



2023
AHFE
International

14th International Conference on
Applied Human Factors and
Ergonomics (AHFE 2023) and the
Affiliated Conferences

Final Program

20-24 July, 2023

**San Francisco Marriott Marquis
San Francisco, California, USA**

WWW.AHFE.ORG

Table of Contents

OPENING PLENARY SESSION AND
KEYNOTE ADDRESS 1

TUTORIALS 2

CONFERENCE AT A GLANCE

TRACK ACRONYMS 3

SESSIONS OVERVIEW 4

CONFERENCE EXHIBITION

BOOTH	COMPANY
101	
102	ERGONEERS FROM SCIENCE TO INNOVATION
103	 SMART EYE®
104	 HISI Journal

DETAILED TECHNICAL PROGRAM

SATURDAY, JULY 22

8:00-9:30 10

10:00-12:00 13

13:00 -15:00 17

15:30-17:00 21

17:30-18:45 25

SUNDAY, JULY 23

8:00-9:30 28

10:00-12:00 32

13:00 -15:00 36

15:30-17:00 40

17:30-18:45 44

MONDAY, JULY 24

8:00-9:30 48

10:00-12:00 52

13:00 -15:00 56

15:30-17:00 59

17:30-18:45 63

POSTER/DEMONSTRATION SESSIONS

SATURDAY, JULY 22

Group A 9:00-17:00 66

Sunday, July 23

Group B 9:00-17:00 67

MONDAY, JULY 24

Group C 9:00-17:00 69

HOTEL LAYOUT 71

CONFERENCE ORGANIZATION 72

AFFILIATED CONFERENCES AND TRACKS 72

Opening Plenary Session and Keynote Address

17:00-18:30 (PDT), Friday July 21, 2023
Room: Golden Gate Ballroom (B2 Level)

INTRODUCTORY REMARKS

NEUROERGONOMICS: MONITORING THE BRAIN AT WORK IN THE WILD!

Prof. Frédéric Dehais

University of Toulouse, France



Since the early 2000's, Neuroergonomics, the intersection of Neuroscience, Cognitive Engineering, Artificial Intelligence and Human Factors, aims at investigating the cerebral mechanisms in complex real-life situation.

This discipline is defined by his founder, Prof. Raja Parasuraman, as the "scientific study of the brain mechanisms and psychological and physical functions of humans in relation to technology, work and environments". Neuroergonomics constitutes a paradigm shift away from the reductionist approach to neuroscience and from the lack of objective measures from field studies as conducted by human factors practitioners. Indeed, this discipline postulates that in order to investigate complex real-world behavior it is necessary to understand the processes within the context of the underlying interacting brain networks rather than under reduced isolated conditions that only occur in the laboratory. To that end, Neuroergonomics research takes advantage of recent technological development in the field of mobile brain imaging to measure the brain out of the lab in a variety of situations such as walking, sport activity, flying, driving cars or operating robots. The objective of this presentation is to show that Neuroergonomics is relevant to better understand failure of attention, decision making, social and assessing human performance. We will discuss the challenges of implementing this approach in the real world as well as future directions such as the implementation neuroadaptive technology for more efficient and safer operations.

BIO: Frédéric Dehais received a PhD in Cognitive Science at Onera - Toulouse (France) in 2004 and obtained his HDR (Habilitation à Diriger les Recherches) in 2012. He is a full professor at ISAE-SUPAERO, University of Toulouse, since 2012 and holder of the 20-year AXA Research Fund-chair "Neuroergonomics", a rare credit attributed to less than 40 researchers in the world and holder of the ANITI Chair "Neuroadaptive technology" (ANITI, Toulouse). His research deals with the understanding of the neural correlates of human error in real life situation and the implementation of neuro-adaptive technology to enhance human machine-symbiosis. He is leading the Neuroergonomics Center composed of 25 members with an in-terdisciplinary expertise in Neuroscience, Signal Processing, Computer Science, and Human Factors. His team has developed a unique methodology from basic research using fMRI in well controlled environments to experiments conducted out of the lab using cutting edge portable brain imaging techniques. He is the co-chair of the International Neuroergonomics conference and co-chief editor of Frontiers in Neuroergonomics. He also co-founded Hinfact, a spin-off dedicated to implement monitoring technology for safer operations.

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

CONFERENCE RECEPTION/BANQUET: FRIDAY JULY 21 • 19:00-22:00 (PDT)
GOLDEN GATE BALLROOM (B2 LEVEL)
(BADGE REQUIRED)

Conference program schedule is listed in Pacific Daylight Time (PDT) - San Francisco Timezone

PRE-CONFERENCE TUTORIALS

Half-day tutorials at introductory, intermediate, and advanced levels will cover the entire spectrum of the conference. Tutorials will be offered on Thursday, July 20 and Friday, July 21. Tutorials registration is required. Tutorials coffee breaks on July 20-2: Pacific Foyer (4th Level)

JULY 20, 2023

TUTORIAL GROUP A - 9:00 - 12:30 (PDT)		Room
T-1	Fundamentals in Data Visualization and Dashboard Design Presenter: Abbas Moallem, San Jose State University	AHFE 9: Pacific A
T-2	Modern Heuristic Design Evaluation: Making Heuristic Evaluation More Relevant to Modern Software Presenter: Everett McKay, UX Design Edge	AHFE 10: Pacific B
Tutorials coffee breaks on July 20-21 will be located on Pacific Foyer (4th Level).		

JULY 20, 2023

TUTORIAL GROUP B - 13:00 - 16:30 (PDT)		Room
T-4	Eye Tracking Methods and Applications Presenter: Jan Watson, Drexel University	AHFE 9: Pacific A
T-5	Effective Design Reviews: How to Give and Receive Meaningful, Actionable Design Feedback Presenter: Everett McKay, UX Design Edge	AHFE 10: Pacific B
T-6	Human Factors and Cybersecurity Presenter: Abbas Moallem, San Jose State University	AHFE 11: Pacific C

JULY 21, 2023

TUTORIAL GROUP C - 9:00 - 12:30 (PDT)		Room
T-7	Towards Data Science: Modelling Techniques in Predictive Analytics with Python Presenter: Javed Sheikh, Minhaj University Lahore	AHFE 3: Foothill C
T-8	Cognitive Neuroscience for the Human Factors Practitioner and Fundamentals of Brain Imaging Presenter: Adrian Curtin, Drexel University	AHFE 4: Foothill D
T-9	Next Generation Simulation and Training using Virtual Reality and Augmented Reality Presenter: Mahdi Ebnali, Harvard University	AHFE 5: Foothill E
T-10	Remote Measurement of Vital Signs Using AI for Health Monitoring and Cognition Presenters: Abhijit Sarkar, Virginia Tech Transportation Lynn Abbott, Virginia Tech	AHFE 6: Foothill F

Conference Tracks

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

Conference at a Glance

Conference program schedule is listed in Pacific Daylight Time (PDT) - San Francisco Timezone

#	SESSION TITLE	TRACK	ROOM
SATURDAY, JULY 22, 2023 - SESSION TIME: 8:00-9:30 (PAGES 10 - 13)			
1	Plenary: Neuroergonomics & Cognitive Engineering	CN	AHFE 1: Foothill A
2	Sensory Engineering and Emotion I	APD	AHFE 2: Foothill B
3	Human Factors for Apparel and Textile Engineering I	HFATE	AHFE 3: Foothill C
4	Biomimetics and Design	ED	AHFE 4: Foothill D
5	Human-Centered Ergonomics and Service Design	ED	AHFE 5: Foothill E
6	Comfort and Interior Considerations in Vehicles I	RR	AHFE 6: Foothill F
7	Usability and User Experience Applications I	UUE	AHFE 7: Foothill G1
8	Perception, Behavior and Cognitive Workload	SYSI	AHFE 8: Foothill G2
9	Product Development Methodologies	KE	AHFE 9: Pacific A
10	Informatics Innovation and Engineering Application	HIBEA	AHFE 10: Pacific B
11	Human-Centered Studies in the Metaverse	HCMDE	AHFE 11: Pacific C
12	Product Design + Human Factors I	IPID	AHFE 12: Pacific D
13	Assistive Technology and User Experience	HFAAT	AHFE 13: Pacific E
14	HSSE Welcome	HSSE	AHFE 14: Pacific F
REFRESHMENTS: 9:30 - 10:00 • ROOM: SoMa (2ND LEVEL)			
SATURDAY, JULY 22, 2023 - SESSION TIME: 10:00-12:00 (PAGES 13- 17)			
16	Cross Boundary of Visual Communication Design in the New Era	ED	AHFE 1: Foothill A
17	Artificial Intelligence Symbiosis	EHMD	AHFE 2: Foothill B
18	Safety Culture and Resilience	SMHF	AHFE 3: Foothill C
19	Vehicle Automation I	RR	AHFE 4: Foothill D
20	Ergonomics in Architecture	SUPI	AHFE 5: Foothill E
21	Interface Design	UUE	AHFE 6: Foothill F
22	System Design and Usability	SYSI	AHFE 7: Foothill G1
23	Human Factors in Contemporary Management Systems	APMPC	AHFE 8: Foothill G2
24	Design and Innovation	HFAS	AHFE 9: Pacific A
25	Advancing the Science of Human-Agent Teaming	HFSIM	AHFE 10: Pacific B
26	The Instrumented User: Using AR, VR, and Wearable Technologies for Enhanced Assessment	HFWT	AHFE 11: Pacific C
27	Human Reliability Analysis	HERRP	AHFE 12: Pacific D
28	Artificial Intelligence: Utilization and Innovation	AISC	AHFE 13: Pacific E
29	Designing Future Service Business: How Data and AI Drive Service Innovation	HSSE	AHFE 14: Pacific F
12:00 - 13:00 • LUNCH AT THE RESTAURANT OF YOUR CHOICE			
SATURDAY, JULY 22, 2023 - SESSION TIME: 13:00 -15:00 (PAGES 17 - 21)			
31	Cross-Cultural Decision Making	CCDM	AHFE 1: Foothill A
32	Systemic Structural Activity Theory	CN	AHFE 2: Foothill B
33	Risk Assessment and Quality Improvement	EHMD	AHFE 3: Foothill C
34	Ethical and Psychological Human Factors in Industrial Robotics I	MFG	AHFE 4: Foothill D
35	Usability Evaluation I	UUE	AHFE 5: Foothill E
36	Human Factors from the Innovative Agonology Perspective	SIPOR	AHFE 6: Foothill F
37	Social Inclusion and Sustainability Through Product Design	DI	AHFE 7: Foothill G1
38	Human Factors in Software and Systems Engineering I	HFSSE	AHFE 8: Foothill G2
39	Human Factors in Game Design	HFGD	AHFE 9: Pacific A

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
SATURDAY, JULY 22, 2023 - SESSION TIME: 13:00 -15:00 (PAGES 17 - 21)			
40	Panel Discussion: Human Factors Considerations in Applied Simulation Environments in Naval Aviation Training	HFSIM	AHFE 10: Pacific B
41	Product Design + New Horizon	IPID	AHFE 11: Pacific C
42	Design, Co-Creation and Innovation	CIE	AHFE 12: Pacific D
43	Data Dependency I	HFRDUS	AHFE 13: Pacific E
44	Digital Transformation and The New Deal of Service System Political Governmentality	HSSE	AHFE 14: Pacific F
REFRESHMENTS: 15:00-15:30 • ROOM: SoMA (2ND LEVEL)			
SATURDAY, JULY 22, 2023 - SESSION TIME: 15:30-17:00 (PAGES 21 - 24)			
46	DHMAO in Applied Anthropometry, Performance and Accommodation	DHMAO	AHFE 1: Foothill A
47	Design-Driven Innovation in the Era of Artificial Intelligence	ED	AHFE 2: Foothill B
48	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies I	HSSE	AHFE 3: Foothill C
49	Current Advances in Maritime Education and Training	MAR	AHFE 4: Foothill D
50	Public Transportation and Safety I	RR	AHFE 5: Foothill E
51	Innovation Ecosystem in Co-Evolution of Business Ecosystem	HFBMS	AHFE 6: Foothill F
52	Cyber Attack Detection and Management	CYBER	AHFE 7: Foothill G1
53	Competency Management in Education	TELS	AHFE 8: Foothill G2
54	Design for Inclusion in Learning and Digital Experiences	DI	AHFE 9: Pacific A
55	Cognitive Computing for Healthcare and Wellbeing	CCIoT	AHFE 10: Pacific B
56	Sustainable Housing Development	SCON	AHFE 11: Pacific C
57	Creative Technology & Digital Media	CTDM	AHFE 12: Pacific D
58	Design, Communication and Human Dynamics	HDCS	AHFE 13: Pacific E
59	Urban Air Mobility	AVI	AHFE 14: Pacific F
REFRESHMENTS: 17:00 - 17:30 • ROOM: SoMA (2ND LEVEL)			
SATURDAY, JULY 22, 2023 - SESSION TIME: 17:30-18:45 (PAGES 25 - 28)			
61	Design Method and Transdisciplinary Practices Between Virtual and Reality	ED	AHFE 1: Foothill A
62	Design Thinking to Create a Happier Life I	APD	AHFE 2: Foothill B
63	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies II	HSSE	AHFE 3: Foothill C
64	Ergonomic Risk Assessment Methods and Techniques I	PEHF	AHFE 4: Foothill D
65	Physical Ergonomics and Work-Related Musculoskeletal Disorders I	SOE	AHFE 5: Foothill E
66	Creativity Progression Innovation and Team Cohesion	HFBMS	AHFE 6: Foothill F
67	Cybersecurity, Privacy, Trust and Awareness	CYBER	AHFE 7: Foothill G1
68	Optimizing Learning and Education	TELS	AHFE 8: Foothill G2
69	Applications in Robots, Drones and Unmanned Systems I	HFRDUS	AHFE 9: Pacific A
70	Industrial Cognitive Ergonomics and Engineering Psychology I	ICEEP	AHFE 10: Pacific B
71	Communication of Design I	HFCD	AHFE 11: Pacific C
72	Design, Social Innovation and Sustainable Social Change	HDCS	AHFE 12: Pacific D
73	Human-Centered Aerospace Systems and Sustainability Applications I	HCASSA	AHFE 13: Pacific E

