - AHFE 5	Work design in production: Foundations and recommendations for the implementation of mobile, time-flexible work design in chipping production Jakob Weber, Marc-André Weber, Sascha Stowasser, Germany Technical and socio-technical success factors of AI-based knowledge management projects Christian Cost Reyes, Nicole Ottersböck, Christian Prange, Adrian Discher, Sven Peters, Holger Dander, Germany User-oriented process mapping and monitoring using AI for cost efficient additive manufacturing with directed energy deposition Nik Schwichtenenberg, Thore Gericke, Simon Hagemann, Alexander Mattes, Germany Trusting AI: Factors influencing willingness of accountability for AI-generated content in the workplace Ulrike Aumüller, Eike Meyer, Germany Hand vibration threshold mapper (HaViThreMa): A haptic vibration system Emanuel Silva, Isabel Lisboa, Tiago Matias, Rui Gomes, Adriano Carvalho, Paulo Cardoso, Nelson Costa, Portugal Enhancing ergonomics in construction industry environments: A digital solution with scalable event-driven architecture Nelson Enrique Bances P., Urs Schneider, Thomas Bauernhansl, Jörg Siegert, Germany Participatory approaches to design work in the context of digital transformation: An analysis of the needs of employees in public administrations Miriam Maibaum, Marc-André Weber, Sascha Stowasser, Germany	
116	**Implementation of Artificial Intelligence and Digital Transformation in Company Training** Co-Chairs: Oliver Tian, Singapore and Vesa Salminen, Finland	HFBMS
8:30-10:00 - AHFE 6	Addressing the sociotechnical challenges of machine learning in AI-enabled workplace learning Tyler Reinmund, Marina Jirotka, UK A data-driven approach to identify feedback elements for effective VR training Werner Ravyse, Kimmo Tarkkanen, Mika Luimula, Jouni Smed, Finland Using design thinking methods to explore the application of augmented reality in the smart firm Chao-Tse Cheng, Hsien-Mi Meng, Chao-Hung Wang, Kuo-Wei Su, Taiwan Virtual technologies and digital twins for logistics hub development Heikki Ruohomaa, Vesa Salminen, Finland Aligning just-in-time learning with digital transformation Oliver Tian, Shanlynn Lee, Vesa Salminen, Singapore	

117	**Simulation Workload, Usability, Acceptance and Engagement** Co-Chairs: Debra Patton and Lisa Townsend, USA	HFSIM
8:30-10:00 - AHFE 7	Mental workload: A prerequisite for future maintenance design Lorrys Berthon, Fabien Bernard, Sylvain Fleury, Raphael Paquin, Simon Richir, France Early-stage usability testing of thermal power dispatch simulator using novice operators Olugbenga Gideon, Thomas Ulrich, Roger Lew, Benjamin Barton, Zethnouneay Dubois, USA Visualizing uncertain real time threat information in augmented reality aided target recognition: Lessons learned from virtual reality simulation Aaron Gardony, Andrew Whitig, Kana Okano, USA Integrating experiential simulation into classroom instruction with synthetic experience events Kevin Owens, Lisa Townsend, Benjamin Goldberg, USA Usability heuristic review of an intelligent tutoring system framework Anne Sinatra, USA	
118	**From Data to Implementation - Leveraging Health Informatics to Improve Patient Care** Co-Chairs: Sungho Kim, South Korea and Martin Thissen, Germany	HIBEA
8:30-10:00 - AHFE 8	A longitudinal study on hearing loss in South Korean air force pilots: Evidence from electronic medical records Sungho Kim, Kyehyun Kim, Kgyungwon Kim, Juhyeong Yang, Hong-kyung Lee, Jungwoon Kim, Geonhui Kim, Seunghoon Yoo, Younggun Lee, Dongsoo Kim, South Korea Digital health data donation - Analysing the willingness to actively donate self-generated health data in Germany Silvia Zaharia, Kristina Ivanova, Germany Enhancing ultrasound imaging through convolutional neural networks: A health informatics approach Fan Yang, Qian Mao, Menghan Shi, Fangling Xie, Ka wai Eric Cheng, Hong Kong SAR China Enhancing canine musculoskeletal diagnoses: Leveraging synthetic image data for pre-training ai-models on visual documentations Martin Thissen, Ben Joel Schönbein, Barbara Esteve Ratsch, Ute Trapp, Floristan Pieper, Romana Piat, Thi Ngoc Diep Tran, Beate Egner, Mark Fischinger, Elke Hergenröther, Germany Colors in mind: A comprehensive study on the neurological impact of saturation Ana Teixeira, Sonia Brito-Costa, Anabela Gomes, Portugal	

119	**Human Factors in Artificial Intelligence and Social Computing II** Co-Chairs: Emmanuel Brorsson, Sweden and Alina Latipova, UK	AISC
8:30-10:00 - AHFE 9	**Development of neural networks for deepfake recognition** Alina Latipova, Maria Yadryshnikova, UK **Evaluating explainability of time series models: A user-centered approach in industrial settings** Emmanuel Brorsson, Yanqing Zhang, Elmira Zohrevandi, Nilavra Bhattacharya, Rasmus Tammia, Andreas Darnell, Willem Van Driel, Andreas Theodorou, Sweden **A novel agent-based framework for conversational data analysis and personal AI systems** Bartosz Kurylek, Arthur Camara, Akash Nandi, Evangelos Markopoulos, UK **Prompt my prototype: NaiVE framework for artificial intelligence use in engineering product development** Donovan Esqueda Merino, Oliver Gómez Meneses, Hector Rafael Morano Okuno, Ricardo Jaramillo Godinez, Daishi A Murano Labastida, María De Los Angeles Ramos Solano, David Higuera Rosales, Rafael Caltenco Castillo, Karla Rodríguez Gómez, Iván Díaz De León Rodríguez, Mexico **A systematic review of changing conceptual to practice AI curation in museums: Text mining and bibliometric analysis** Shengzhao Yu, Jinghong Lin, Yuqi Zhan, Jun Huang, China **Unveiling mental health insights: A novel NLP tool for stress detection through writing and speaking analysis to prevent burnout** Matteo Mendula, Silvia Gabrielli, Francesco Finazzi, Cecilia Dompe, Mauro Delucis, Italy **Construction of Japanese-Chinese onomatopoeia corpus based on events and behaviors** Wenjing Zhang, Amika Chino, Takehiro Teraoka, Siyu Yan, Japan	
120	**Driver Performance, Behavior and Physiology III** Co-Chairs: Jiaxin Wang, China and Mikael Johansson, Sweden	RR
8:30-10:00 - AHFE 10	**Driving fatigue recognition based on the combination of multimodal features** Zehong Wei, Jiaxin Wang, Lei Shi, Qingju Wang, Yuanyuan Ren, Xuelian Zheng, China **A novel adaptive physio-behavioral method for optimizing performance: Using grip force for augmenting driver training** Yotam Sahar, Michael Wagner, Shraga Shoval, Israel **Understanding drivers' interaction with traffic environments - A traffic semantic approach** Marianne Karlsson, Mikael Johansson, Sweden **Creating realistic traffic simulations with the stochastic cognitive model** Alexandra Fries, Felix Fahrenkrog, Germany **Analysis of design for sustainable behavior in driving: Theory, methods, and future trends** Jiaren Yang, China **Digital gamification as action to reduce road accidents: The videogame SLEEP-RO@D** Emma Pietrafesa, Sergio Garbarino, Simone Russo, Donatella Vasselli, Antonella Polimeni, Agnese Martini, Italy	