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#	SESSION TITLE	TRACK	ROOM
SUNDAY, JULY 23, 2023 - SESSION TIME: 8:00-9:30 (PAGES 28 - 31)			
76	Emotional Design and UX	ED	AHFE 1: Foothill A
77	Sensory Engineering and Emotion II	APD	AHFE 2: Foothill B
78	Human Factors in Aviation I	AVI	AHFE 3: Foothill C
79	Panel: Eye-Tracking as Instructor Support in Professional Education and Training – Findings from a Cooperation Between Research and Practice	MAR	AHFE 4: Foothill D
80	Communication of Design II	HFCD	AHFE 5: Foothill E
81	Public Transportation and Safety II	RR	AHFE 6: Foothill F
82	Usability Evaluation II	UUE	AHFE 7: Foothill G1
83	Simulator Training and Assessment	TELS	AHFE 8: Foothill G2
84	Applied Psychology and Ergonomics on Kansei	KE	AHFE 9: Pacific A
85	Production and Logistics Management Systems	APMPC	AHFE 10: Pacific B
86	Management Intelligence Services – How to Support Managers in Challenging Tasks	HSSE	AHFE 11: Pacific C
87	Product Design + Sustainability	IPID	AHFE 12: Pacific D
88	Human Factors in Artificial Intelligence and Social Computing I	AISC	AHFE 13: Pacific E
89	Human Factors for Apparel and Textile Engineering II	HFATE	AHFE 14: Pacific F
REFRESHMENTS: 9:30 - 10:00 • ROOM: SoMA (2ND LEVEL)			
SUNDAY, JULY 23, 2023 - SESSION TIME: 10:00-12:00 (PAGES 32 - 35)			
91	Neurotechnology for Human Machine Symbiosis	CN	AHFE 1: Foothill A
92	Human-Centered Ergonomics Research I	ED	AHFE 2: Foothill B
93	Product Design	ED	AHFE 3: Foothill C
94	Safety and Risk Management	SMHF	AHFE 4: Foothill D
95	Vehicle Automation II	RR	AHFE 5: Foothill E
96	Human Factors in Virtual Environments II	HFGD	AHFE 6: Foothill F
97	Design Strategy and User Experience I	UUE	AHFE 7: Foothill G1
98	Human Factors in Energy	ENERGY	AHFE 8: Foothill G2
99	Human Factors in Learning	TELS	AHFE 9: Pacific A
100	Human Factors in Software and Systems Engineering II	HFSSE	AHFE 10: Pacific B
101	Fidelity, Complexity, Scale, and Scope: Understanding Nuclear Control Room Human Factors Across Different Levels of Examination	HFSIM	AHFE 11: Pacific C
102	Walking the Tightrope: Balancing Benefits for all Stakeholders in the Digital Age	HSSE	AHFE 12: Pacific D
103	Human Error	HERRP	AHFE 13: Pacific E
104	Digital Transformation	CIE	AHFE 14: Pacific F
12:00 - 13:00 • LUNCH AT THE RESTAURANT OF YOUR CHOICE			
SUNDAY, JULY 23, 2023 - SESSION TIME: 13:00 -15:00 (PAGES 36 - 40)			
106	Digital Human Modeling and Applied Optimization	DHMAO	AHFE 1: Foothill A
107	Design Thinking to Create a Happier Life II	APD	AHFE 2: Foothill B
108	Human-Centered Ergonomics Research II	ED	AHFE 3: Foothill C
109	Innovations in Medical Devices	EHMD	AHFE 4: Foothill D
110	Social Aspects of Business Management and Efficiency	SOE	AHFE 5: Foothill E
111	Design Strategy and User Experience II	UUE	AHFE 6: Foothill F
112	Health and Healthcare	SYSI	AHFE 7: Foothill G1
113	Designing for Inclusion in the Cultural Heritage	DI	AHFE 8: Foothill G2

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
SUNDAY, JULY 23, 2023 - SESSION TIME: 13:00 -15:00 (PAGES 36 - 40)			
114	Human Factors in Virtual Environments I	HFGD	AHFE 9: Pacific A
115	Designing Future Service Business: How to Shape Future Value Creation	HSSE	AHFE 10: Pacific B
116	Concepts and Applications for the Metaverse	HCMDE	AHFE 11: Pacific C
117	Human Factors in Engineering and Health	HIBEA	AHFE 12: Pacific D
118	Innovation During Start-Up and Entrepreneurship	CIE	AHFE 13: Pacific E
119	Methodology and Technology for Mental and Emotional States Assessment During Naturalistic and Human-Machine Interactions	CN	AHFE 14: Pacific F
REFRESHMENTS: 15:00-15:30 • ROOM: SoMA (2ND LEVEL)			
SUNDAY, JULY 23, 2023 - SESSION TIME: 15:30-17:00 (PAGES 40 - 44)			
121	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies III	HSSE	AHFE 1: Foothill A
122	Educational Design	ED	AHFE 2: Foothill B
123	Smart Products and Services	ED	AHFE 3: Foothill C
124	Health Training and Education	EHMD	AHFE 4: Foothill D
125	Ergonomic Risk Assessment Methods and Techniques II	PEHF	AHFE 5: Foothill E
126	Trust in Vehicle Automation	RR	AHFE 6: Foothill F
127	Ergonomics in Urban Planning	SUPI	AHFE 7: Foothill G1
128	Building Readiness for Digital Service Transformation Ecosystem	HFBMS	AHFE 8: Foothill G2
129	Management in Education	TELS	AHFE 9: Pacific A
130	Wearable Multimodal Sensing and Decoding	CN	AHFE 10: Pacific B
131	Human Performance and Special Needs	HFAS	AHFE 11: Pacific C
132	Human Factors in Artificial Intelligence and Social Computing II	AISC	AHFE 12: Pacific D
133	Human Resources Management Practices and Smart City Management	SCON	AHFE 13: Pacific E
134	Human Factors for Apparel and Textile Engineering III	HFATE	AHFE 14: Pacific F
REFRESHMENTS: 17:00 - 17:30 • ROOM: SoMA (2ND LEVEL)			
SUNDAY, JULY 23, 2023 - SESSION TIME: 17:30-18:45 (PAGES 44 - 48)			
136	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies IV	HSSE	AHFE 1: Foothill A
137	Automotive Design	ED	AHFE 2: Foothill B
138	Patient Safety	EHMD	AHFE 3: Foothill C
139	Agile Manufacturing Systems	MFG	AHFE 4: Foothill D
140	Driver Performance, Behavior and Physiology I	RR	AHFE 5: Foothill E
141	Human Factors in Transports	SYSI	AHFE 6: Foothill F
142	Human and Organizational Factors in Data-Driven Digital Transformation	HFBMS	AHFE 7: Foothill G1
143	Product Design + Human Factors II	IPID	AHFE 8: Foothill G2
144	Applications in Robots, Drones and Unmanned Systems II	HFRDUS	AHFE 9: Pacific A
145	Human Factors in Management and Leadership I	HFML	AHFE 10: Pacific B
146	Simulations Based Training Assessment Methodologies	HFSIM	AHFE 11: Pacific C
147	The Instrumented User: Enhancing User Performance with AR, VR, and Wearable Technologies	HFWT	AHFE 12: Pacific D
148	HSSE Social Event	HSSE	AHFE 13: Pacific E
149	Design and Human Factors for Sustainable Development	HDCS	AHFE 14: Pacific F

Conference at a Glance

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#	SESSION TITLE	TRACK	ROOM
MONDAY, JULY 24, 2023 - SESSION TIME: 8:00-9:30 (PAGES 48 - 51)			
151	Ergonomics in Design and Driving Experience	ED	AHFE 1: Foothill A
152	Human Factors in Software and Systems Engineering III	HFSSE	AHFE 2: Foothill B
153	Neuroergonomics for Understanding and Enhancing Performance in Operational Environments	CN	AHFE 3: Foothill C
154	Industrial Cognitive Ergonomics and Engineering Psychology II	ICEEP	AHFE 4: Foothill D
155	Product Design and Ergonomic Evaluation	PEHF	AHFE 5: Foothill E
156	Comfort and Interior Considerations in Vehicles II	RR	AHFE 6: Foothill F
157	Human Factors, Business Management and Efficiency	HFBMS	AHFE 7: Foothill G1
158	Human Factors in Management and Leadership II	HFML	AHFE 8: Foothill G2
159	Kansei on Services and Entertainments	KE	AHFE 9: Pacific A
160	Modeling Approaches in Social Sciences	HFSIM	AHFE 10: Pacific B
161	Human Factors in Aviation II	AVI	AHFE 11: Pacific C
162	Construction Innovation and Digitalization	SCON	AHFE 12: Pacific D
163	Accessibility Within Human-Centered Environments	HFAAT	AHFE 13: Pacific E
164	Emerging Research Innovations in Service Design, Ethics, User Experience, and Design Research Applied to Health Care, Industry, Business, and Education	HSSE	AHFE 14: Pacific F
REFRESHMENTS: 9:30 - 10:00 • ROOM: SoMa (2ND LEVEL)			
MONDAY, JULY 24, 2023 - SESSION TIME: 10:00-12:00 (PAGES 52 - 55)			
166	Exploring Collaborations Using Extended Reality (XR), Robotics, and Artificial Intelligence in Service Design and User Experience (AIXD)	HSSE	AHFE 1: Foothill A
167	Virtual Environments	ED	AHFE 2: Foothill B
168	Technological Innovations in Healthcare	EHMD	AHFE 3: Foothill C
169	Physical Workload Assessment and Biomechanical Analysis	PEHF	AHFE 4: Foothill D
170	H-Workload	CN	AHFE 5: Foothill E
171	Human Factors on Security and Crises Management	SYSI	AHFE 6: Foothill F
172	Usability and User Experience Applications II	UUE	AHFE 7: Foothill G1
173	Design for Inclusion in the Living Environment	DI	AHFE 8: Foothill G2
174	Design Thinking to Create a Happier Life III	APD	AHFE 9: Pacific A
175	Quality Improvement and Risk Management in Manufacturing, Automotive and Defense Industry	APMPC	AHFE 10: Pacific B
176	Human Factors and Automation: Improving the Development of and Reliance on both Static and Machine Learning Models	HFSIM	AHFE 11: Pacific C
177	The Instrumented User: Usability of AR, VR, and Wearable Technologies	HFWT	AHFE 12: Pacific D
178	Usability and User Experience Applications III	UUE	AHFE 13: Pacific E
179	Holistic Design for a Sustainable and Beautiful Changing of Cities and Communities	HDCS	AHFE 14: Pacific F
12:00 - 13:00 • LUNCH AT THE RESTAURANT OF YOUR CHOICE			
MONDAY, JULY 24, 2023 - SESSION TIME: 13:00 -15:00 (PAGES 56 - 59)			
181	Applying Cognitive Principles to Design of Interfaces and Behavior Analysis	CN	AHFE 1: Foothill A
183	Human Reliability and Technology	EHMD	AHFE 3: Foothill C
184	Design of Manufacturing Systems and Processes	MFG	AHFE 4: Foothill D
185	Usability and User Experience Applications IV	UUE	AHFE 5: Foothill E
186	Data Dependency II	HFRDUS	AHFE 6: Foothill F
187	Modeling, Simulation and Mixed Reality	SYSI	AHFE 7: Foothill G1

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#	SESSION TITLE	TRACK	ROOM
MONDAY, JULY 24, 2023 - SESSION TIME: 13:00 -15:00 (PAGES 56 - 59)			
188	Human Factors in Education, Technostress and Fun in Learning	HFBMS	AHFE 8: Foothill G2
189	Human Factors in Cyberattacks, Training and Education	CYBER	AHFE 9: Pacific A
190	Emerging Needs for Reliability and Inclusivity	HFAS	AHFE 10: Pacific B
191	Simulation-Based Human Factors Research: Issues and Findings	HFSIM	AHFE 11: Pacific C
192	Product Design + Design Education	IPID	AHFE 12: Pacific D
193	Augmenting Capabilities for Decision Making in Service System	HSSE	AHFE 13: Pacific E
194	Human-Centered Aerospace Systems and Sustainability Applications II	HCASSA	AHFE 14: Pacific F
REFRESHMENTS: 15:00-15:30 • ROOM: SoMA (2ND LEVEL)			
MONDAY, JULY 24, 2023 - SESSION TIME: 15:30-17:00 (PAGES 59 - 62)			
196	Human Factors in Aviation and Space	AVI	AHFE 1: Foothill A
197	User Research	ED	AHFE 2: Foothill B
198	Maritime Human Factors – Novel Approaches to Understanding Human Work in Complex Operations	MAR	AHFE 3: Foothill C
199	Safety and Transportation Human Factors	SMHF	AHFE 4: Foothill D
200	Physical Ergonomics and Work-Related Musculoskeletal Disorders II	SOE	AHFE 5: Foothill E
201	Design Strategy and User Experience III	UUE	AHFE 6: Foothill F
202	Human Factors in Smart City Development	HFBMS	AHFE 7: Foothill G1
203	Ethical and Psychological Human Factors in Industrial Robotics II	MFG	AHFE 8: Foothill G2
204	Sustainable Construction and Leadership	SCON	AHFE 9: Pacific A
205	Design for Inclusion and Ageing Society	DI	AHFE 10: Pacific B
206	Product Design + New Interpretation	IPID	AHFE 11: Pacific C
207	ISSIP HSSE Best Paper Award	HSSE	AHFE 12: Pacific D
208	Additive Manufacturing, Modeling Systems and 3D Prototyping	AMMSP	AHFE 13: Pacific E
209	Education for Creativity, Design and Innovation	CIE	AHFE 14: Pacific F
REFRESHMENTS: 17:00 - 17:30 • ROOM: SoMA (2ND LEVEL)			
MONDAY, JULY 24, 2023 - SESSION TIME: 17:30-18:45 (PAGES 63 - 65)			
211	Applications in Robots, Drones and Unmanned Systems III	HFRDUS	AHFE 1: Foothill A
212	Digital Safety/Prevention	SMHF	AHFE 2: Foothill B
213	Cultural Design	ED	AHFE 3: Foothill C
214	User Interaction	ED	AHFE 4: Foothill D
215	Driver Performance, Behavior and Physiology II	RR	AHFE 5: Foothill E
216	HSSE Closing and Future Planning	HSSE	AHFE 6: Foothill F
217	Human - System Interaction Studies	SYSI	AHFE 7: Foothill G1
218	Student Education	TELS	AHFE 8: Foothill G2
219	Communication of Design III	HFCD	AHFE 9: Pacific A
220	Biomedical Design and Human Interfaces	HIBEA	AHFE 10: Pacific B
221	Influencing the Design of the Metaverse	HCMDE	AHFE 11: Pacific C
222	Applications in Cognitive Assessment and Physical Strain	CCIoT	AHFE 12: Pacific D
223	Human Factors in Artificial Intelligence and Social Computing III	AISC	AHFE 13: Pacific E

1	Plenary: Neuroergonomics & Cognitive Engineering Chair: Frédéric Dehais, France	CN
8:00-9:30 AHFE 1: FOOTHILL A	Neuroergonomics: Towards ubiquitous and continuous measurement of brain function during everyday life Hasan Ayaz, USA	
2	Sensory Engineering and Emotion I Co-Chairs: Keiichi Watanuki and Kazunori Kaede, Japan	APD
8:00-9:30 AHFE 2: FOOTHILL B	<p>Quantifying interest from facial images, and the role of videos in effective business calls Ryosuke Katsuki, Keiichi Watanuki, Suguru Mashima, Yusuke Osawa, Japan</p> <p>Evaluation of the effect of viewing paintings with different objects and methods of expression on stress Keisuke Kisu, Keiichi Watanuki, Kozawa Motohiro, Japan</p> <p>Influence of history of art learning on understanding of beauty and ugliness in painting Tomofumi Sakata, Keiichi Watanuki, Kozawa Motohiro, Japan</p> <p>Effects of field-of-view expansion using a wide-field HMD on sensibility during straight-line video viewing Tomoya Koishi, Keiichi Watanuki, Yusuke Osawa, Japan</p> <p>Biometric information-based optimization of driving seat position to promote safe driving behavior Kyonaka Baba, Kazunori Kaede, Keiichi Watanuki, Japan</p> <p>The body of sensation within the context of atmospheric painting Rui Grazina, Fernando Moreira Da Silva, Fernando Poeiras, Portugal</p>	
3	Human Factors for Apparel and Textile Engineering I Co-Chairs: Cristina Carvalho and Yutaro Kori, Portugal/Japan	HFATE
8:00-9:30 AHFE 3: FOOTHILL C	<p>There is no Planet T in Portugal - Designing a bachelor's degree in textile design for Portugal Sonia Seixas, Gianni Montagna, Maria João Felix, Portugal</p> <p>Predicting virtual garment fitting size with psychographic characteristics and 3D body measurements using artificial neural network and visualizing fitted bodies using generative adversarial network Nga Yin Dik, Wai Kei Tsang, Ah Pun Chan, Kwan Yu Lo, Wai Ching Chu, Hong Kong SAR China</p> <p>Fashion design using agar bioplastics Yutaro Kori, Japan</p> <p>Worker 4.0: A textile exoskeleton to support apparel industry João Oliveira, Luani Costa, Ana Ramôa, Ricardo Silva, Aureliano Fertuzinhos, Inês Estudante, João Pinheiro, Bruno Vale, André Pilastris, Paula Dias, Arthur Matta, Rosane Sampaio, Dário Machado, Marta Costa, Ana Roças, Pedro Madureira, Juliana Moreira, João Rui Pereira, Carla Pereira, Fernando Bruno, Portugal</p> <p>Effectiveness of ergonomics management on risk reduction of work-related musculoskeletal disorders among textile export industrial workers Sunisa Chaiklieng, Thailand</p>	
4	Biomimetics and Design Chair: Amilton Arruda, Brazil	ED
8:00-9:30 AHFE 4: FOOTHILL D	<p>Inspirations for more sustainable practices in design: Potential of biomimicry, material selection and 3D technology Marcelo Vicente, Junior, Luiz Valdo Alves Maciel Filho, Amilton Arruda, Thamyres Oliveira Clementino, Brazil</p> <p>Eco parametric architecture: Circular design & digital fabrication Fernanda Moreira, Antonio Nogueira, Hilma Santos, Amilton Arruda, Elton Cristóvão, Brazil</p> <p>Biomimicry as a tool for developing bioinspired products: Methods, process and application Antônio Roberto Miranda De Oliveira, Amilton Arruda, Carla Langella, Valentina Perricone, Brazil</p> <p>Finding tendencies of outfits for gym workout based on the user emotions: A study using Kansei method Mariya Toma, Francisco Rebelo, Elisângela Vilar, Portugal</p>	

5	Human-Centered Ergonomics and Service Design Co-Chairs: Lingyan Zhang and Yasheng Chen, China	ED
8:00-9:30 AAHFE 5: FOOTHILL E	<p>Integrated human factors in the systematic mechanical design of NPU-Wrist rehabilitation robot Yasheng Chen, Weiwei Yu, Jin Zhi Benali Abderraouf, Runxiao Wang, China</p> <p>Assessment of wine bottle packaging based on design aesthetics: An eye-tracking experiment Lingyan Zhang, Xinyi Chen, Yun Wang, Zuyao Zhang, Jihong Zhu, Xuan Dong, China</p> <p>Digital service design based on social welfare - Taking pet shelter as an example Jianan Liu, Yichen Wu, China</p> <p>Investigating the concept of sustainable strategy in digital service design Xiaotong Tian, Yichen Wu, China</p> <p>User requirement matching model for distributed conferencing systems in the post-epidemic era Jianan Liu, Na Xiong, Ruoyu Gu, Lingyan Zhang, Yichen Wu, China</p>	
6	Comfort and Interior Considerations in Vehicles I Co-Chairs: Nina Theobald and Junya Tatsuno, Germany/Japan	RR
8:00-9:30 AHFE 6: FOOTHILL F	<p>Investigating the influence of perceived anthropomorphism of vehicles on pedestrians' crossing decisions in a test track study Nina Theobald, Philip Joisten, Felix Friedrich, Bettina Abendroth, Germany</p> <p>Detection of unconscious movements with RGB-D camera for objective ride comfort evaluation Junya Tatsuno, Yushi Otsuka, Setsuo Maeda, Japan</p> <p>Development of a seating buck for ergonomic vehicle evaluation in VR environment Alexander Mueller, Fabian Schmiel, Simon Buck, Temidayo Amosu, Germany</p> <p>Construction of evaluation index system for vehicle occupant's riding posture comfort Huimin Hu, Jianglan Chen, Wei Li, Ling Luo, Daoqi Su, Yinxia Li, Wenlei Niu, Anna Hao, China</p> <p>Effect of secondary tasks in touchscreen in-vehicle information system operation on driving distraction Wuweidan Duolikun, Binjue Wang, Xiaonan Yang, Hongwei Niu, Xuanzhu Wan, Qing Xue, Yan Zhao, China</p>	
7	Usability and User Experience Applications I Co-Chairs: Alexander Kreis and Wei Du, Austria/China	UUE
8:00-9:30 AHFE 7: FOOTHILL G1	<p>User experience in modern cars – definition, relevance and challenges of digital automotive applications Alexander Kreis, Mario Hirz, Daniel Fragner, Austria</p> <p>User experience elements of data visualization large screen: The example of electricity industry Wei Du, Xinxiong Liu, China</p> <p>User-centered dashboard for sensors-enabled human state monitoring: Two operational use cases Alexandre Marois, Laura Salvan, Noémie Lemaire, Jean-françois Gagnon, Canada</p> <p>User experience design and evaluation on mobile investment application user interface prototype Chieh-Ju Huang, Julio Kolopitawondal, Taiwan</p> <p>Visual variable perception in time series dynamic visualization Chunzhu Mi, Xiaojun Liu, China</p> <p>Exploring the correlation between campus map representation and wayfinding behavior through virtual environment Kai-wei Hsu, Ching I Chen, Meng-Cong Zheng, Taiwan</p> <p>The information architecture of PDAs-its impact on user comprehension and risk perception Li-Jen Wang, Meng-Cong Zheng, Taiwan</p>	

8	Perception, Behavior and Cognitive Workload Co-Chairs: Jacob Loranger and Miriam Maibaum, USA/Germany	SYSI
8:00-9:30 AHFE 8: FOOTHILL G2	<p>Measures for human design of mental stress factors of digital work in public administrations Miriam Maibaum, Marc-André Weber, Sascha Stowasser, Germany</p> <p>Exploring interactive design strategies of online learning platform based on cognitive load theory Bian Kun, Wang Yan, Dongnan Han, China</p> <p>The design of mid-air ultrasonic haptic interfaces based on the perception of lines Jacob Loranger, Justin Brown, Henry Kindler, Paul Fink, Velin Dimitrov, Nicholas Giudice, USA</p> <p>Cognitive friction measurement: Interaction assessment of interface information in complex information systems Ziling Feng, Peng Ji, China</p> <p>Evaluation of the impact of visual decoration on the memorable effect in big data visualization: The example of bar chart Li Yuja, Xiaojun Liu, China</p>	
9	Product Development Methodologies Chair: Zhan Xuewen, China	KE
8:00-9:30 AHFE 9: PACIFIC A	<p>Optimization and decision making of design solutions for product development of wickerwork lamps Tianxiong Wang, Liu Yang, Xian Gao, Tong Yu, Qiang Yu, China</p> <p>Evaluation method for modeling beauty of construction machinery based on analytic hierarchy process Li Hui, Zhan Xuewen, China</p> <p>AI image generation boosts Kansei engineering design process Shigekazu Ishihara, Rueikai Kuo, Keiko Ishihara, Japan</p> <p>A study on the spatial location of HCP and spinopelvic alignment when sitting on an automotive seat Woojin Choi, Siyoung Choi, Ka Sanghoon, Kim Sunwoong, Sohn Moonjun, South Korea</p>	
10	Informatics Innovation and Engineering Application Co-Chairs: Fuad Abujarad and Sheau Farn Max Liang, USA/Taiwan	HIBEA
8:00-9:30 AHFE 10: PACIFIC B	<p>Digital informed consent for older adults in emergency department research Chelsea Edwards, Fuad Abujarad, USA</p> <p>Combination of tall-man lettering and symbol prefixing to improve drug identification by pharmacists Sheau Farn Max Liang, Kai Xuan Luo, Ren Ming Zhang, Tu Sheng Lee, Taiwan</p> <p>BIOFEE: Biomedical Framework for Enhanced Experimentation José Rouillard, Jean-Marc Vannobel, Marie-Helene Bekaert, France</p> <p>Understanding the dietary need of a local food bank's population using visual analytics Mikaya Hamilton, Steven Jiang, Lauren Davis, USA</p> <p>Home healthcare system application design for COVID-19 preventive management Yukun Xia, Yan Gan, Zijie Ding, Shanyu Ge, Yongkang Wu, China</p> <p>PBC-ML: Predicting breast cancer in humans using machine learning approach Damilola Oni, Le Trung Thanh, Satyam Mishra, Vu Minh Phuc, Emmanuel Arshad, Nigeria</p>	
11	Human-Centered Studies in the Metaverse Co-Chairs: Yawen Chang and Ziqiang He, Taiwan/China	HCMDE
8:00-9:30 AHFE 11: PACIFIC C	<p>The effects of virtual reality from different visual perspectives on empathy. Dinghau Huang, Yuling Pan, Taiwan</p> <p>Exploring the application of virtual digital human in the transmission of food culture Shuwen Qiu, Zixuan Huang, China</p> <p>Memories-to-go: A remote interactive experience for parents and their overseas adolescent children Yawen Chang, Wei-Chi Chien, Taiwan</p> <p>Collaborative design based on metaverse technology: Case of interactive design of children's educational products Ziqiang He, Ke Jiang, Jingyu Zhang, Yue Gao, Lina Zhao, China</p> <p>Intangible cultural heritage: Cultural heritage information augmentation of VR Art Exhibition of Han Tomb, China Jian Yu, China</p>	