121	**Performance, Risk, and Wellness in Sports** Co-Chairs: David Eager, Australia and Stijn Verwulgen, Belgium	SIPOR
8:30-10:00 - AHFE 11	Neck injury risk during falls into foam pits David Eager, Australia VibroTactile feedback application for correcting and guiding posterior knee flexion during the loading phase of a baseball swing Harold Langezaal, Guido De Bruyne, Stijn Verwulgen, Belgium Prism glasses reduce aerodynamic drag in time trial cycling on the velodrome Dries Matthys, Siemen Lippens, Stijn Verwulgen, Belgium Approach for evaluating breast motion for sports bra design Kwok Tung Hui, Yeok Tatt Cheah, Kit Lun Yick, Ho Ching, Joanne Yip, Sun Pui Ng, Hong Kong SAR China Gender disparities in wrist movement patterns among collegiate amateur golfers: A biomechanical case study Ka Hin Kevin Lee, Yueqing Li, UK Optimal calorie intake for undergraduate students during university hours Atef Ghaleb, Karim Qawasmi, Sultan Alowedi, Saudi Arabia Investigating the relationship between microclimate factors and human exercise performance from the perspective of citizen science Yi Ming Quek, Nho An Dinh, Kenneth Y. T. Lim, Duc Minh Anh Nguyen, Nguyen Thien Minh Tuan, Singapore	
	Refreshments: 10:00-10:30 • Location Lobby Level	
122	**Putting the Human First: Balancing Benefits and Risks in the Digital Age** Co-Chairs: Christine Leitner, UK and Christoph Glauser, Switzerland	HSSE
10:30-12:30 - AHFE 1	T-shaped professionals: The past, present, and future of MyT-Me development Louis Freund, James Clinton Spohrer, Pavel Savva, Yash Gandhi, USA Exploring regulatory frameworks for AI/ML through different lenses: A comparative approach Stephen Kwan, Christian Stiefmueller, Christine Leitner, UK Arts of survival: Stakeholder engagement and co-creation of food sustainability and resilience solutions Kristina Reinsalu, Estonia Success factors and digital impact KPIs as key to all user/citizen centric applications Christoph Glauser, Switzerland From generative AI to generative organizations: A service lens on organizational learning and development Markus Warg, Eric Schott, Markus Frosch, Germany Harnessing growth-mindedness to enhance organizational effectiveness Jonathan Lenchner, Anna Topol, Mariusz Sabath, Laura C. Anderson, USA	

123	**Design for Inclusion and Visual Design** Co-Chairs: Raffaella Massacesi, Italy and Fausto Zuleta Montoya, Colombia	DI
10:30-12:00 - AHFE 2	Developing empathy in design workshops for diverse functionalities Fausto Zuleta Montoya, Gustavo Sevilla-Cadavid, Colombia Estimating ground reaction force during walking in patients with knee osteoarthritis Sae Akabane, Ami Ogawa, Japan Creating a diverse and inclusive learning community: How effective visual communication contributes to STEM diversity Clara Choi, USA Advancing inclusive gaming: A framework for the visually impaired Wenhui Sun, Wei Huang, Lan Chen, Hua Yang, China Eros and ecology. The new alchemy of sustainable design Dario Russo, Italy Visual design for diversity and inclusion in web design Raffaella Massacesi, Italy	
124	**Technologies for Smart Devices: Performance and Evaluation** Co-Chairs: Marc Dufraisse, France and Lucky John Tutor, China	HFWT
10:30-12:00 - AHFE 3	Monitoring rehabilitation of stroke patients using automated Fugl-Meyer Assessment Lucky John Tutor, Yi Cai, China Occupational exoskeletons as symbionts: Defining operator-exoskeleton interactions Marc Dufraisse, Lien Wioland, Jean-Jacques Atain-Kouadio, Julien Cegarra, France Programming situated visualizations in the field: Development of ergonomic body support for the keyboard and upper extremities Begoña Julia Nehme, Leonel Merino, Ariana Cisternas, Antonia Valencia, Ljubedsa Catalina Calderon Rojas, Sof Gonz, Ignacio Osorio, Chile Exploring simultaneous localization and mapping (SLAM) technology for complex equipment maintenance with the perspective of human-machine collaboration Hsiao-fan Lin, Yong-siang Su, Chao-tse Cheng, Chao-hung Wang, Kuo-Wei Su, Taiwan An Intelligent monitoring method of pilot's operating state based on PCA and WOA-KELM Wanchen Jia, Xu Wu, Xiang Xu, Lin Ding, Chongchong Miao, China Evaluation of stress intervention performance and usability of smartwatch guided breathing practice Shuyi Liu, Rong Rong, Hanling Zhang, China	

125	**Technological Solutions for Rehabilitation and Healthcare Improvement** Co-Chairs: Patrick Seitzinger, Canada and Akanksha Singh, USA	EHMD

10:30-12:00 - AHFE 4

Trends in grasp gesture with different levels of load using the 3D printed hand rehabilitation orthosis
Ji-hun Jo, Mustapha Dere, Hyeong-jun Park, Boreom Lee, South Korea

Clinician factors for human centered design of an interactive health recommender system for improving clinical shared decision making
Akanksha Singh, Benjamin Schooley, John Brooks, Sarah Floyd, USA

Reconceptualising multiculturalism in an evolving landscape of healthcare delivery
Jay Kalra, Mackenzie Marchant, Zoher Rafid-Hamed, Patrick Seitzinger, Canada

Development of a semi-automatic patient lift vehicle for bedridden or wheelchair-bound persons with reduced mobility
José Alonso Dena-Aguilar, Enrique Javier Martínez-Delgado, Víctor Manuel Velasco-Gallardo, Edgar Zacarías-Moreno, Ludovico Hernández-Aguilar, Ruth Elizabeth Martínez-Escobedo, Mexico

Design of a corrective hip orthosis for patients with abnormal flexor pattern after transfemoral amputation
Marian Joselyn Ramírez Román, Judith Guadalupe Zepeda Flores, Martin Romero, Pablo Arturo Ramos Sandoval, Blanca Mora, Sergio-Alberto Valenzuela-Gomez, Mexico

Design of a semi-automatic passive knee mobilizer for lower limb rehabilitation
Alicia Lizbeth Paredes-Cuan, Brandon Alexis Vázquez Ruiz, Sergio-Alberto Valenzuela-Gomez, Grecia Miroslava Martínez González, Marisol Tadeo Gaspar, Mexico

Development of an electric wheelchair for the mobility of people with chronic reduced mobility
Enrique Javier Martínez-Delgado, José Alonso Dena-Aguilar, Víctor Manuel Velasco-Gallardo, Edgar Zacarías-Moreno, Ludovico Hernández-Aguilar, Luis Enrique Hernández-de la Rosa, Mexico

126	**Physical Ergonomic Evaluation II** Co-Chairs: Dongsoo Kim and Hyesu Park, South Korea	PEHF

10:30-12:00 - AHFE 5

Daily multidimensional fatigue scale and physiological indicators to minimize subjective bias in assessing fatigue levels
Dongsoo Kim, Yongkyun Lee, Hyesu Park, Sitai Kim, Younggun Lee, Seunghoon Yoo, Sungho Kim, Choongsik Oh, Hyesik Yun, Joonghoon Ko, Jongwoo Ha, South Korea

AzKCLI: A semi-automatic tool for Compositive Lifting Index (CLI) evaluation through Azure Kinect
Chiara Forgione, Francesco Lolli, Antonio Maria Coruzzolo, Rita Gamberini, Italy

The influence of school-aged children carrying weighty bags on musculoskeletal complaints over seven to nine years in Thailand
Jittaporn Mongkonkansai, Chuchard Punsawad, Chadapa Rungruangbaiyok, Udomsak Narkkul, Thailand

Application of cooling vest for chemical agent responders
Rensheng Deng, Yuan Xing Xu, Singapore

Reduced work pace in a Brazilian chicken slaughterhouse
Diogo Cunha dos Reis, Adriana Seara Tirloni, Antônio Renato Pereira Moro, Brazil

Effect of variable cordless stick vacuum weights on discomfort in different body parts during floor vacuuming task
Md Arafat Sikder, Minhazur Rahman Bhuiyan, Shirin Begum, Fagbemi Ayodeji Princewill, Yueqing Li, USA

Exploring the correlation between seat backrest angles and motion sickness response in ship rocking conditions
Wu Jinliang, China