12	Product Design + Human Factors I Co-Chairs: Susan Sokolowski and Linsey Griffin, USA	IPID
8:00-9:30 AHFE 12: PACIFIC D	<p>Machine learning to define anthropometric landmarks for relevant product design 2D blueprint measures Ahmed Baruwa, Susan Sokolowski, Jacob Searcy, Daniel Lowd, USA</p> <p>Breast cancer recovery product design needs using an athlete benefit model (ABM) Susan Sokolowski, Andr Leiserowitz, Michael Orlow, Juliana Courogen, USA</p> <p>Sports apparel warm and cool touch effusivity spectrums based on human perception Susan Sokolowski, Emily Karolidis, Arya Hakimian, USA</p> <p>Modelling human-behaviour for verification of tele-operated robotic systems Holly Hendry, Mark Chattington, Ana Cavalcanti, Cade McCall, UK</p> <p>Developing Practice guidelines for interprofessional educational collaboration between design and healthcare fields Kimberly S. Mollo, Eric Schneider, Tod Corlett, Alia Boynton, Sarah Chu, Lauren Kennedy, Danielle O'Connell, USA</p>	
13	Assistive Technology and User Experience Chair: Daniel Ireton, USA	HFAAT
8:00-9:30 AHFE 13: PACIFIC E	<p>Investigating health-care consumers ' intention to use patient decision aids: An empirical study Wen-Tsung Ku, Hui-Min Lai, Pi-Jung Hsieh, Taiwan</p> <p>Mobile site and native app accessibility testing methodology Gian Wild, Australia</p> <p>Accessible games day: Building successful community engagement Daniel Ireton, Angie Brunk, USA</p>	
14	HSSE Welcome Co-Chairs: Christine Leitner, Walter Ganz, Clara Bassano, Debra Satterfield, UK/Germany/Italy/USA	HSSE
	8:00-9:30 AHFE 14: PACIFIC F	
REFRESHMENTS: 9:30 - 10:00 • ROOM: SoMA (2ND LEVEL)		
16	Cross Boundary of Visual Communication Design in the New Era Co-Chairs: Chao Zheng and Mengxi Cui, China	ED
10:00-12:00 AHFE 1: FOOTHILL A	<p>On the cultivation mechanism of postgraduates under the background of the fusion of new arts and sciences Chao Zheng, China</p> <p>Research of the typography design for digital reading on mobile devices Mengxi Cui, Chao Zheng, Wenning Shi, Zihao Wang, China</p> <p>Visualization and visual communication of Tibetan music Xinlei Zhang, Chao Zheng, Yichen Zeng, Xinhao Zhan, Li Cheng Xie, Bingkun Qiu, China</p> <p>Innovative strategies for generative art in the NFT Market: A case study of the art blocks Bingkun Qiu, Chao Zheng, Zihao Wang, Li Cheng Xie, Xinhao Zhan, Yichen Zeng, Xinlei Zhang, China</p> <p>Ergonomic risk reduction: A height-adjustable mesh truck for picking activities evaluated with a depth camera Francesco Lolli, Antonio Maria Coruzzolo, Chiara Forgione, Platao Gonçalves Terra Neto, Italy</p>	
17	Artificial Intelligence Symbiosis Co-Chairs: Patrick Seitzinger and Richard Goossens, Canada/Netherlands	EHMD
10:00-12:00 AHFE 2: FOOTHILL B	<p>Artificial intelligence in healthcare: The explainability ethical paradox Patrick Seitzinger, Jay Kalra, Canada</p> <p>Expanding our grasp: Artificial intelligence as the next leap forward in healthcare quality Jay Kalra, Patrick Seitzinger, Canada</p> <p>Posture correction girdle with intelligent padding system to dynamically adjust the pressure distribution and correct the scoliotic spine Zhongping Ye, Joanne Yip, Jason Cheung, Ruixin Liang, Jun Zhang, Xiaolu Li, Kai-yu Tong, Hong Kong SAR China</p> <p>Convergence of health and technology - how to integrate disciplines for transition in healthcare? Richard Goossens, Netherlands</p> <p>Augmented reality in heat stroke emergency medical developing design Shuo-fang Liu, Chien Sheng Fei, Taiwan</p>	

18	Safety Culture and Resilience Co-Chairs: Francisco Duarte and Tarcisio Abreu Saurini, Brazil	SMHF
10:00-12:00 AHFE 3: FOOTHILL C	Design for resilient performance: The role of reflective meetings Claudia Guerra Disconzi, Tarcisio Abreu Saurin, Brazil Safety culture assessment and the transformation of practices Francisco Duarte, Raoni Rocha, Francisco Lima, Maria Luiza Fernandes, Luciano do Valle Garotti, Brazil Extensive data collection in an in-hospital disaster response exercise for evaluating disaster resilience Taku Ideguchi, Taro Kanno, Mizuki Umemoto, Kazumi Kajiyama, Ryoko Ikari, Misumi Yamazaki, Sachika Sharikura, Japan Anomaly detection of bicep curl using pose estimation Ka Wing Frances Wan, Joanne Yip, Ting Hin Alex Mak, Kenny Yat Hon Kwan, Mei-chun Cheung, Benson Cheng, Kit Lun Yick, Sun Pui Ng, Hong Kong SAR China	
19	Vehicle Automation I Co-Chairs: Ralf Philippsen and Sara Schwindt, Germany	RR
10:00-12:00 AHFE 4: FOOTHILL D	Autonomous shuttle or conventional cab? Investigating users' decision to share a ride Hannah Biermann, Gian Luca Liehner, Ralf Philippsen, Martina Ziefle, Germany Who will drive automated vehicles? Usability context analysis and design guidelines for future control centers for automated vehicle traffic Sarah Schwindt, Adrian Heller, Nina Theobald, Bettina Abendroth, Germany Enhancing user acceptance of shared automated vehicles – An exploratory study on mobility behavior and attitude towards automated mobility concepts Fabian Schlichtherle, Wolfram Remlinger, Germany I want to ride my bicycle? User requirements and usage scenarios for electric cargo bikes Ralf Philippsen, Hannah Biermann, Simon Himmel, Martina Ziefle, Germany Assessing psycho-physical stress in occupational drivers using commercial wearables technologies: The first steps of The Milestone Project Nina Van Oost, Federica Masci, Jean-marie Aerts, An Neven, Geert Wets, Johan Verbraecken, Belgium Can haptic signals aid to solve ADAS limitations? Víctor De Nalda Tárrega, Andrés Soler, Jose Laparra, Jose Solaz, Adrian Morales Casas, Spain	
20	Ergonomics in Architecture Co-Chairs: Alicja Maciejko and Jinzhong Wang, Poland	SUPI
10:00-12:00 AHFE 5: FOOTHILL E	The search for a new housing formula using T-plan houses based on an analysis of typologies of housing as a response to the global housing crisis Alicja Maciejko, Poland Exploring the potential of gestures for controlling doors and windows in smart homes Sinem Görmez, Carsten Röcker, Germany A systematic review of smart building acceptance based on user experience Lina Xu, China Bioclimatic high rise buildings in China recent trends Jinzhong Wang, Wojciech Bonenberg, Agata Bonenberg, Xia Wei, Poland Measured architectures for the circularity of building Donatella Radogna, Italy Making architecture: Javier García Solera - The sense of place in architecture Marco Sosa, Boris Orellana-Alvear, Natalia Pacurucu, Ecuador	
21	Interface Design Co-Chairs: De Vere Michael Kiss and Zhang Boyang, USA/China	UUE
10:00-12:00 AHFE 6: FOOTHILL F	Usability study on the user interface design of streaming service applications Yihung Hsu, Chien-Hsiung Chen, Taiwan Enhanced user-system learning interface De Vere Michael Kiss, USA Effects of design thinking on learning user experience and user interface design Chieh-ju Huang, Taiwan Usability of music application interface systems Jiacheng Wang, Liangming Jia, China Effects of information layout and dynamic presentation of banner advertising on the user interface design of mobile food ordering application Weimin Zhai, Chien-Hsiung Chen, Taiwan Design of self driving tour planning interface based on tourism motivation Zhang Boyang, Yuanbo Sun, Huayu Zhang, China The application of co-design in service design: A bibliometric analysis of 2018-2022 Yue Cao, China	

22	System Design and Usability Co-Chairs: Luca Rizzi and Sarah De Cristofaro, Italy	SYSI
10:00-12:00 AHFE 7: FOOTHILL G1	<p>The power to be seen: A study on the accessibility design of live stream system for the visually impaired Jinbang Tan, Ranran Liao, Fucong Xu, Shaoping Guan, China</p> <p>User driven custom design - the solution to simplify customisation according to consumer needs Luca Rizzi, Sarah De Cristofaro, Antonio Zingarofalo, Italy</p> <p>Ergo4workers: Usability testing of the first prototype of an app for the ergonomic assessment of healthcare professionals Inês Sabino, Maria do Carmo Fernandes, Ana Antunes, António Monteny, Isabel Guimarães, Cátia Cepeda, Hugo Gamboa, Cláudia Quaresma, Isabel L. Nunes, Ana Teresa Gabriel, Portugal</p> <p>Eye tracking technology in Chinese design research Shilu Li, China</p>	
23	Human Factors in Contemporary Management Systems Co-Chairs: Harsimran Hothi and Hiroshi Ujita, USA/Japan	APMPC
10:00-12:00 AHFE 8: FOOTHILL G2	<p>Plant engineer performance improvement for effective risk reduction Hiroshi Ujita, Naoko Matsuo, Japan</p> <p>3 sprints from zero to innovative medical device in 16 months: Benefits of combining human factors and agile Adrián Morales Casas, Amparo López Vicente, Lorenzo Solano García, José Laparra Hernández, Spain</p> <p>Assembly workers' assessments of acceptable reaction load exposure when using handheld pistol-grip nutrunners Ava Mazaheri, Mikael Forsman, Linda Rose, Sweden</p> <p>Developing a quality control system for biotechnological device inspection improvement Harsimran Hothi, Fatemeh Davoudi Kakhki, USA</p> <p>Collaborative initiatives: An information-sharing approach in retail drop shipping supply chain Oluwaseun Laseinde, Clinton Aigbavboa, South Africa</p> <p>Exploring the effectiveness of Collaborative Planning, Forecasting and Replenishment (CPFR) in enhancing supply chain performance in drop shipping Oluwaseun Laseinde, Clinton Aigbavboa, South Africa</p>	
24	Design and Innovation Co-Chairs: Chen Wei and Shen Yu-lien, China/Taiwan	HFAS
10:00-12:00 AHFE 9: PACIFICA	<p>One-handed disabled product design based on CJM-KANO-AHP user need model Qi Liu, Jin-juan Duan, Pin Zhang, China</p> <p>The design of the upper and lower limb somatosensory rehabilitation system based on users' requirements Hu Zhe, Yi Li, China</p> <p>Designing a system using telepresence technology to enhance the feeling of being there for elderly individuals at healthcare centers Yu-Lien Shen, Chien-Hsu Chen, I-Hsin Chen, Taiwan</p> <p>Design of a home-based food assistance service for the elderly Xiaodong Gong, Chen Wei, Yushun Liu, Qian Gong, China</p>	
25	Advancing the Science of Human-Agent Teaming Co-Chairs: Maartje Hidalgo and Jessica Williams, USA	HFSIM
10:00-12:00 AHFE 10: PACIFIC B	<p>Team plan recognition: A review of the state of the art Loren Rieffer-Champlin, USA</p> <p>Beyond the tool vs. teammate debate: Exploring the sidekick metaphor in human-AI dyads Sylvain Bruni, Mary Freiman, Kenyon Riddle, USA</p> <p>Measurement and manipulation in human-agent teams: A review Maartje Hidalgo, Summer Rebensky, Daniel Nguyen, Myke Cohen, Lauren Temple, Brent Fegley, USA</p> <p>Measuring trust in a simulated human agent team task Cherrise Ficke, Arianna Addis, Daniel Nguyen, Kendall Carmody, Amanda Thayer, Jessica Wildman, Meredith Carroll USA</p> <p>The role of artificial theory of mind in supporting human-agent teaming interactions Jessica Williams, Rhyse Bendell, Stephen M. Fiore, Florian Jentsch, USA</p>	

<p>26</p>	<p>The Instrumented User: Using AR, VR, and Wearable Technologies for Enhanced Assessment Co-Chairs: Alessio Silvetti and Carisa Harris Adamson, Italy/USA</p>	<p>HFWT</p>
<p>10:00-12:00 AHFE 11: PACIFIC C</p>	<p>The human quest for wearable technologies for stable healthy lifestyle through self-measurement Sunday Adewale Olaleye, Esther Olubunmi Olaleye, Finland</p> <p>Improved affect prediction using complexity based ultra-short-term heart rate variability features Abhishek Tiwari, Behnaz Poursartip, Amin Mahnam, Tiago Henrique Falk, Canada</p> <p>Application of wearable technologies for the assessment of biomechanical risk in hairdressers Alessio Silvetti, Ari Fiorelli, Antonella Tatarelli, Lorenzo Fiori, Giorgia Chini, Tiwana Varrecchia, Adriano Papale, Alberto Ranavolo, Francesco Draicchio, Italy</p> <p>A dataset of watch and wristband for deep learning based multi-view stereo 3D model reconstruction Ma Bowen, Yi Xiao, Xinyu Guo, Yuxiang Pang, China</p> <p>The development of simple fit and support level equations to predict user specific settings for an arm support exoskeleton Carisa Harris Adamson, Alan Barr, Maury Nussbaum, Sunwook Kim, David Rempel, USA</p> <p>Sensor-based data acquisition via ubiquitous device to detect muscle strength training activities Elizabeth Wianto, Hapnes Toba, Chien-Hsu Chen, Maya Malinda, Indonesia</p>	
<p>27</p>	<p>Human Reliability Analysis Co-Chairs: Steven Tze Fung Lam and Toru Nakata, China/Japan</p>	<p>HERRP</p>
<p>10:00-12:00 AHFE 12: PACIFIC D</p>	<p>Human error and performance modeling with virtual operator model (HUNTER) synchronously coupled to Rancor Microworld Nuclear Power Plant simulator Roger Lew, Ronald Boring, Thomas Ulrich, USA</p> <p>A critical analysis of the concept of resilience skills from an enactivist perspective Martin Viktorelius, Sweden</p> <p>Human reliability analysis in aviation accidents: A review Steven Tze Fung Lam, Alan H. S. Chan, Hong Kong SAR China</p> <p>Digital twin verification for advanced reactor remote operations Thomas A. Ulrich, Joseph Oncken, Ronald L. Boring, Kaeley Stevens, Megan Culler, Stephen Bukowski, Troy Unruh, Jeren Browning, USA</p> <p>Synchronous vs. asynchronous coupling in the HUNTER dynamic human reliability analysis framework Ronald Boring, Thomas Ulrich, Roger Lew, Jooyoung Park, USA</p> <p>Analysis of tasks in autonomous systems using the EMRALD dynamic risk assessment tool Jooyoung Park, Jisuk Kim, Thomas Ulrich, Ronald Boring, Steven Prescott, USA</p>	
	<p>28</p>	<p>AISC</p>
<p>10:00-12:00 AHFE 13: PACIFIC E</p>	<p>A machine learning approach for optimizing waiting times in a hand surgery operation center Andreas Schuller, Marc Braun, Peter Hahn, Germany</p> <p>Automated decision support for collaborative, interactive classification Randolph Jones, Robert Bixler, Lilia Moshkina, USA</p> <p>Dynamically monitoring crowd-worker's reliability with interval-valued labels Chenyi Hu, Makenzie Spurling, USA</p> <p>Perceptions, attitudes and trust toward artificial intelligence – An assessment of the public opinion Gian Luca Liehner, Hannah Biermann, Philipp Brauner, Martina Ziefle, Alexander Hick, Germany</p> <p>Artificial empathy: Exploring the intersection of digital art and emotional responses to the COVID-19 pandemic Mingzhu Li, Ming Zhong, UK</p>	

29	Designing Future Service Business: How Data and AI Drive Service Innovation Co-Chairs: Jens Neuhuettler and Rainer Nägele, Germany	HSSE
10:00-12:00 AHFE 14: PACIFIC F	Method to identify data related characteristics for detailing a capability maturity model for the smartification of products	
	Sandra Frings, Holger Kett, Germany	
	The role of data and AI during development of smart services	
	Jens Neuhuettler, Rainer Nägele, Germany	
	COOPE – a framework for managing competition in the platform economy	
	Louisa Loew, Thomas Fischer, Jens Neuhuettler, Germany	
	Preparing data science projects – between economic aspects and requirements analysis	
	Claudia Dukino, Damian Kutzias, Germany	
Bringing data science to practice: from prototype to utilisation		
Damian Kutzias, Claudia Dukino, Germany		
Towards a reference process for developing cognitive service systems		
Maximilian Feike, Jens Neuhuettler, Janika Kutz, Germany		
AI-based services - Design principles to meet the requirements of a trustworthy AI		
Janika Kutz, Jens Neuhuettler, Jan Spilski, Thomas Lachmann, Germany		
12:00-13:00 • ENJOY LUNCH AT THE RESTAURANT OF YOUR CHOICE		
31	Cross-Cultural Decision Making Co-Chairs: Agnieszka Cybal-Michalska and Javed Sheikh, Poland/Pakistan	CCDM
13:00-15:00 AHFE 1: FOOTHILL A	Globalisation, cultural pluralism - on the need for (meta)analytical assumptions of career theory for cross-cultural career counseling practice	
	Agnieszka Cybal-Michalska, Poland	
	A harmonized multi-lingual terminology for ICT devices and services	
	Martin Boecker, Emmanuel Darmois, Germany	
	Cross-cultural analyses between USA and Japan: Personality, emotional strategies, and job performance of customer service employees	
	Noriko Okabe, Japan	
Relationship between user characteristics regarding ICT devices and acceptability of new systems in Society 5.0		
Toshihisa Doi, Japan		
Abandoned Tibetan and Qiang Villages cause analysis: A case study of Li County		
Peng Liu, Yi Wang, China		
32	Systemic Structural Activity Theory Chair: Inna Bedny, USA	CN
13:00-15:00 AHFE 2: FOOTHILL B	Applying smart assistants in express decision for insurance choices	
	Sai K. Mukkavilli, Alexander M. Yemelyanov, Rahul Sukumaran, USA	
	Application of systemic structural activity theory to web design	
	Inna Bedny, USA	
	Self-regulation problem solving for sufficient risk reduction	
	Alexander M. Yemelyanov, Alina A Yemelyanov, USA	
	Probabilistic predictive modeling in the critical human-in-the-loop (HITL) ergonomics engineering problems	
	Ephraim Suhir, Inna Bedny, USA	
Validity and rationality of using neuroergonomics concept in exploring worker mental issues in systemic-activity theoretical research		
Mohammed Aminu Sanda, Ghana		
The contribution of Gregory Bedny's systemic-structural activity theory to the science of activity		
Fred Voskoboynikov, Waldemar Karwowski, Latvia/USA		

33	Risk Assessment and Quality Improvement Co-Chairs: Molly Smyth and Johanna Närväinen, UK/Finland	EHMD
13:00-15:00 AHFE 3: FOOTHILL C	<p>Spatial user experience in outpatient waiting rooms Begoña Julia Nehme, So-yeon Yoon, Eugenio Rodríguez, Patricio Cumsille, David Torres, Chile</p> <p>'Trends in residents' factual descriptions six months after refresher training in writing medical incident reports Yoshitaka Maeda, Japan</p> <p>Usability validation of complex medical systems Ana Cristina Barbosa Medeiros, Molly Smyth, UK</p> <p>HealthGate: Unobtrusive home monitoring of vital signs, weight and mobility of the elderly Johanna Närväinen, Timo Urhema, Mikko Saajanlehto, Kari Bäckman, Johan Plomp, Finland</p> <p>A taxonomy of situation awareness failure factors in primary care Ahmed Patel, Porat Talya, Weston Baxter, UK</p>	
34	Ethical and Psychological Human Factors in Industrial Robotics I Chair: Sarah Fletcher, UK	MFG
13:00-15:00 AHFE 4: FOOTHILL D	<p>Breaking the barriers: Multilingual user engagement to increase process engagement and technology acceptance in manufacturing Iveta Eimontaite, Sarah Fletcher, UK</p> <p>Communication components for Human Intention Prediction – A Survey Seemal Asif, Fahad Khan, Phil Webb, UK</p> <p>Human-centric research of skills and decision-making capacity in fashion garment manufacturing to support robotic design tool development Kat Thiel, Susan Postlethwaite, UK</p> <p>Where are we at? A review of the advances in the ethical aspects of human-robot collaboration Tiziana Callari, Anne-marie Oostveen, Sarah Fletcher, Ella-Mae Hubbard, Niels Lohse, UK</p> <p>"We don't need ergonomics anymore, we need psychology!: The human analysis needed for human-robot collaboration Sarah Fletcher, Iveta Eimontaite, Phil Webb, Niels Lohse, UK</p>	
35	Usability Evaluation I Co-Chairs: Yi-Hsien Tsai and Cai-ying Cheng, Taiwan	UUE
13:00-15:00 AHFE 5: FOOTHILL E	<p>Design and usability evaluation of visual perception game-based training system for children with developmental delays Cai-ying Cheng, Chun-chun Wei, Yang-cheng Lin, Taiwan</p> <p>Usability evaluation of self-ordering kiosks in fast food restaurants Yi Shan Lee, I Wen Yen, Meng-Cong Zheng, Taiwan</p> <p>Usability evaluation of self-service ticketing kiosks in cinemas Yi-Hsien Tsai, Ching I Chen, Meng-Cong Zheng, Taiwan</p> <p>User experience based acute death prevention monitoring system and emergency product design Jiajun Wei, Shiyi Zhou, Yan Gan, China</p> <p>Analysis of user interaction behavior on Sina Weibo under the context of intelligent technology Xue Xiong, Lin Li, China</p> <p>A bibliometrics-based study of visualizing design narratives Mimeng Zhang, China</p>	
36	Human Factors from the Innovative Agonology Perspective Chair: Roman Maciej Kalina, Poland	SIPOR
13:00-15:00 AHFE 6: FOOTHILL F	<p>Innovative agonology – definition, detailed theories, laws, and general rule of struggle Roman Maciej Kalina, Poland</p> <p>Hypothesis on the supreme value criteria of the global civilization Paweł Adam Piepiora, Roman Maciej Kalina, Poland</p> <p>Multidimensional educational models recommended by innovative agonology – examples of physical education and music education Elizabeth Waszkiewicz, Poland</p> <p>Struggle: The most frequently used word in the public sphere since the beginning of the COVID-19 pandemic Kazimierz Witkowski, Roman Maciej Kalina, Poland</p> <p>Language of innovative agonology: A guide in combining micro and macro scales of preventive, therapeutic and defensive actions Justyna Bagińska, Roman Maciej Kalina, Poland</p> <p>Complementary medicine – An example of the application of the basic research method of innovative agonology Roman Maciej Kalina, Poland</p>	

37	Social Inclusion and Sustainability Through Product Design Co-Chairs: Beata Fabisiak and Miguel Carvalho, Poland/Portugal	DI
13:00-15:00 AHFE 7: FOOTHILL G1	<p>The role of design education in electronic waste management Swetha Anand, Cecilia Xi Wang, USA</p> <p>Inclusive clothing design: workshops based on case studies Leticia Marteli, Paula Trigueiros, Fernando Moreira da Silva, Luis Carlos Paschoarelli, Brazil/Portugal</p> <p>Contribution of ergonomics and anthropometry in the design of hospital clothing for prevention of pressure ulcers in patients with reduced mobility Rochelne Barboza, Miguel Carvalho, Portugal</p> <p>Design for all in creation of furniture for urban green zones Robert Kłos, Beata Fabisiak, Joanna Chrzan, Poland</p> <p>The design of human smart ships. How design-driven approach can foster future development and innovation in the cruise sector Giuseppe Carmosino, Arianna Bionda, Andrea Ratti, Italy</p> <p>Implementation of smart, healthy, age-friendly environment through an inclusive robotic air purifier Jonathan Lagrimino, Sara Viviani, Alessandra Rinaldi, Italy</p>	
38	Human Factors in Software and Systems Engineering I Co-Chairs: Charlotte Haid and Chris Lowe, Germany/UK	HFSSE
13:00-15:00 AHFE 8: FOOTHILL G2	<p>Explaining algorithmic decisions: design guidelines for explanations in User Interfaces Charlotte Haid, Alicia Lang, Johannes Fottner, Germany</p> <p>Finding the balance: Human factors integration for commercial-off-the-shelf (COTS) systems Chris Lowe, UK</p> <p>Value-driven architecture enabling new interaction models in Society 5.0 Elizabeth Koumpan, Anna Topol, Canada</p> <p>The removal of irrelevant human factors in a multi-review corpus through text filtering Aaron Moody, Makenzie Spurling, Chenyi Hu, USA</p> <p>Accounting trustworthiness requirements in service systems engineering Steven Schmidt, Sandro Hartenstein, Germany</p> <p>Analysis of the behavior of the floating systems used for boundary of river-sea recreational activities area Alexandra Gabriela Ene, Carmen Mihai, Mihaela Jomir, Constantin Jomir, Romania</p>	
39	Human Factors in Game Design Co-Chairs: Wiliam Machado De Andrade and Mritunjay Kumar, Australia/India	HFGD
13:00-15:00 AHFE 9: PACIFIC A	<p>Mobile game design and ergonomics: a necessary combination Wiliam Machado De Andrade, Australia</p> <p>Addressing the UN 2030 sustainable development agenda and the ESG index with serious games in virtual environments. Panagiotis Markopoulos, Evangelos Markopoulos, Finland</p> <p>Laterality in gesture-based video games Mritunjay Kumar, Braj Bhushan, Ahmed Sameer, Amit Kundal, India</p> <p>Game-based plant science popularization mobile application for contemporary young people Yuqi Li, Sijia Wang, China</p> <p>Flow in video games: A systematic review and meta-analysis of the effects of game design choices Morgane Pujol, Loïc Caroux, Céline Lemerrier, France</p>	
40	Panel Discussion: Human Factors Considerations in Applied Simulation Environments in Naval Aviation Training Co-Chairs: Beth Atkinson and Emily Anania, USA	HFSIM
13:00-15:00 AHFE 10: PACIFIC B	<p>Best practices using applied training environments to validate new technologies Emily Anania, USA</p> <p>Challenges with extending simulation-based metrics to multi-level live, virtual, constructive environments Mitchell Tindall, USA</p> <p>Best-fit simulation for survival training topics Beth Atkinson, USA</p> <p>Implementing low-fidelity simulation environments for tactical decision making John Killilea, USA</p> <p>Applying extended reality to modernize training efficiency Michael Natali, USA</p> <p>Leveraging front-end analyses to identify appropriate simulation solutions James Pharmer, USA</p>	