127	**UX and Usability Evaluation for Product and Service Design** Co-Chairs: Tien-ling Yeh, Australia and Wanyi Wei, China	UUE
10:30-12:00 - AHFE 6	Exploring flow experience requirements in intelligent fitness through the perspective of whole-body interaction Siyue Lin, Yonghong Liu, Chen Qingxia, China Task-based and problem-based heuristics: Could they be mobilized as a verification mechanism for usability heuristics? Genovefa Kefalidou, UK Enhancing automotive interface design: insights from touchscreen usability and driver interaction studies Vincent Trijard-Caddy, China The influence of parent-child toys and time of playing together on children's problem-solving skills in the early post-COVID years Tien-ling Yeh, Australia The effect of congruity between background music language and brand culture on consumer behavior Hui Zhang, Wanyi Wei, Yingping Cao, China Challenges and opportunities of low-code Figma and Modul-F for use within the public sector Marleen Vanhauer, Stephan Raimer, Germany Optimizing chip assembly in laboratories: The influence of indicator color and lighting on user experience Haocheng Han, Yuanyuan Liu, Lu Haibo, Han Meng, China	
128	**Innovative Approaches and Applications in Work Optimization and Human-Machine Interaction** Co-Chairs: Leif Goldhahn and Anja Koonen, Germany	SYSI
10:30-12:00 - AHFE 7	Error communication in manual assembly through a projection-based assistance system Antonia Markus, Johanna M. Werz, Lea Marleen Daling, Esther Borowski, Ingrid Isenhardt, Germany Human factors in technology and knowledge transfer: A qualification concept of the WIN: A project for effective personal and medial transfer structures Anja Koonen, Nina Collienne, Theresa Joerißen, Esther Borowski, Ingrid Isenhardt, Germany Innovative methods for robot programming: Development and comparison Mohammad-Ehsan Matour, Christian Thormann, Alexander Winkler, Germany Using categorical functional data analysis to personalize user workflow and improve technological engagement Xiaoxia Champon, Chathura Jayalath, Ana-Maria Staicu, William Rand, USA Next-generation cognitive assessment: Technological advances for clinic, office and home settings Peter Hall, James Mackillop, Hasan Ayaz, Dante Duarte, Amer Burhan, Canada The potential of haptic motion cueing to mitigate motion sickness in highly automated passenger cars William Emond, Mohsen Zare, France IoT-based vertical farming systems Javed Anjum Sheikh, Asia Mumtaz, Saba Farzeen, Pakistan	

129	**Methodology and Applications of Complex Systems in Social Sciences** Co-Chairs: Catherine Neubauer and Zining Yang, USA	HFSIM
10:30-12:00 - AHFE 8	Technological fluency in the digital era: A concept map integrating competencies and technological demands Jonathan Kochert, Anthony Scroggins, Jennifer Klafehn, USA Identification of knowledge, skills, abilities and other behaviors to predict technological fluency Catherine Neubauer, Kimberly Pollard, Kyle Benbow, Ashley Rabin, Daniel Forester, USA Quantitative approach of policy drivers in clean energy transition: Unveiling the interconnected pathway Zining Yang, Richie Li, USA Design recommendations for integrating AR in VR environments within defence research Craig Williams, Hannah Blackford, UK	
130	**Industry 4.0 and Intelligent Manufacturing Technologies II** Co-Chairs: Maciej Ciszewski, Poland and Claudia Pereira, Portugal	MFG
10:30-12:00 - AHFE 9	A systematic framework for the integration of lean, green, and human factors for sustainable production Amjad Hussain, Amjad Mehmood, Mohammed Khurrum Bhutta, Pakistan Interdependency matrix to evaluate influence factors in circular value creation systems Nada Ruzicic, Anja Braun, Peter Ohlhausen, Germany Integrating work-study and economic modelling: Towards the development of a harvest management decision support system Noy Saraf, Bracha Gal, Yael Salzer, Israel Designing hybrid intelligence: Understanding the impact of human decision-making on ai Melanie Kessler, Oliver Antons, Julia Arlinghaus, Germany Assessment of the validity of implementing the Shopfloor Management (SFM) method. Methodology and its application Magdalena K. Wyrwicka and Maciej Ciszewski, Poland Technological transformation in manufacturing processes: How can workers be valued? Claudia Pereira, Marta Santos, Maria Cadilhe, Liliana Cunha, Portugal Factors affecting the pillow effect in single-point incremental forming Guoping Jiang, Xiaojun Liu, Jin Shi, China	

131	**User Experience and Kansei Research and Product Development Methodologies II** Co-Chairs: Jan Daniel Horst, Japan and Chen Zimo, China	KE
10:30-12:00 - AHFE 10	Investigation of crossmodal correspondence between visual vibratory stimuli and color choice Jan Daniel Horst, Takeo Kato, Jumpei Hayashi, Japan Study on the shape design of off-road vehicle combined with double diamond model Huajie Wang, Zhang Jin, Xikai Tan, China/UK Exploring the relationship between form features and price perception Chunheng Ho, Feichen Wu, Hanbing Li, Taiwan A front face design of new energy vehicles based on rough set theory and backpropagation neural network Chen Zimo, Feng Hailong, Li Yajun, China Assessing self-disclosure willingness in metaverse-based structured group encounter Teru Kawakita, Hideaki Kanai, Japan Mapping the unseen: Outcome-based instrument for perceived workload of operations management Andi Zhou, Alison Fournier, USA	
132	**Neuroergonomics: Neural Feature Extraction and Use** Co-Chairs: Kenneth Y. T. Lim, Singapore and Sinan Guo, China	CN
10:30-12:00 - AHFE 11	Insights through gaze: Unraveling visual patterns in domain-specific learning Sonali Aatrai, Sandhya Gayatri Prabhala, Saurabh Sharma, Rajlakshmi Guha, India Study of emotional contagion through thermal imaging: A pilot study using noninvasive measures in young adults Prachi Joshi, Hirak Banerjee, Avadhoot V. Muli, Aurobinda Routray, Priyadarshi Patniak, India NeuroDesign2.0: A framework of visual perception in visual communication Jun Chen, Mengyao Guo, Macau SAR China Rapid detection of near-infrared spectral response of neural activity in prefrontal cortex Xiaodan Wang, Tianrui Qi, Yiyuan Zheng, Shan Fu, Yanyu Lu, China A potential rapid detection of cognitive status in the brain: An fNIRS study Tianrui Qi, Xiaodan Wang, Yiyuan Zheng, Shan Fu, Yanyu Lu, China The use of Bespoke wearables to investigate neurological and physiological responses to microclimate stressors in quasi-formal academic contexts Duc Minh Anh Nguyen, Nguyen Thien Minh Tuan, Kenneth Y. T. Lim, Hugo Posada-Quintero, Singapore Influences of information processing modality on mental workload recognition performance based on EEG feature extraction Sinan Guo, Wanchen Jia, Lin Ding, Chongchong Miao, China	
12:00-13:30 Enjoy lunch at the restaurant of your choice		

133	**Democratic Decision Support in Industrial Scenarios** Co-Chairs: Sylwia Olbrych, Germany and Lucas Paletta, Austria	CCIoT
13:30-14:30 - AHFE 1	Resilience scores from wearable biosignal sensors for decision support of worker allocation in production Lucas Paletta, Michael Schneeberger, Martin Pszeida, Jochen Mosbacher, Florian Haid, Julia Tschuden, Herwig Zeiner, Austria Democratization in Industry via multi-agent systems, The case of a production company Noushin Gheibi, Stefan Boeschen, Germany Explainability of industrial decision support system using digital design thinking with Scene2Model Christian Muck, Julia Tschuden, Herwig Zeiner, Wilfrid Utz, Austria From simple to sophisticated: investigating the spectrum of decision support complexity with AI integration in manufacturing Sylwia Olbrych, Alexander Nasuta, Marco Kemmerling, Anas Abdelrazeq, Robert H. Schmitt, Germany Explainability as a means for transparency? Lay users' requirements towards transparent AI Johanna M Werz, Esther Borowski, Ingrid Isenhardt, Germany	
134	**Social and Organizational Factors** Co-Chairs: Roger Persson, Sweden and Svetlana Koc erova, Latvia	SOE
13:30-14:30 - AHFE 2	Self-reported noise sensitivity and perceived enjoyment of working in an open office environment Roger Persson, Jonas Borell, Emilie Stroh, Sweden Process improvement with AI in service industry: Case studies Svetlana Kocerova, Henrijs Kalkis, Zenija Roja, Latvia Globalisation, cultural pluralism and the formation of vocational identity in the world of “boundaryless” careers Agnieszka Cybal-Michalska, Poland Elements constructing intercultural competence: Perspectives and stories from interview responses Chihiro Tajima, Japan Psychological impacts of different organizational cultures toward telecommuting on workers Toshihisa Doi, Japan	

135	**Artificial Intelligence, Mentoring and Managing Diversity in an Organization** Co-Chairs: Tero Reunanen and Jussi Kantola, Finland	HFBMS
13:30-14:30 - AHFE 3	Correlation between students' satisfaction with studies and graduation Tero Reunanen, Vesa Taatila, Marjo Joshi, Finland Artificial intelligence as a catalyst: A case study on adaptive learning in programming education Tero Reunanen, Noora Nieminen, Finland Mentoring for transition: Optimizing mentorship through competency assessment among young people Jarno Einolander, Jussi Kantola, Hannu Vanharanta, Finland Democracy and artificial general intelligence Elina Kontio, Jussi Salmi, Finland Understanding drivers and barriers to employment for individuals with disabilities Živilė Stankevičiūtė, Lina Girdauskiene, Asta Savanevičienė, Lithuania	
136	**Research for Digital Environments and Game Design** Co-Chairs: Yang Cai, USA, Marc Antoine Moinnereau, Canada and Danielle Benesch, Canada	HFGD
13:30-14:30 - AHFE 4	Articulated spatial audio for minimally invasive surgery training Yang Cai, Joshua Paik, USA A survey on the relationship between stress, cognitive load, and movement on cybersickness Marc Antoine Moinnereau, Danielle Benesch, Gregory P. Krätzig, Simon Paré, Tiago Henrique Falk, Canada Human factors and pedagogic principles to design a fire-safety pedagogic game David Oliva, Kimmo Tarkkanen, Timo Haavisto, Brita Somerkoski, Axel Lindberg, Mika Luimula, Finland Measuring detection and habituation of olfactory stimuli in virtual reality for improved immersion Scott Ledgerwood, Erika Gallegos, Marie Vans, USA Mania Archetype: Chart generation in rhythm action games with human factors' Jiale Wang, Wei Huang, Xiu Li, China Physical human factor parameters through VR leisure contents: Focused on motion feature extraction for adults from VR bowling Yeong-hun Kwon, Yun-hwan Lee, Minsung Yoon, Soyeong Park, Son Daehoon, Kim Yebon, Hyojun Lee, Yohan Ko, Jongsung Kim, Jongbae Kim, South Korea	
137	**HSSE Best Paper and Wrap Up**	HSSE
13:30-14:30 - AHFE 5	Co-Chairs: Christine Leitner, UK, Clara Bassano, Italy, Debra Satterfield, USA, and Rainer Nägele, Germany	

138	**Innovations in Assistive Devices and Aging Well** Co-Chairs: Kai-yu Tong, Hong Kong SAR China and Yi Sin Wu, Taiwan	HFAS

13:30-14:30 - AHFE 6

Design a rehabilitation platform to improve mild cognitive impairment by integrating cognitive training games with moderate-intensity cycling exercise
Hsuan-yu Lu, Zhongping Ye, Chun Hang Ti, Cathy Lau, Chengpeng Hu, Xiangqian Shi, Kai-yu Tong, Hong Kong SAR China

Assessment of elderly oriented assistive devices
Xiaoli Fan, Hua Guo, Feng Wu, China

Cool guy's adventure: A sensory integration game designed for children with attention deficit hyperactivity disorder (ADHD)
Yi Sin Wu, Chang Teng, Taiwan

Design strategies of outdoor fitness equipment for elderly community based on KI method and KANO
Li Xu, Ao Yu, Yuquan Zhou, Xiaoxuan Jiang, China

Unveiling the future design of health management systems: An exploratory study on older adults' perceived usefulness of functional modules
Qian Mao, Zhen Zhao, Lisha Yu, Hailiang Wang, Hong Kong SAR China

Defining the role of HFE in device combination product design and qualification
Randal McCarthy, Zhonghai (John) Li, USA

139	**Artificial Intelligence - Machine Learning and Technology Utilization** Co-Chairs: Helina Oladapo, USA, Steven Tze Fung Lam, Hong Kong SAR China and Jonathan Källbäcker, Sweden	GIC

13:30-14:30 - AHFE 7

Digital transformations and their impact on the economy, public relations and quality of life
Valentina Milenkova, Albena Nakova, Emilia Chengelova, Karamfil Manolov, Bulgaria

Towards a framework for digital work engagement of enabling technologies
Andreas Bergqvist, Jonathan Källbäcker, Rebecca Cort, Åsa Cajander, Jessica Lindblom, Sweden

Application of artificial intelligence, machine learning and deep learning in piloted aircraft operations: systematic review
Steven Tze Fung Lam, Alan H. S. Chan, Hong Kong SAR China

Improving product design efficiency through integrated AI tools: An empirical study
Yubin Zhong, Jiawei Ou, Kaiqiao Zheng, Yan Luximon, Jing Luo, China

Artificial intelligence (AI) adoption in higher education institutions in developing contexts: A case study of a technology university
Eric Owusu, Ralitsa Diana Debrah, Helina Oladapo, USA

144	**Design for Health, Comfort and Quality** Co-Chairs: Jinjin Chen and Shuangying Chen, China	ED
14:30-16:00 - AHFE 1	Evaluation of wearing comfort in virtual reality devices using analytic hierarchy process Yujia Du, Wang Haining, China Improvement design of age-friendly supermarket shopping carts based on ergonomics Junyao Wu, Liya Hu, Zhijuan Zhu, China Correlation research on early-stage design data search strategies and design quality Yu-Ling Zhan, Chunheng Ho, China AI-powered emotion recognition for maritime safety enhancement Laura Pagani, Paolo Gemelli, Mario Ivan Zignego, Alessandro Bertirotti, Italy Development and evaluation of a body mapping tank-top for early stage scoliosis treatment in adolescents Jinjin Chen, Joanne Yip, Yiu Hong Wong, China Intelligent healthy cabin design strategy based on context awareness theory Shuangying Chen, Lingyan Zhang, Qianxi Zhang, Yun Wang, China Exploration of future travel scenarios based on futurology and speculative design tools and methods Yao Shuai, China	
145	**Digital Human Modeling and Applied Optimization** Co-Chairs: Alexander Ackermann, Germany and Elham Ghorbani, Canada	DHMAO
14:30-16:00 - AHFE 2	Feasibility validation of digital human modeling for dynamic anthropometry: Insights learned from human subjects' research Seowoo Kim, Hyunwook Kim, So Hyun Lee, Jisun Byun, Sungin Cho, Juyeon Park, South Korea Standardization of a dynamic posture protocol for anthropometric measurement: Applying the 4D-to-3D extraction method Hyunwook Kim, Seowoo Kim, So Hyun Lee, Juyeon Park, South Korea Validation of a 3D body scanner system with automated circumference measurement calculation while considering the influence of different 3D data types Alexander Ackermann, Thomas Jaitner, Sascha Wischniewski, Germany Research in a Suitcase: Building flexible hand anthropometric studies for occupation and civilian populations Emily Seifert, Vanessa Segura, Tse-hsun Kuo, Minji Yu, Julianne Bur, Linsey Griffin, USA Fuzzy ergonomic expert system for assembly line design problem Elham Ghorbani, Samira Keivanpour, Firdaous Sekkay, Daniel Imbeau, Canada Machine learning prediction model for hand envelope Tse-hsun Kuo, Vanessa Segura, Emily Seifert, Linsey Griffin, USA Haptic perception with artificial tissues Yang Cai, Talia Perez, USA	

146	**Software Engineering Applications** Co-Chairs: Shinichi Fukuzumi, Japan and Ellen Bass, USA	HFSSE
14:30-16:00 - AHFE 3	Approach to member checking support for characterizing team processes with discrepant information about team roles Ellen Bass, Ya Xuan Wu, Nathaniel Barnett, USA Human centered design (HCD) and software development process Shinichi Fukuzumi, Nowky Hirasawa, Japan A definition of inclusive systems engineering Sandor Dalecke, Germany Designing user persona cards to support the development of digital human-computer interaction learning games Eduardo Palmeira, André Barros De Sales, Mateus Augusto Sousa Silva, Fabiana Mendes, Brazil Green software engineering practices: Familiarity, skills and understandability among Mid-Bachelor ICT students Kimmo Tarkkanen, Finland	
147	**Virtual Reality, Digital Solutions and User Experience** Co-Chairs: Qichao Zhao and Haijing Tang, China	UUE
14:30-16:00 - AHFE 4	Factors influencing Chinese college students' simultaneous smartphone use in the classroom Haijing Tang, Qin Gao, China Usability issues of visually impaired people using food delivery platforms Wan-chen Wu, Wan-ling Chang, Taiwan Exploring the optimal proportion range of gesture input keyboard in virtual reality based on human factors engineering Furui Sun, Wanzheng Liu, Huiran Sun, China Impact of virtual reality technology-based marketing strategies on consumer shopping decisions Qichao Zhao, Han Li, Qingju Wang, Lin Shen, Ping Wu, China Comparative analysis of an existing and newly designed e-wallet smartphone application among the elderly in the Philippines Ainah Katrine B. Capule, Philippe Nathaniel E. Fabian, Isabelle Bianca P. Gatdula, Mike Jayson M. Navarte, Carlos Ignacio P. Lugay, Philippines An Inclusive design methodology for smart home products good for market performance Nan Jiang, Jian Wu, Shuming Zhang, Yao Ding, Fengyi Guo, China A model of self-directed learning platform for college students based on user experience elements Yang Yunze, Pu Meng, Zhuoyue Diao, Xin Meng, Liqun Zhang, China	