<p>41</p>	<p>Product Design + New Horizon Co-Chairs: Joyce Thomas and Megan Strickfaden, USA/Canada</p>	<p>IPID</p>
<p>13:00-15:00 AHFE 11: PACIFIC C</p>	<p>Stretching and using designers' empathic horizons Joyce Thomas, Megan Strickfaden, USA</p> <p>(Re)storying empathy in design thinking Megan Strickfaden, Adolfo Ruiz, Joyce Thomas, Canada</p> <p>Pillow forts: Teaching design through play and making Malcolm Stielow, Megan Strickfaden, Canada</p> <p>Eyewear design: The journey to improve fitting for a diverse population Juanjuan June He, USA</p> <p>Leveraging biologically inspired design as an effective instructional strategy Wendell Wilson, Young Mi Choi, UK</p> <p>Digital to physical medical modeling: Industrial design activities in support of a limb cooling medical device Jason Germany, Abhijith Shasheendra, Ketan Sunil Mhetre, Shahram Aarabi, Ashley Emery, USA</p>	
<p>42</p>	<p>Design, Co-Creation and Innovation Co-Chairs: Marita Canina and Thomas Weinhauser, Italy/Germany</p>	<p>CIE</p>
<p>13:00-15:00 AHFE 12: PACIFIC D</p>	<p>Designing the drivers to boost digital creativity and enable digital maturity" Marita Canina, Carmen Bruno, Eva Monestier, Italy</p> <p>Fostering creativity to design students as a problem-solving process for climate change Leonardo Springer, Portugal</p> <p>Exploiting the innovation potential of medium-sized mechanical engineering companies through the practical application of agile methods Thomas Weinhauser, Andreas Eursch, Sophie Steinmaßl, Germany</p> <p>Needs matter: A detailed typology of fundamental needs for human-centered design Siyuan Huang, Pieter Desmet, Netherlands</p> <p>Value oriented design of vehicles along emotional personality structures and character traits of customers Sebastian Stegmüller, Antonio Ardilio, Franziska Braun, Germany</p> <p>Anatomical landmark-guided deformation methods for cranial modeling Zhuoman Liu, Yan Luximon, Wei Lin Ng, Eric Chung, Jie Zhang, China</p> <p>A novel temple clamping force measurement method for eyeglasses design Jie Zhang, Junjian Chen, Luwei Chen, Yan Luximon, Hong Kong SAR China</p> <p>Integrating views of digital twins in the strategic planning of cyber-physical products Lars Arnemann, Benjamin Schleich, Germany</p>	
<p>43</p>	<p>Data Dependency I Co-Chairs: William Lawless and Ariel M. Greenberg, USA</p>	<p>HFRDUS</p>
<p>13:00-15:00 AHFE 13: PACIFIC E</p>	<p>Late binding dependence in collaborating systems Ted Goranson, Australia</p> <p>Designing artificial ethical minds Ariel Greenberg, USA</p> <p>Autonomous human-machine teams: Data dependency and Artificial Intelligence (AI) William Lawless, USA</p> <p>Human-AI teaming: Review of the NAS Report Ryan Quandt, USA</p> <p>Calibrating uncertainty in interactive machine learning environments Jaelle Scheuerman, Zach Bischof, Chris Michael, USA</p> <p>Attentional limits and advanced air mobility ecosystem: A model of attention allocation, trust, and system performance Yusuke Yamani, Tetsuya Sato, Jessica Inman, USA</p>	

<p>44</p>	<p>Digital Transformation and The New Deal of Service System Political Governmentality Chair: Clara Bassano, Italy</p>	<p>HSSE</p>
<p>13:00-15:00 AHFE 14: PACIFIC F</p>	<p>New human engagement-first governance approach in craft startups Yuriko Sawatani, Nobuo Kanai, Japan</p> <p>Roadmap to close the gap between undergraduate education and stem employment across industry sectors, further studied Yassi Moghaddam, Martha Russell, Josephine Yuen, Haluk Demirkan, USA</p> <p>T-Shaped Professional (T-SP) Model to support human-machine interaction Paolo Barile, Sergio Barile, Clara Bassano, Paolo Piciocchi Marialuisa Saviano, James C. Spohrer, Italy/USA</p> <p>The role of governmentality in digital transformation Pierpaolo Testa, Italy</p> <p>Ethical AI for a better society: The challenging task of driving the digital and ecological transformation in Italy Maria Colurcio, Angela Caridà, Ambra Altimari, Italy</p>	
<p>REFRESHMENTS: 15:00 - 15:30 • ROOM: SoMA (2ND LEVEL)</p>		
<p>46</p>	<p>DHMAO in Applied Anthropometry, Performance and Accommodation Co-Chairs: Hyegjoo E. (Joo) Choi-Rokas and Yaritza Hernandez, USA</p>	<p>DHMAO</p>
<p>15:30-17:00 AHFE 1: FOOTHILL A</p>	<p>Development of U. S. Army Tactical Brassiere (ATB) sizing system Hyegjoo Choi-Rokas, Peng Li, K. Blake Mitchell, USA</p> <p>An iterative and anthropometrically driven approach to body armor plate design for females Peng Li, Hyegjoo Choi-Rokas, Blake Mitchell, Asbed Tashjian, Matthew Hurley, USA</p> <p>Development of test and evaluation methodologies for headborne low light sensor systems Jose Villa, Edward Hennessy, Blake Mitchell, Reeve Goodenough, Rebecca Skulsky, USA</p> <p>Evaluating the effects of visual traits on individual marksmanship performance in a simulated fireteam engagement Peioneti Lam, Jose Villa, John Christopher, Stephanie Brown, Linda Desimone, Wade Elmore, Seth Elkin-frankston, Victoria Bode, Blake Mitchell, USA</p> <p>Geometric analysis and visualization of maxillofacial anthropometry Will Green, Yaritza Hernandez, K. Han Kim, Hyegjoo Choi-Rokas, Peng Li, Todd Garlie, Blake Mitchell, Sudhakar Rajulu, USA</p> <p>Volumetric limits for carry in a spacesuit Yaritza Hernandez, K. Han Kim, Elizabeth Benson, Sudhakar Rajulu, USA</p>	
<p>47</p>	<p>Design-Driven Innovation in the Era of Artificial Intelligence Chair: Na Xiong, China</p>	<p>ED</p>
<p>15:30-17:00 AHFE 2: FOOTHILL B</p>	<p>Using Kansei design to create a predictive model for voice user interfaces for electronic appliances Francisco Rebelo, Ricardo Dias, Maria Mendonça, Joao Costa, Paulo Noriega, Elisângela Vilar, Portugal</p> <p>Design improvement of metro access control system based on ergonomics research Zixuan Huang, Shuwen Qiu, Zhijuan Zhu, China</p> <p>Media appropriations of young consumers: Production and consumption of digital content on social networks Ernesto Filgueiras, Romulo Pinto, Portugal</p> <p>Mental model in interaction design research: A bibliometric analysis Yuqi Liu, China</p>	
<p>48</p>	<p>Knowledge and Creating Value in Teams, Organizations, Communities, and Societies I Co-Chairs: Youji Kohda, Yasunobu Ito and Takuichi Nishimura, Japan</p>	<p>HSSE</p>
<p>15:30-17:00 AHFE 3: FOOTHILL C</p>	<p>The process of generating rhetoric to encourage participation in delayed benefit services: A case study of electronic community currency in japan Shinichi Kanekiyo, Yasunobu Ito, Japan</p> <p>Transmission of the techniques of care by nurses in close contact with the patient's living space: A case study of a visiting nurse station in Japan Kagari Otani, Yasunobu Ito, Japan</p> <p>The role of nonhuman actors in contributing to filmmaking solidarity: Ethnography of independent filmmaking in Japan Shun Coney, Yasunobu Ito, Japan</p> <p>Knowledge structuring by discussing purposes of each action in procedure-based knowledge graph Koki Ijuin, Takuichi Nishimura, Japan</p>	

<p>49</p>	<p>Current Advances in Maritime Education and Training Co-Chairs: Gesa Praetorius and Charlott Sellberg, Sweden</p>	<p>MAR</p>
<p>15:30-17:00 AHFE 4: FOOTHILL D</p>	<p>Developing an adaptive instructional system for simulation-based lifeboat training using instructor feedback Jennifer Smith, Reza Zeinali Torbati, Randy Billard, Bruno Emond, Brian Veitch, Canada</p> <p>Mining students' digital footprints to enhance simulator training Mashrura Musharraf, Jennifer Smith, Brian Veitch, Faisal Khan, Finland</p> <p>From policy to practice: Document analysis of learning outcomes in curricula steering simulator-based training in maritime bachelor educations Astrid Camilla Wiig, Norway</p> <p>Distributed leadership and seafarers' emergency response in a simulated navigation environment Delna Shroff, India</p>	
<p>50</p>	<p>Public Transportation and Safety I Co-Chairs: Jonas Andersson and Jingming Ma, Sweden/China</p>	<p>RR</p>
<p>15:30-17:00 AHFE 5: FOOTHILL E</p>	<p>Identification of system-wide contributory actors for road crashes in Bangladesh: Integrating AcciMap framework with the existing crash report form Md Shamsul Hoque, Bangladesh</p> <p>Topological shape differences in high-speed trains from a human perspective Jingming Ma, China</p> <p>Proving ground evaluation of enhanced ADAS: Context understanding ADAS Daban Rizgary, Niklas Strand, Jonas Andersson, Sweden</p> <p>Exploring various dimensions of perceived usefulness on the intention to use mobility-as-a-service Nicolaj Motzer, Marco Amorim, Michal Matowicki, Mira Kern, Pavla Pecherková, Germany</p> <p>Human factors issues of advanced rider assistance systems (ARAS) Chason Coelho, Stephen Garets, Jordan Bailey, Todd Frank, David Cades, Iiona Scully, USA</p> <p>A mobility app for everyone? An empirical analysis of user types based on social lifestyles and personal characteristics Irin Tsaga, Nicolaj Motzer, Mira Kern, Marco Amorim, Germany</p> <p>Information provision on interactive smart public displays in public transport in events of disruptions Waldemar Titov, Carl Friedrich Gerlach, Nicola Fricke, Thomas Schlegel, Germany</p>	
<p>51</p>	<p>Innovation Ecosystem in Co-Evolution of Business Ecosystem Co-Chairs: Minna Takala and Vesa Salminen, Finland</p>	<p>HFBMS</p>
<p>15:30-17:00 AHFE 6: FOOTHILL F</p>	<p>Anticipatory innovation governance model and regional innovation ecosystems supporting sustainable development Minna Takala, Taina Tukiainen, Finland</p> <p>ESG and UN SDGs driven strategy generation process for green and pink oceans Evangelos Markopoulos, Kui Zhao, Mascha Samkova, Hannu Vanharanta, Finland/UK/France</p> <p>Data space ecosystem development Heikki Ruohomaa, Vesa Salminen, Finland</p> <p>Understanding the challenges of today's labour market service provision in the EU Markko Liutkevicius, Sadok Ben Yahia, Marina Weck, Estonia/Finland</p> <p>Impacts and indicators of regional innovation ecosystems supporting sustainable development Minna Takala, Taina Tukiainen, Vesa Salminen, Jyri Sarkkinen, Finland</p>	
<p>52</p>	<p>Cyber Attack Detection and Management Co-Chairs: Myriam Hernandez-Alvarez and Per Håkon Meland, Ecuador/Norway</p>	<p>CYBER</p>
<p>15:30-17:00 AHFE 7: FOOTHILL G1</p>	<p>Deployment of ransomware detection using dynamic analysis and machine learning Myriam Hernandez-Alvarez, Juan Herrera-Silva, Ecuador</p> <p>Keeping the human element to secure autonomous shipping operations Per Håkon Meland, Dag Atle Nesheim, Ørnulf Jan Rødseth, Norway</p> <p>Out of sight but still in mind: Making 'invisible' cyber threats more salient via concrete analogies Aryn Pyke, Rebecca Bouchelle, David Uzhca, USA</p> <p>Analysis of risks to data privacy throughout European countries Wayne Patterson, USA</p>	

53	Competency Management in Education Co-Chairs: Salman Nazir and Satori Hachisuka, Norway/Japan	TELS
15:30-17:00 AHFE 8: FOOTHILL G2	<p>Comparing students' perceptions of technical drawing teaching before and after COVID-19 emergency Stefano Filippi, Barbara Motyl, Italy</p> <p>Educational game to stimulate phonological awareness in elementary school children Sebastián Toledo, Catalina Astudillo-Rodriguez, Priscila Verdugo, Santiago Cedillo, Jackelín Verdugo, Ecuador</p> <p>Relationship between preference for the existence of teacher images and learning effects in online learning for junior high school students Satori Hachisuka, Kayoko Kurita, Shinichi Warisawa, Japan</p> <p>Methods and tools in remote learning during the COVID-19 Pandemic - a case study Daria Motała, Agnieszka Stachowiak, Hubert Wojciechowski, Katarzyna Ragin-Skorecka, Poland</p> <p>Competent university teachers for digital learning in OSH Lucie Kocůrková, Jakub Reháček, Christian Schenk, Barbara Huber, Pedro Arezes, Nelson Costa, Czech Republic</p>	
54	Design for Inclusion in Learning and Digital Experiences Co-Chairs: Alessia Brischetto and Lauent M. Chaudron, Italy/France	DI
15:30-17:00 AHFE 9: PACIFIC A	<p>Research experiences and perspectives of inclusive virtual learning systems Alessia Brischetto, Ester Iacono, Italy</p> <p>Building a healthy family atmosphere: A hybrid toy system design based on the Zone of Proximal Development theory Xuan He, Shuai Sun, Xiaoling Lin, China</p> <p>The continuum world paradigm in dynamic interactions Laurent M. Chaudron, Olivier Bartheys, Marion Mazeran, France</p> <p>Public ICT access and use for people with disabilities (PWDs): A pilot study of public inclusive design Qiling Long, Kin Wai Michael Siu, Hong Kong SAR China</p> <p>Uncovering an inclusion gap in the design of digital assessments for middle school-aged deaf and hard of hearing students in the United States Alexis Polanco Jr, Tsailu Liu, USA</p> <p>Flow theory-based non-violent communication app design for children Xinwei Guan, China</p>	
55	Cognitive Computing for Healthcare and Wellbeing Co-Chairs: Lucas Paletta and Sandra Schuessler, Austria	CCIoT
15:30-17:00 AHFE 10: PACIFIC B	<p>Towards gender-sensitive motivation of patients with depression for cognitive training with a socially assistive robot Lucas Paletta, Sandra Schuessler, Eva Reininghaus, Michael Macher, Maria Fellner, Silvia Russegger, Melanie Lenger, Martin Pszeida, Thomas Orgel, Sandra Draxler, Alfred Haeussl, Nina Dalkner, Stephan Spat, Gloria Pötzt, Regina Roller Wirnsberger, Julia Zuschnegg, Austria</p> <p>Mild dementia decision support from ai-based digital biomarkers using mobile playful exercises with high adherence Martin Pszeida, Lucas Paletta, Silvia Russegger, Thomas Orgel, Sandra Draxler, Marisa Koini, Martin Berger, Maria Fellner, Stephan Spat, Sandra Schuessler, Julia Zuschnegg, Bernhard Strobl, Karin Ploder, Maria M Hofmarcher Holzhaacker, Austria</p> <p>Digital shadows and twins for human experts and data-driven services in a framework of democratic ai-based decision support Lucas Paletta, Herwig Zeiner, Michael Schneeberger, Yusuf Quadri, Austria</p> <p>AI-powered real-time analysis of human activity in videos via smartphone Rico Thomaneck, Benny Platte, Matthias Baumgart, Christian Roschke, Marc Ritter, Germany</p> <p>AI-enabled playful enhancement of resilience and self-efficacy with psychological learning theory Lucas Paletta, Silvia Russegger, Dietrich Albert, Eva Reininghaus, Melanie Lenger, Maria Fellner, Thomas Lutz, Martin Pszeida, Sandra Draxler, Thomas Orgel, Michael Schneeberger, Suher Guggemos, Jochen Mosbacher, Stephan Spat, Gloria Pötzt, Austria</p> <p>Impact of real-time stress monitoring in people with an intellectual disability Vera van der Nulft, Stefan de Vries, Josien Visschedijk, Reon Smits, Franka J. M. Meiland, Esmee Adam, Hanneke J. A. Smaling, Erwin R. Meinders, Netherlands</p> <p>Improving the security and usability of the internet of things through a scalable network-level smart system Mandeep Pannu, Canada</p>	