148	**Training and Assessment: Applications for Enhanced Learning** Co-Chairs: Yang Cai, USA and Chen Zhi Cheng, Taiwan	TELS
14:30-16:00 - AHFE 5	Multimodal extended reality for laparoscopic surgery training Yang Cai, Talia Perez, USA Applying paper prototyping to design an AR teaching tool for novice woodworkers practicing components arrangement in material cutting Chia-Lin Yang, Chien-Hsu Chen, Taiwan Aircraft maintenance training and assessment: The potential applications of mixed reality Chunhao Yao, Lin Ma, Fei Wu, Yuanyuan Liu, China The impact of AI image generator on traditional visual learning: New possibilities in English language learning Shuo-fang Liu, Chen Zhi Cheng, Yi Chieh Wu, An Yu Su, Taiwan French as a second language (L2) and AI: Deep learning models to the rescue of object clitics Adel Jebali, Canada Comparing the pedagogical setup of contemporary chair-based sitting with traditional Indian (cross-legged) way of ground-based sitting: A Narrative review Abhishek Srivastava, Sonal Atreya, India	
149	**Human Factors in Robotics Research: Autonomy and Trust** Co-Chairs: William Lawless, USA and Erwann Landais, France	HFRDUS
14:30-16:00 - AHFE 6	Re-expression of manual expertise through semi-automatic control of a teleoperated system Erwann Landais, Vincent Padois, Nasser Rezzoug, France Identification of management and supervision critical tasks for a multi-effector automated system. An applied cognitive approach Benjamin Coulomb, Julien Donnot, Aurélie Klein, Jean-Marc Andre, Françoise Darses, France Bidirectional human-AI/machine collaborative and autonomous teams: Risk, trust and safety William Lawless, USA Human autonomy teaming: Proposition of a new model of trust Helene Unrein, Théodore Letouzé, Jean-Marc André, Sylvain Hourlier, France Multi-modal approach for evaluating human-autonomy team trust Ralph Brewer, Andrea Krausman, Catherine Neubauer, USA	

150	**Human Factors in Next-Generation (Next-Gen) Cybersecurity** Co-Chairs: Rahmira Rufus and Yasmin Eady, USA	CYBER
14:30-16:00 - AHFE 7	**Using DESM to demonstrate how behavior can impact an enterprise's physical attack surface structure** Rahmira Rufus, Jeff Greer, Ulku Clark, Geoffrey Stoker, Thomas Johnston, USA **Proposing a DESM-based analytical framework for the enterprise cyber defender** Rahmira Rufus, Jeff Greer, Ulku Clark, Geoffrey Stoker, Thomas Johnston, USA **Interactive virtual learning environment to develop next-generation cybersecurity practitioner competency** Rahmira Rufus, Jeff Greer, Ulku Clark, Geoffrey Stoker, Thomas Johnston, USA **Biometric authentication for the mitigation of human risk on a social network** Aldrewvonte Jackson, Kofi Kyei, Yasmin Eady, Brian Dowtin, Bernard Aldrich, Albert Esterline, Joseph Shelton, USA **Measuring how appropriate individuals are for specific jobs in a network of collaborators** Yasmin Eady, Kofi Kyei, Aldrewvonte Jackson, Bernard Aldrich, Brian Dowtin, Joseph Shelton, Albert Esterline, USA **A notion of trustworthiness based on centrality in a social network** Kofi Kyei, Yasmin Eady, Aldrewvonte Jackson, Bernard Aldrich, Brian Dowtin, Joseph Shelton, Albert Esterline, USA	
151	**Human Error and Performance Analysis** Co-Chairs: Josue Franca, Brazil and Taro Kanno, Japan	HERRP
14:30-16:00 - AHFE 8	**Dynamic assessment method for group decision-making errors in extreme work environment driven by team cognitive model** Yidan Qiao, Deng Kai Chen, Wenyi Liao, Lin Ma, Haotian Li, China **Data collection and analysis of inter-area communication during a disaster exercise at a large hospital** Hiroki Obara, Taro Kanno, Kazumi Kajiyama, Haruka Yoshida, Misumi Yamazaki, Sachika Sharikura, Michihiro Tsubaki, Japan **Flight simulation task performance predicts military multitasking better than laboratory measures** Yannik Hilla, Maximilian Stefani, Marco Michael Nitzschner, Wolfgang Mack, Germany **Investigation of human performance in diagnosing unexpected events at nuclear power plants** Wondea Jung, South Korea **Field operators' visual inspection practices in the operating Finnish nuclear power plants** Tomi Passi, Satu Pakarinen, Marja Liinasuo, Finland **Crew resource management evaluation for pilots: A modern perspective** Kiranraj Pushparaj, Hui Wang, David Esser, Barbara Holder, USA **Critical analysis of the interviews in the investigation of accidents in the O&G area – case study of 19 accidents in Brazil** Josue Franca, Brazil	

152	**Human Factors in Energy: Offshore Drilling and Control Room Design** Co-Chairs: Maryam Tabibzadeh, USA and Anna-Lisa Osvalder, Sweden	ENERGY
14:30-16:00 - AHFE 9	Navigating the future control room: Trends, challenges, and opportunities Signe Svensson, Anna-Lisa Osvalder, Jonas Borell, Sweden Staffing in small modular reactors - first impressions Awwal Arigi, Maren Eitrheim, Norway Overview of displays for nuclear control rooms: A good practices study Alf Ove Braseth, Alexandra Fernandes, Norway Measuring nuclear control room operators' performance in the context of overview displays Alexandra Fernandes, Alf Ove Braseth, Robert McDonald, Norway Advancing safety culture in offshore drilling industry: The BP Deepwater Horizon blowout as a case study Maryam Tabibzadeh, Mohammad Mokhtari, USA/Iran Initial operating experiences in a digital control room Hanna Koskinen, Jari Laarni, Satu Pakarinen, Tomi Passi, Kristian Lukander, Tuisku-Tuuli Salonen, Marja Liinasuo, Finland	
153	**Design, Co-Creation and Innovation III** Co-Chairs: Hector Rafael Morano Okuno, Mexico and Eva Monestier, Italy	CIE
14:30-16:00 - AHFE 10	Engineering project management skill development in research vs. corporate realms Donovan Esqueda Merino, Hector Rafael Morano Okuno, Daishi A Murano Labastida, Jesus Enrique Chong Quero, Gloria A González Sarmiento, Arturo Vargas Olivares, Arturo Desaix López Rojas, Carlos Alberto Cruz Villar, Joaquin Loaiza Martínez, Armando R San Vicente Cisneros, Daniel Rodriguez Flores, Mexico Design guidelines and strategies for interim innovation Xin An Chen, USA Beyond boundaries: Art-tech collaboration driving future-oriented innovation Tatiana Efremenko, Marita Canina, Eva Monestier, Maria Ida Fiore, Italy Design thinking in higher education: An action research approach to developing creative problem-solving skills in young designers Amic Ho, Ruth Chau, Hong Kong SAR China A pilot fMRI study for understanding the facial perception of 3D human faces Yuqian Wang, Yue Wei, Yan Luximon, Hong Kong SAR China Towards enhancing awareness on sustainable development: A survey of the types, functional uses and project-level applications of geosynthetics Matthew Kwaw Somiah, Clinton Aigbavboa, John Bentil, Wellington Didibhuku Thwala, Ghana	
	Refreshments: 16:00-16:30 • Location Lobby Level	

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, WEDNESDAY, JULY 24, 2024
Time: 10:30-14:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

A1. **Performance differences of single-feature visual search under various spatial-cues between healthy elderly, patients with MCI and patients AD patients**
Min-Sheng Chen, Taiwan

A2. **About ride comfort due to differences in running speed of manual attendant-controlled wheelchairs**
Shoichiro Fujisawa, Shunsuke Jutori, Koutaro Ishimoto, Yitong Wang, Kaito Arashi, Jyunji Kawata, Jiro Morimoto, Yoshio Kaji, Mineo Higuchi, Toru Yamamoto, Masayuki Booka, Japan

A3. **Illusory motion induced by a printed static image under flickering light environment**
Tomoaki Kozaki, Japan

A4. **An update on international robotic wheelchair development**
Jesse Leaman, Hung La, Bing Li, USA

A5. **Interaction of material design elements for improved human tactile comfort**
Ivana Salopek Čubrić, Goran Čubrić, Laure Maurice, Croatia/France

A6. **Application of virtual technology in the renovation of ancient architectures based on kano model: The example of Yongtai Ningyuanzhuang**
Jieru Lin, Eakachat Joneurairatana, China

A7. **Non-right-handedness as a contributor to incidents/accidents reported within the Aviation Safety Reporting System**
Ruth Propper, R. Jordan Hinson, Amelia Kinsella, USA

A8. **The innovation of computers' and humans: Perspective on healthy working conditions**
Viiu Tuulik, Piia Tint, Estonia

A9. **In-depth analysis based on the phenomenon of pedestrians entering the scene when tourists take photos: Designing interactive reminder devices**
Jiaci Xie, Menghan Li, China

A10. **Importance of cooperation among key stakeholders to ensure successful implementation of micro-credentials in maritime industry**
Ana Gundić, Dino Zupanović, Astrid Zekić, Croatia

A11. **Application of long short-term memory (LSTM) autoencoder with density-based spatial clustering of applications with noise (DBSCAN) on anomaly detection**
Chauchen Torng, Hehe Peng, Taiwan

A12. **Light-based external Human-Machine Interfaces: The effect of animation**
Gyuhee Park, Yu Hwa Hong, Suhwan Jung, Yong Gu Ji, South Korea

A13. **Social distance, action and emotion: Designing augmented reality avatars in virtual socialising world**
Jiawei Shen, Wei Cui, China

A14. **Deodorizing effects of deodorant face masks based on brain activity**
Chiyomi Mizutani, Japan

A15. **Exploring user preferences regarding facial interface expressions of service robots across multiple age groups: A case study of the Kebbi Air robot**
Chao Yang Yang, Chun-ting Wu, Yi Chi Fu, Hsu-hsu Lai, Taiwan

A16. **Equilateral Active Learning (EAL): A novel framework for predicting autism spectrum disorder based on active fuzzy federated learning**
Arman Daliri, Maryam Khoshbakhti, Mahdi Karimi Samadi, Mohammad Rahiminia, Mahdieh Zabihimayvan, Reza Sadeghi, USA

A17. **Redundant brake lights design: Impact on reaction times of the following driver**
Dongyuan Wang, Ashley Wilborn, Vanessa Miller, USA

A18. **Detecting high-risk fatigue: Tracking with alertness and physiological metric pattern**
Yongkyun Lee, Dongsoo Kim, Hyesu Park, Seunghoon Yoo, Joonghoon Ko, Jongwoo Ha, South Korea

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, WEDNESDAY, JULY 24, 2024
Time: 10:30-14:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

A19. **Factors negatively impacting a migraine friendly workplace: A hospital-based observational cohort study**
Batu Aydinlar, Eylül Bozkurt, Arda Şenel, Tuba Erdogan Soyukibar, Erkan Acar, Turkey

A20. **Enhancing usability engineering in electric orthopedic exercise devices: A study based on IEC 62366 Standard**
Seojin Hong, Jiyoung Park, Hyunsoo Lee, Kwangjun Kim, Junghwan Kim, Hyun Choi, Hyosun Kweon, South Korea

A21. **An investigation of driver's response and workload after take-over request according to the task characteristics in conditionally automated driving**
Ina Jeong, Seulgi Kim, Sangeun Jin, South Korea

A22. **Engineering creativity and well-being for work fulfillment: Meeting context model to capture multimodal aspects in creative business meetings**
Masashi Nakadaira, Taro Kanno, Satori Hachisuka, Yingting Chen, Yuta Yoshino, Shuhei Watanabe, Japan

A23. **Engineering creativity and well-being for work fulfillment: Critical decision method for eliciting creative meeting skills**
Toshiki Aoki, Yunjie Wang, Taro Kanno, Satori Hachisuka, Yingting Chen, Yuta Yoshino, Shuhei Watanabe, Japan

A24. **Process for developing work related musculoskeletal disorder (WRMSD) management program framework for an acute tertiary hospital**
Han Seng Yeo, Wei Xiang Er, Singapore

A25. **Regulatory positions on human factors engineering for beyond-design-basis events in the construction of nuclear power plant of Korea**
Dhonghoon Lee, South Korea

A26. **Fractal gait dynamics in a speed-controlled treadmill regardless of control types**
Jin-seung Choi, Mi-hyun Choi, South Korea

A27. **Psychophysiological markers and individual variability: Advancing cognitive state and performance predictions through machine learning**
Allison Bayro, Noelle Brown, Shannon Mcgarry, Joseph Coyne, Kaylin Strong, Mikaela Aiken, Nathan Herdener, Rebecca Nesmith, USA

A28. **Augmented reality applications for inclusive culture and autistic people**
Armand Manukyan, Laurent Dupont, Antoine Pollet, France

POSTER/DEMONSTRATION SESSIONS, THURSDAY, JULY 25, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

B1. **Feasibility of integrating electromyography and computer vision for occupational safety during tractor ingress and egress**
Bethany R. Lowndes, Ana Laura Pineda-Gutierrez, Santosh Pitla, Salem Rumuri Nyacyesa, Ka-Chun Siu, Aaron Yoder, USA

B2. **Influence of passive exoskeletons on lumbar loads during a static trunk bending task specific to the aeronautics industry**
Thomas Albouy, Guillaume Mornieux, Estelle Chin, Mohsen Zare, France

B3. **Experiences and changes in using the chatbot during the leading of group psychotherapy sessions**
Pao-ling Yeh, Taiwan

POSTER/DEMONSTRATION SESSIONS, THURSDAY, JULY 25, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

B4. **A human factors study on the interface structure design of AR-HUD for small vessel**
Seunghun Yoo, Hahyun Kang, Chanjong Kim, Junhong Park, Ken Nah, South Korea

B5. **A structured approach to Clinical Pathway Mapping (CPM): A case study of a digital, medical, musical device for asthmatic children**
Hannah Kettley-Iinsell, Massimo Micocci, UK

B6. **Delayed recognition of typing errors due to decreased concentration**
Kinya Fujita, Nobuhito Hidaka, Takeshi Hayashi, Ryosuke Saeki, Japan

B7. **The influence of visual and spatial cognitive tasks on driver takeover performance in conditional automated driving**
Yang-kun Ou, Li-chieh Huang, Wei-ru Chen, Taiwan

B8. **Ergonomic support for manual assembly through data-based assistance systems - challenges and solution ideas considering the legal framework conditions**
Katharina Müller-Eppendorfer, Katrin Meusinger, Germany

B9. **Young adults' knowledge of contraception**
Paula Nelas, Claudia Chaves, Eduardo Santos, Portugal

B10. **Center for Crisis Management and Collaboration – NORDLAB: Utilization of emergency preparedness exercises in research and education in the Arctic**
Rune Elvegard, Natalia Andreassen, James Badu, Salman Nazir, Norway

B11. **Interaction concepts for delivery robots: Exploring evaluation criteria and design via two user-centered approaches**
Vivian Lotz, Eva-Maria Schomakers, Chantal Lidynia, Martina Ziefle, Germany

B12. **Analysing the impact of listening to music among pedestrians while crossing the road**
Kudurupaka Vamshi Krishna, Pushpa Choudhary, India

B13. **How the interface of self-driving cars influences the road-crossing behavior and subjective evaluation of pedestrians of different ages**
Yung-ching Liu, Yu-jie Chen, Taiwan

B14. **Use of smartphones in construction projects: Proposal for a worker monitoring system to avoid safety risks**
Antonio López Arquillos, María Del Carmen Rey Merchán, Juan Antonio Fernández Madrigal, Jesús Manuel Gómez De Gabriel, Spain