56	Sustainable Housing Development Co-Chairs: Natalia Cooper and Inge Pieterse, Canada/South Africa	SCON
15:30-17:00 AHFE 11: PACIFIC C	Does size matter? Findings on the green building cost premium in South Africa for 2009-2018 Danie Hoffman, HOFFIE Cruywagen, South Africa Evaluating sustainable and green building designs using human factor approaches Natalia Cooper, Anca Galasiu, Farid Bahiraei, Canada Improving cost modelling of residential property replacement costs for short-term insurance purposes: A South African perspective Inge Pieterse, South Africa Design strategies of bamboo fiber-based composites pavilion under the dual-carbon background Shun Yin, Xinhe Lu, Xiuqing Zeng, Jiyao Wei, Shiyuan Zhang, Weiwei Yao, China	
57	Creative Technology & Digital Media Chair: Amic G. Ho, Hong Kong	CTDM
15:30-17:00 AHFE 12: PACIFIC D	Beyond problem-solving: Exploring design modes for children's medical care service and experience Cheng Peng, China Angel or devil? Public attitudes toward AI arts from cross-cultural perspectives Yuqing Liu, China Optimization of the animation production process utilizing game engine Yawen Zhang, China Kneading design system: 3D modeling study tool with emotional value for non-specialists Daishi Iwai, Japan Understanding the roles of art and design technology in art therapy Ruth Chau, Amic Ho, Hong Kong SAR China Navigating the digital landscape: Trends and challenges for museums in the 21st century Mingzhu Li, Ming Zhong, UK	
58	Design, Communication and Human Dynamics Co-Chairs: Daniel Raposo and Pedro Ferreira, Portugal	HDCS
15:30-17:00 AHFE 13: PACIFIC E	Emotion in the communication process and the power of understanding the message Silvia Rala, Ana Paula Gaspar, Portugal A synaesthetic design study: A driver for the perception of colour on textile biomaterials selection Pedro Ferreira, Gabriela Forman, Portugal Systematic design and construction strategy of subway public art based on urban spirit Liu Lian, China Visual thinking through diagrams Rogério Ribeiro, Daniel Raposo, Rita Almendra, João Neves, Portugal Brand marks' performance in digital media Daniel Raposo, Ricardo Correia, Rogério Ribeiro, João Neves, Portugal	
59	Urban Air Mobility Chair: Kim Vu, USA	AVI
15:30-17:00 AHFE 14: PACIFIC F	Use of tactile alerts in urban air mobility vehicles Kali Haneji, Kristine Leung, Alina Tran, Justin Cheung, William Deabaapilux, Panadda Marayong, Kim-Phuong L. Vu, Praveen Shankar, Thomas Z. Strybel, Vernol Battiste, USA Examining workload and trust in automation when using xTM client's fleet manager interface to support urban air mobility Shraddha Swaroop, Kim Vu, Quang Dao, USA Change detection in head-up displays (HUDs) and twilight environments James Miles, Monica Rosas, USA Human factors research considerations for terminal area urban air mobility operations Quang Dao, USA	
REFRESHMENTS: 17:00 - 17:30 • ROOM: SoMA (2ND LEVEL)		

<p>61</p>	<p>Design Method and Transdisciplinary Practices Between Virtual and Reality Co-Chairs: Yuhao Jiang and Haowen Guo, China</p>	<p>ED</p>
<p>17:30-18:45 AHFE 1: FOOTHILL A</p>	<p>Shaping multivariate values: An analysis of the research characteristics of DRS conference Yuhao Jiang, Danhua Zhao, China Global design practice: Mask design in COVID-19 era Wang Siwei, Danhua Zhao, China Research on intelligent cabin (scenario) design from the perspective of tangible interactive narratives Mingyu Li, Danhua Zhao, Zhizi Liu, China The effectiveness of the attention guidance mechanisms in VR museum Haowen Guo, Danhua Zhao, Liyang Zhang, Yihong Lin, Hao Xin, China Smart cockpit layout design framework based on human-machine experience Ziteng Zhang, Danhua Zhao, China</p>	
<p>62</p>	<p>Design Thinking to Create a Happier Life I Co-Chairs: Masashi Okubo and Yoshifusa Matsuura, Japan</p>	<p>APD</p>
<p>17:30-18:45 AHFE 2: FOOTHILL B</p>	<p>Enjoy life from within: A proprioception way Shuichi Fukuda, Japan Effect of enlightenment video for walk on motivation and action Masashi Okubo, Tsukasa Takami, Akihiro Tatsumi, Japan Skill training method aiming at empathy for body movements in the manufacturing industry Yoshifusa Matsuura, Japan Design for well-being in peer-to-peer circular economy Meng-xun Ho, Hideyoshi Yanagisawa, Japan Brand design based on Kansei product development: Integration among customer experience, Kansei value, and emotional design Shinya Nagasawa, Yusuke Irisawa, Japan</p>	
<p>63</p>	<p>Knowledge and Creating Value in Teams, Organizations, Communities, and Societies II Co-Chairs: Youji Kohda, Yasunobu Ito and Takuichi Nishimura, Japan</p>	<p>HSSE</p>
<p>17:30-18:45 AHFE 3: FOOTHILL C</p>	<p>Introducing low-code technology to promote diversity, equity and inclusion awareness in the workplace Natsumi Takahashi, Amna Javed, Youji Kohda, Japan How to (re)define nurses' professionalism: An ethnographic study of outpatient nurses in a small clinic in Japan Yaeko Kawaguchi, Yasunobu Ito, Japan "Design Thinking" as collaborative creativity in group work: A case study at a Japanese liberal arts university Tomoyuki Shigeta, Yasunobu Ito, Japan</p>	
<p>64</p>	<p>Ergonomic Risk Assessment Methods and Techniques I Co-Chairs: Shalinda Shafie and Yiteng Sun, Malaysia/China</p>	<p>PEHF</p>
<p>17:30-18:45 AHFE 4: FOOTHILL D</p>	<p>Development of a comprehensive human factor and ergonomics checklist for workplace inspections using a macroergonomics approach Shalinda Shafie, Shamsul Bahri Mohd Tamrin, Ng Yee Guan, Dayana Hazwani Mohd Suadi Nata, Malaysia Stability assessment of electromagnetic pulse neck massagers Zhelin Li, Yiteng Sun, Lijun Jiang, China Agility in ergonomics risk management: An oil and gas company's experience Atika Anuar, Malaysia An integrated FUCOM-ARAS model for ergonomic risk assessment Şura Toptanci, Turkey Ergonomics, health and safety challenges in the construction industry and the role of Industry 4.0 Simamnele Ngxesha, Claire Deacon, John Smallwood, South Africa Manual handling in health care sector using kinaesthetic techniques Alessio Silveti, Giorgia Chini, Tiwana Varrecchia, Francesco Draicchio, Italy</p>	

65	Physical Ergonomics and Work-Related Musculoskeletal Disorders I Co-Chairs: Henrijs Kalkis and Zenija Roja, Latvia	SOE
17:30-18:45 AHFE 5: FOOTHILL E	<p>Intervention of cotton picker in drudgery reduction of farm women Vijaya Lakshmi Velivelli, India</p> <p>Student perception on acceptability and usefulness of sit-stand desks in college classrooms Arijit Sengupta, Abiola Kuilan, USA</p> <p>What links career paths, health, and working conditions in the dropout at the end of working life? The results of a study on de-integration Sandrine Guyot, France</p> <p>Does working more than 40 hours or having more than one job affect the physical and mental health of janitors? Javier Freire, Melissa Afterman, Dominic Pina, Max Blumberg, Mike Zhang, Carisa Harris-Adamson, USA</p>	
66	Creativity Progression Innovation and Team Cohesion Co-Chairs: Vesa Salminen and Heikki Ruohomaa, Finland	HFBMS
17:30-18:45 AHFE 6: FOOTHILL F	<p>Data-based creativity in systemic evolutionary innovation Vesa Salminen, Jyrki Peltomaa, Juha Varis, Finland</p> <p>The role of open science in open innovation environment: The case of knowledge management model Jurga Kucinskiene, Egle Brezgyte, Gintaras Kucinskas, Marina Weck, Lithuania/Finland</p> <p>Spiral innovation automation and team cohesion Vesa Salminen, Matti Pyykkönen, Carita Salminen, Finland</p> <p>Human factors in managing strategic funnels of innovation Matti Pyykkönen, Jorma Jokela, Vesa Salminen, Finland</p> <p>Heuristics and biases uncovered during the digitalisation decision-making process in the property sector Laetitia Cook, Chris Cloete, South Africa</p>	
67	Cybersecurity, Privacy, Trust and Awareness Co-Chairs: Philip Morgan and Victoria Marcinkiewicz, UK	CYBER
17:30-18:45 AHFE 7: FOOTHILL G1	<p>Maladaptive behaviour in phishing susceptibility: How email context influences the impact of persuasion techniques George Raywood-Burke, Phillip Morgan, Dylan Jones, UK</p> <p>The effects of cyber readiness and response on human trust in self driving cars Victoria Marcinkiewicz, Phillip Morgan, Qiyuan Zhang, UK</p> <p>Using security metrics to determine security program effectiveness Satyam Mishra, Phung Thao Vi, Vu Minh Phuc, Oni Damilola Igbagbo, Nguyen Van Tanh, Vietnam</p> <p>Social Engineering Penetration Testing within the OODCA Cycle – Approaches to detect and remediate human vulnerabilities and risks in information security Asiye Öztürk, Erfan Koza, Michael Willer, Germany</p>	
68	Optimizing Learning and Education Co-Chairs: Kurt Englmeier and Mengni Yang, Germany/China	TELS
17:30-18:45 AHFE 8: FOOTHILL G2	<p>Exploring alternative performance evaluation method in nautical simulations Tae-eun Kim, Ziaul Haque Munim, Hans-Joachim Schramm, Norway</p> <p>An automated machine learning approach for early identification of at-risk maritime students Hasan Mahbub Tusher, Ziaul Haque Munim, Sajid Hussain, Salman Nazir, Norway</p> <p>Optimization strategy of interaction design for foreign language asynchronous online learning Mengni Yang, Mengfei Liu, China</p> <p>The language dimension of mental models in digital learning environments Kurt Englmeier, Germany</p> <p>Developing comprehensive sex education smart tools for the young generation with co-design: Sex education for parents and children at home Xiaoling Lin, Shuai Sun, Xuan He, China</p> <p>Forms of alliances between humans and technology: The role of human agency to design and setting up artificial intelligence-based learning tools Baran Osmanoglu, France</p>	