B15. **Muse Alpha: AI-based preliminary diagnosis for cognitive thought patterns**
Hyeseong Park, Myung Won Raymond Jung, Minji Kim, Jihye Kim, South Korea

B16. **Optimizing contract flow: A simulation-based approach to efficiency Improvement**
Robert Waszkowski, Tadeusz Nowicki, Poland

B17. **New paradigm of eXtended reality, breaking digital and physical barrier: From lab to world to deployment of personalized products and services for all**
Jose Laparra Hernández, José Manuel Rojas, Víctor De Nalda-tárrega, Ricardo Bayona Salvador, Consuelo Latorre Sánchez, Adrian Morales Casas, Luis Sánchez Palop, Andrés Soler, Spain

B18. **AI assisted visual periodic table of 3D forms**
Jerrod Windham, USA

B19. **Tactile estimation of surface texture based on Heightmap image features and customer attribute information**
Hiroki Nakanishi, Yuichi Kurita, Japan

B20. **Investigating the efficacy of micro-adaptive feedback to optimize learning retention and transfer**
Wendi Van Buskirk, Bradford Schroeder, Nicholas Fraulini, USA

B21. **Analysis of bus driver actions for development of automated bus passenger safety system - Bowtie Analysis**
Naohisa Hashimoto, Yanbin Wu, Masaki Masuda, Japan

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, THURSDAY, JULY 25, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

B22. **Heuristic evaluation of interactive flat panel for interactive teaching**
Yu-Hung Chien, Taiwan
B23. **How much impact does the coach-athlete relationship have on psychological satisfaction and athlete engagement?**
Akari Kamimura, Kai Yamada, Japan
B24. **Integration of the real-time psychophysiological assessment toolkit NoldusHub in a ship simulator for augmented training debriefing**
Harold Bult, Niels Van Duinen, Rutger Rozendal, Marian Bittner, Amogh Gudi, Tim Den Uyl, Lucas Noldus, Netherlands
B25. **Measuring the world: The meanings of dimensions**
Ju-Joan Wong, Taiwan
B26. **Verifying the possibility of evaluating product awareness by using the image n-back task focused on semantic memory**
Masaru Kadota, Hana Muto, Asuka Miyahara, Takayuki Yamamoto, Ryo Tanaka, Hitomi Tsuchiya, Masato Kawamoto, Japan
B27. **Concept development and implementation of a trend-based work analysis using digital tools and studies to identify load peaks**
Fabian Dietrich, Stefanie Liebl, Torsten Merkel, Gabriele Buruck, Germany
B28. **The emerging insider threat, information surveillance, and reconnaissance (ISR) vulnerability for cyber security: Cognitive warfare in the metaverse**
Valarie Yerdon, USA

POSTER/DEMONSTRATION SESSIONS, FRIDAY, JULY 26, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

C1. **Kinematic feature extraction and DTW-KNN for classifying steps in manual industrial tasks**
Chihfeng Cheng, Chiuhsiang Lin, Meng-ting Lo, Taiwan
C2. **The investigation of presence on virtual reality racing games**
Po-hung Lin, Taiwan
C3. **Associations between personality traits, PTSD Symptoms, and moral injury among emergency department providers during the COVID-19 pandemic**
Gabriela Toutin Dias, Roger Dias, USA
C4. **An interdisciplinary approach to individual-level cognitive security and risk mitigation**
Leanne Hirshfield, Chad Tossell, Nitesh Saxena, Allison Paige Anderson, Marta Ceko, Rick Niemeyer, James Crum, Sage Sherman, Amy Hays, Emily Doherty, Cara Spencer, Erin Richardson, USA
C5. **Negative effects of cyberbullying, technostress and feelings of loneliness in remote working**
Magdalena Warszewska-Makuch, Poland
C6. **Acceptability of robots depending on their style**
Nicolas Souliman, Natacha Metayer, France
C7. **Kimono design and color scheme proposal using image-generating AI technology**
Saori Kitaguchi, Shintaro Kato, Japan
C8. **Sense of safety for pedestrians and autonomous vehicles**
Yijun Lou, Yan Luo, China

POSTER/DEMONSTRATION SESSIONS, FRIDAY, JULY 26, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

C9. **Analysing Olympic sprinter dynamics**
Md Imam Hossain, David Eager, Australia

C10. **The allocation of decarbonization responsibility and institutional innovation under the value co-creation of service ecosystem**
Wenjuan Zhang, Baoming Yang, Guangbin Wang, China

C11. **Machine learning builds embedded interaction model to guide knocking behavior in 3-6 year olds**
Chengcheng Guo, Jiaci Xie, China

C12. **Team-centric innovation: The role of objectives and key results (OKRs) in managing complex and challenging projects**
Benjamin Zierock, Matthias Blatz, Kris Karcher, Germany

C13. **Attempt to evaluate pictogram complexity using fractal dimension**
Hiroaki Kosaka, Kiyonao Ikeguchi, Japan

C14. **Development of food bank data visualization using eye tracking**
Steven Jiang, Henry Ivuawuogu, Amir Milad Javadi, Mikaya Hamilton, Lauren Davis, USA

C15. **Development of educational tools for non-technical skills for front-line employees and strategies for their introduction**
Takanori Kaneko, Ken Kusukami, Hiroaki Fujishiro, Takeshi Chiba, Japan

C16. **Heart rate variability as a digital biomarker of cognitive load during military en route critical care simulations**
Ryan Harari, Benjamin Easter, Roger Dias, Steven Yule, Jonathan Louis, Elizabeth Mannsalinas, Vikhyat Berbata, William Davis, USA

C17. **Using virtual reality to enhance behavioral staff training for interacting with aggressive psychiatric patients**
Nancy Daraiseh, Aaron Vaughn, Ming Tang, Mikhail Nikolaenko, Madeline Aeschbury, Alycia Bachtel, Camryn Backman, Chunyan Liu, Maurizio Macaluso, USA

C18. **A comparative case study of post-industrial regeneration project through digital footprint**
Xiaochun Zhan, Fang Bin Guo, UK

C19. **Designing of the lower-limb wearable exoskeleton device for elderly agricultural workers**
Yong-Ku Kong, Hyunji Keum, Son Seungjae, Dokyeong Lee, Yang Hyunseok, Dae Min Kim, Hyunho Shim, South Korea

C20. **A comparative analysis of AR controller tracking technologies**
Mohammad Jeelani, Jose Muniz, Shaun Marsh, USA

C21. **How human factors and user experience can improve socio-health care products and service development**
Adrian Morales Casas, Amparo López Vicente, Raquel Marzo Roselló, Carlos Atienza, Jose Laparra Hernández, Spain

C22. **Analysis of the influence of HUD brightness adjustment on pilots' information perception**
Guoqiang Sun, China

C23. **Transforming multi-layered plastic waste into upcycled functional art: A sustainable approach to plastic recycling**
Sarthak Sharadh Patel, Dhananjay Kumar, Samrat Dev, India

C24. **Human digital twin instructors in the metaverse for a lifetime of on-time training using individualized measures: A future perspective**
Valarie Yerdon, USA

C25. **Seeing around the corners: How cooperative intelligent transportation systems (C-ITS) can help prevent cyclist collisions**
Mateo Jukic, Peter Moertl, Austria

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, FRIDAY, JULY 26, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

C26. **Identifying challenges and opportunities in agri-entrepreneurial intention using the Theory of Reasoned Action (TRA) Model**
Suraj Kumar, Bhanvi Suryavanshi, Mamoni Banerjee, India

C27. **Using the Concealed Information Test to measure positive emotions: An experimental study on consumers' experience sharing ice cream**
Hana Muto, Asuka Miyahara, Rieko Fuji, Takayuki Yamamoto, Ryo Tanaka, Hitomi Tsuchiya, Masato Kawamoto, Ippeita Dan, Japan

C28. **How technology enablers, gender and age impact funding intentions to commercial and philanthropic crowdfunding projects**
Virginie Gagné, Sandrine Prom Tep, Manon Arcand, Canada

POSTER/DEMONSTRATION SESSIONS, SATURDAY, JULY 27, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

D1. **Effects of exertion angles and exertion heights on maximum two-handed pulling strength in Taiwanese male labors**
Hsin-hung Tu, Taiwan

D2. **Robotics and autonomous systems in public realm: an exploration of human, ethical and societal issues in emergency first response operations**
Gabriella Duca, Raffaella Russo, Vittorio Sangermano, Italy

D3. **Combining AR and ball-shape input interface to control remotely a robot-arm**
Harutaka Abe, Víctor Blanco Bataller, Henrik Terävä, Mika Luimula, Guillaume Lopez, Japan

D4. **Exploring intraoperative cognitive biases in cardiac surgery teams**
Roger Dias, Steven Yule, Mahdi Ebnali, Marco Zenati, USA

D5. **Differences of local and whole body with respect to thermal comfort sensation between elderly and young females**
Takako Fukazawa, Japan

D6. **Comparison of alpha waves and SSVEP based on ear-EEG using conductive paste and gel sheet**
Sodai Kondo, Hisaya Tanaka, Japan

D7. **RED 5R: A pilot factory to demonstrate interactive monitoring and cognitive support of manual processes in the aerospace industry**
José Ramón Vilanova, Rafael Luque, Paloma Vega, Eduardo Ferrera, Spain

D8. **Vector Result Rate (VRR): A novel method for fraud detection in mobile payment systems**
Arman Daliri, Mahdieh Zabihimayvan, Kiarash Saleh, USA

D9. **Understanding Chinese adults' attitudes towards IoT home care technologies**
Runting Zhong, Saihong Han, Mengyao Ma, Yunlong Xu, Meiyu Fan, Yixuan Chang, China

D10. **Exploring new business workers' factors related to work engagement**
Shoi Taki, Ippeita Dan, Yuko Minami, Toru Handa, Yasushi Kyutoku, Japan

D11. **Subjective feelings of physical and psychological workload among nurses in Poland – case study**
Magdalena Młynarczyk, Joanna Orysiak, Magdalena Warszewska-Makuch, Poland

D12. **Influence of a soft-back exoskeleton on joint and neuromuscular stress during a simulated manual order picking task.**
Clément Thevenot, Arthur Favennec, Xavier Pierre, Guillaume Mornieux, France

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, SATURDAY, JULY 27, 2024
Time: 8:30-16:00
Onsite Room: Foyer - Lobby Level
Virtual Room: AHFE Posters

D13. **Human factors design study for home beer-brewing machine in residential space: Focused on In-depth Interviews of South Korean MZ Generation**
Min Hye Kim, Min Ju Kim, Joonmee Choi, Ken Nah, South Korea

D14. **The induction of social stress in virtual reality simulations**
Celia Kessassi, Cédric Dumas, Caroline Cao, Mathieu Chollet, France

D15. **Dual head-up displays for automobiles**
Xin Fang, Yukiyo Kuriygawa, Yosuke Ohashi, Satomi Terashima, Japan

D16. **Design optimization for 'real-time non-invasive hemodynamic monitoring system' with patch-type ultrasound based on human factors engineering**
Seunghee Kim, Hyeonkyeong Choi, Yourim Kim, Bora Kim, Wonseuk Jang, South Korea

D17. **Influence of ground inclination on handle push and pull force production of the upper limb**
Matthieu Abautret, France

D18. **Cross-border Integration and Innovation of traditional Chinese exercises and digital media technology: The case of Baduanjin**
Xingyi Wen, Wei Cui, Huiyan Chen, Fan Liu, YuLin Shao, Fang You, China

D19. **Ergonomic evaluation criteria of agricultural equipment: Focusing on the pruning shears**
Seung-min Mo, South Korea

D20. **Using Fitts's Law and the consequences of fatigue to compare computer interaction styles of mouse and touch**
Sylvia Guillory, Anna Jane Brown, Chad Peltier, Jeffrey Bolkhovsky, USA

D21. **Psychological factors leading to reuse intention of car sharing and rental services explained by the extended Mehrabian-Russell model**
Itsuki Nakato, Akihisa Otsuka, Atsushi Fukatsu, Hitomi Hattori, Ippeita Dan, Yasushi Kyutoku, Japan

D22. **Improving debriefing in aviation through a tool integrating modular design and objective in-flight data: A human-centered design approach**
Darlann Bertolone, Maria Hagl, Germany

D23. **Fatigue and stress levels in train drivers on routes with short and long sleep break**
Ryo Nakamura, Munendo Fujimichi, Japan

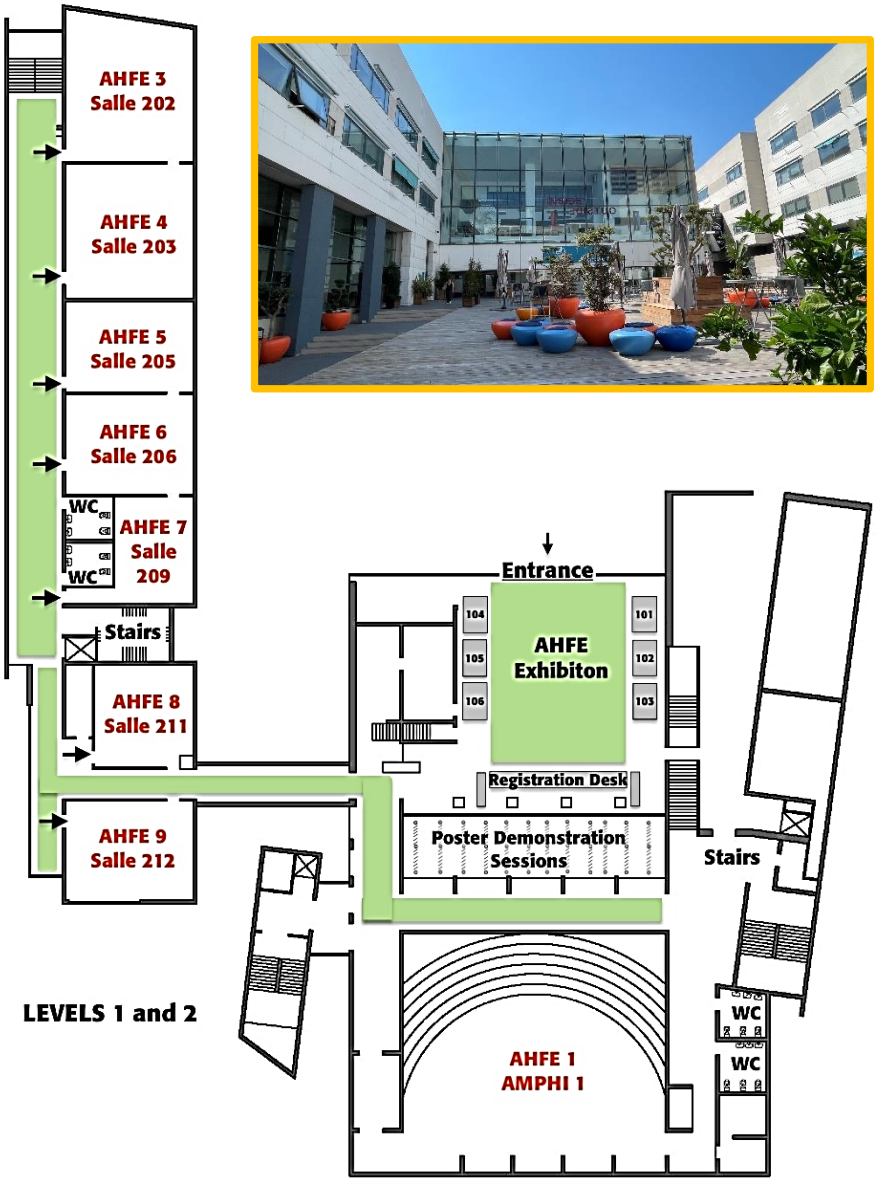
D24. **Virtual versus reality: Comparing cognitive load and situation awareness of engineering teams undertaking tasks in CAVEs and reality**
Alexander Pogmore, UK

D25. **Virtual training for the maintenance of machine tools**
Robert Eckardt, Leif Goldhahn, Germany

D26. **Entrepreneurship and innovation in the medico-social sector: The co-development of Method software tool to support the disabled**
Armand Manukyan, Idriss Issop, France

Conference Layout

AHFE 2024 International Conference
Location: Université Nice Sophia-Antipolis - St Jean d'Angély
Address: 24 Avenue des Diables Bleus, 06300 Nice, France



Conference Layout

AHFE 2024 International Conference
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