69	Applications in Robots, Drones and Unmanned Systems I Co-Chairs: William Lawless and Melissa Carraway, USA	HFRDUS
17:30-18:45 AHFE 9: PACIFIC A	<p>Navigating team cognition: goal terrain as living map to situation awareness Melissa Carraway, Victoria Chang, Nathan Hahn, Susan Campbell, USA</p> <p>Third person drone – gamification motivated new approach for controlling UAV Thomas Hofmann, Dennis Linder, Philip Lensing, Germany</p> <p>Defining and modeling ai technical fluency for effective human machine interaction Susan Campbell, Rosalind Nguyen, Elizabeth Bonsignore, Breana Carter-Browne, Catherine Neubauer, USA</p> <p>An interactive learning framework for item ownership relationship in service robots Yuanda Hu, Yate Ge, Tianyue Yang, Xiaohua Sun, China</p> <p>A bibliometric and visual analysis of autonomous vehicles-pedestrians interaction Chaomin Ma, Wanjia Zhang, China</p> <p>Multi-modal approach for evaluating human-autonomy team trust Ralph Brewer, Andrea Krausman, Catherine Neubauer, Kimberly Pollard, Daniel Forster, Angelique Scharine, USA</p>	
70	Industrial Cognitive Ergonomics and Engineering Psychology I Chair: Umer Asgher, Pakistan	ICEEP
17:30-18:45 AHFE 10: PACIFIC B	<p>Cognitive nature of procrastination Ekaterina Zabelina, Dastan Smanov, Russia</p> <p>Information display preferences for assembly instructions in 6 industrial settings Ari Kolbeinsson, Emmie Fogelberg, Peter Thorvald, Sweden</p> <p>The psychology behind packaging design Maria Leite Faria, Álvaro M. Sampaio, Joana Arantes, Portugal</p> <p>Situation awareness monitoring by behaviour detection and model's processes retroaction for crew member of nuclear power plant Yanfei Liu, Chao Shen, Junsong Liu, Feng Fu, Yuzhou Liu, China</p> <p>A cognitive monitoring task produces a minimal vigilance decrement Shannon Gyles, Jason McCarley, Yusuke Yamani, USA</p>	
71	Communication of Design I Chair: Amic G. Ho, Hong Kong	HFCD
17:30-18:45 AHFE 11: PACIFIC C	<p>Experience media model: A method to facilitate the consistent bottom-up innovation in community co-creation Yue Jiang, Tingtao She, Tak Cheong Lee, Jingwen Li, Li Yang, Zhaorui Li, Yujia Tang, China</p> <p>Live without time: The generation of media time and time anxiety, as well as the solutions Yuanyuan Xia, China</p> <p>A designer situation Yi Luo, Canada</p> <p>Public art, public space and service design: Communication between artists and audience Zi Yang, Izzy Yi Jian, Kin Wai Michael Siu, Hong Kong SAR China</p> <p>The influence of hiking trail map representation on route selection Pei Tsen Lai, Ching I Chen, Meng-Cong Zheng, Taiwan</p> <p>User participation in museum digital communication Yixin Guo, Yan Wang, China</p>	
72	Design, Social Innovation and Sustainable Social Change Co-Chairs: Ana Margarida Ferreira and Nicos Souleles, Portugal/Cyprus	HDCS
17:30-18:45 AHFE 12: PACIFIC D	<p>Strategic design, regenerative economy, and resilient rural communities. The creative nature hub Ana Margarida Ferreira, Ângela Ferreira, Portugal</p> <p>Smart tools, technological innovation, transdisciplinary research, and collaborative knowledge design. The KBAI project Ana Margarida Ferreira, Jorge Dias Fernandes, Eduardo Fermé, Portugal</p> <p>The education of the social designer Nicos Souleles, Cyprus</p> <p>SHELTER Project: Designing an innovative solution for earthquake resilience and survival Joao Gomes Ferreira, Ana Margarida Ferreira, Portugal</p> <p>The role of Information design in reducing dependence on health services Monica Santos, Suzana Dias, Portugal</p> <p>Design anthropology and the next evolution of the design process Nishanth Srikanth, USA</p>	

Saturday, July 22

Sunday, July 23

73	Human-Centered Aerospace Systems and Sustainability Applications I Co-Chairs: Christian Niermann and Wei Cao, Germany/China	HCASSA
17:30-18:45 AHFE 13: PACIFIC E	<p>Development process for a remote co-pilot to support single pilot operation in a next generation air transportation system Christian Niermann, Lars Ebrecht, Jari Küls, Marc Sebastian Findeisen, Thomas Hofmann, Germany</p> <p>User centered design process for a high-risk future aerospace system Marc Sebastian Findeisen, Christian Niermann, Jari Küls, Thomas Hofmann, Germany</p> <p>An ergonomic and design review of the Lunar Terrain Vehicle Jessica Sanchez, Jeff Feng, USA</p> <p>A model-based method for imbalance identification of aero-engine rotor Pei Liye, Zhang Dahai, Xu Fujian, Lu Yu, Ai Xing, China</p> <p>Feasibility study on damage detection of composite materials based on millimeter wave Wei Cao, Peiwei Zhang, Peifei Xu, China</p>	

Sunday, July 23, 2023

76	Emotional Design and UX Co-Chairs: Ester Iacono and Dai Shi, Italy/China	ED
8:00-9:30 AHFE 1: FOOTHILL A	<p>The effects of gender differences on user experience of smartphone vibration Yuxuan Liu, Xinmiao Nie, Jing Zhou, Xing Xiao, Haining Wang, China</p> <p>User experience design of hand-held beauty device Dai Shi, Ai Zhang, Jing Ou, Haining Wang, China</p> <p>Analyzing the effects of split-screen animated transition on user experience in in-vehicle infotainment systems Xinyuan Zhao, Yuan Xiang, Shuo Li, Hu Zhao, China</p> <p>Design and healthcare: Evaluation of emotional experience in pediatric radiology Ester Iacono, Laura Vagnoli, Enrica Ciucci, Francesca Tosi, Italy</p>	
77	Sensory Engineering and Emotion II Co-Chairs: Keiichi Watanuki and Kazunori Kaede, Japan	APD
8:00-9:30 AHFE 2: FOOTHILL B	<p>Effects of different alarm methods of minimum risk maneuver on drivers of following vehicles in automatic driving Masamitsu Nagayoshi, Keiichi Watanuki, Kazunori Kaede, Yusuke Osawa, Japan</p> <p>Relationship between bird's-eye view cognition and visual search behavior Keisuke Kanda, Hiromi Ishiwatari, Keiichi Watanuki, Japan</p> <p>Quantification of conspicuity using optical properties and evaluation of impression of pseudo-fingerprints on touch panels Yusuke Hatano, Keiichi Watanuki, Kazunori Kaede, Japan</p> <p>Effect of presentation of advertisements during visual display terminal work on concentration Kanta Onimaru, Keiichi Watanuki, Kazunori Kaede, Yusuke Osawa, Japan</p> <p>Effects of difference in listening tempo on task performers Ryo Suetake, Keiichi Watanuki, Kazunori Kaede, Yusuke Osawa, Japan</p> <p>Emotional space design research based on bibliometric Yilan Jin, China</p>	
78	Human Factors in Aviation I Co-Chairs: Jason Kring and Simon Cookson, USA/Japan	AVI
8:00-9:30 AHFE 3: FOOTHILL C	<p>Effects of napping on pilot performance: An experimental study Lenka Hanakova, Viktor Valenta, Aleš Řezníček, Roman Matyas, Vladimír Socha, Czech Republic</p> <p>Student air traffic controllers' performance under conditions of increased workload Terézia Pilmannová, Lenka Hanakova, Vladimír Socha, Michal Freigang, Stanislav Schmidt, Slovakia</p> <p>CVR data unavailable: A study of 52 airline accidents and incidents 2014-2022 Simon Cookson, Japan</p> <p>Perceived affective qualities in flight deck design Çiğdem Güneş, Gülşen Töre Yargın, Turkey</p> <p>Human factors analysis of strengths and challenges in aviation maintenance Jason Kring, R. Jordan Hinson, Ryan Dlugash, Michael Sawyer, Tara Gibson, Edward Austrian, USA</p> <p>Accessibility of air travel for passengers with reduced mobility: Results of passenger focus group Kay Atkin, Arun Ulahannan, Paul Herriotts, Stewart Birrell, UK</p> <p>Analysis of reports that cite human factors and energy management issues in transport airplane operations Kevin Siragusa, Edward Austrian, Michael Sawyer, Tara Gibson, USA</p>	

<p>79</p>	<p>Panel: Eye-Tracking as Instructor Support in Professional Education and Training – Findings from a Cooperation Between Research and Practice Co-Chairs: Gesa Praetorius and Charlott Sellberg, Sweden</p>	<p>MAR</p>
<p>8:00-9:30 AHFE 4: FOOTHILL D</p>	<p>The ambiguous nature of visual expertise - Insights from using eye-tracking data for video-stimulated reflection in maritime piloting Andreas Edvall, Charlott Sellberg, Elin Nordenstrom, Sweden Applied cognitive task analysis (ACTA) of marine piloting in a Swedish context Cecilia Berlin, Gesa Praetorius, Sweden Transferring tacit knowledge in safety-critical systems – examples from maritime pilot training Rikard Eklund, Anna-Lisa Osvaelder, Sweden Expertise and implication for technology-enhanced assessment in professional training Charlott Sellberg, Gesa Praetorius, Anna-lisa Osvaelder, Sweden</p>	
<p>80</p>	<p>Communication of Design II Chair: Amic G. Ho, Hong Kong</p>	<p>HFCD</p>
<p>8:00-9:30 AHFE 5: FOOTHILL E</p>	<p>Artistic features and expression contents of portrait bricks in cultural ecology: Taking portrait bricks unearthed in Zhejiang, China as an example Yisha Wang, Wei Ding, China A lead user-persona approach to eliminate communication barriers among stakeholders in co-design Anran Feng, Mengye Zhou, Wanjun Li, Ziyi Wang, Weiru Zhang, Jing Chen, China XR is more than the sum of AR, VR, and MR David Yip, Hong Kong SAR China ArchiVico Digitale: A comprehensive and synergistic approach for the preservation and dissemination of local memory to strengthen identity Claudio Loconsole, Marianna Giardina, Enrica Salvatori, Italy Ways of seeing: An eye-tracking study of natural viewing behavior towards paintings Saptarshi Kolay, Bhavya Sihmar, India A review of technological innovations to promote the vulnerable population wayfinding Lusi Morhayim, Yasmin Garcia Sterling, UK</p>	
<p>81</p>	<p>Public Transportation and Safety II Co-Chairs: Lei Zeng and Benjamin Burkard, China/Germany</p>	<p>RR</p>
<p>8:00-9:30 AHFE 6: FOOTHILL F</p>	<p>A case study of the Shanghai No. 20 tram on cultural bus service design based on the AT-ONE Rule Lei Zeng, Hong Chen, China Acceptance analysis of value-creating service cooperations and extensions for mobility-on-demand solutions Mira Kern, Niklas Kluge, Benjamin Burkard, Marco Raul Soares Amorim, Nicolaj Motzer, Germany Does it press? Investigating the efficacy of an ultrasonic haptic button interface for non-visual driving applications Maher Alsamsam, Paul Fink, Justin Brown, Velin Dimitrov, Nicholas Giudice, USA Cybersecurity best practices for managing mixed fleets Xiaojian Jin, Elena Griffor, USA Driver engagement Francesco Deiana, Adria Roig, James Jackson, Cristina Periago, Clara Cabuti Ferrer, Spain Contributing factors to fatigue among high-speed train drivers: A questionnaire study in China Yanyi Li, Ziteng Wang, Qidi Zhang, Musen Kingsley Li, Wei Zhang, China</p>	

Sunday, July 23

82	Usability Evaluation II Co-Chairs: Wei-ni Hsu and Emilio Guzman, Taiwan/Ecuador	UUE
8:00-9:30 AHFE 7: FOOTHILL G1	<p>Rehabilitation of data web application design and usability evaluation for elderly users Wei-ni Hsu, Bo Liu, Yang-cheng Lin, Taiwan</p> <p>A controlled experiment using eye-tracking to evaluate the usability of the UDA-ERP system Catalina Astudillo-Rodriguez, Emilio Guzman, Patricia Margarita Ortega Chasi, Ecuador</p> <p>User experience on the telecare system menu design with handheld devices Liang-Yuan Che, Chien-Hsiung Chen, Taiwan</p> <p>Applying the Kano model to optimize the furniture in rental scenarios - an application to China case study Wei Ding, Yuting Liao, China</p> <p>The development of a cross-generational social media platform Sui-hua Ho, Ya-tzu Chang, Tzu Hsien Wu, Tzu Yu Yen, Taiwan</p> <p>Investigating the creative design strategy for H5 news based on the Octalysis Jin Bin Liu, Si Ye Chen, China</p>	
83	Simulator Training and Assessment Co-Chairs: Fausto Zapatta and Ziaul Haque Munim, Ecuador/Norway	TELS
8:00-9:30 AHFE 8: FOOTHILL G2	<p>Factors affecting perceived earthquake preparedness behavior among senior high school graduates in the Philippines Larriza Joy Carmelotes, Jasel Anne Mingua, Kyle Jerome Santos, Kyle Aleen Umayam, Joehanna Ngo, Yoshiki Kurata, Philippines</p> <p>The use of virtual reality in tourism education: Systematic review Fausto Zapatta, Catalina Astudillo-Rodriguez, Ecuador</p> <p>A review of learning analytics dashboard and a novel application in maritime simulator training Ziaul Haque Munim, Tae-eun Kim, Norway</p> <p>Simulator training meets AI: Opportunities and challenges Salman Nazir, Hasan Mahbub Tusher, Norway</p>	
84	Applied Psychology and Ergonomics on Kansei Co-Chairs: Yasushi Kyutoku and Teru Kawakita, Japan	KE
8:00-9:30 AHFE 9: PACIFIC A	<p>Depth of information processing rather than its content affects proactive behavioral intentions towards risk Yasushi Kyutoku, Mitsuru Yamashina, Masayoshi Tanishita, Hidetsugu Nanba, Satoshi Fukuda, Hiroko Shoji, Japan</p> <p>Avatar design for bullying prevention in the metaverse: Avatar appearances and the presumption of bullying Teru Kawakita, Hideaki Kanai, Japan</p> <p>Product design based on collaborative Kansei engineering Ceng-juan Wu, Tianlu Zhu, Zhizheng Zhang, Zhe Zhu, Yanqing Lan, Bo Xue, China</p> <p>A method for product form design based on user perceptual imagination and product modeling constraints Tianlu Zhu, Yajun Li, Ceng-juan Wu, Zhizheng Zhang, Yu-hui Ge, China</p>	
85	Production and Logistics Management Systems Co-Chairs: Beata Mrugalska and Krzysztof Hankiewicz, Poland	APMPC
8:00-9:30 AHFE 10: PACIFIC B	<p>Smart worker's creativity: Personal and contextual factors in manufacturing systems Beata Mrugalska, Poland</p> <p>User context of enterprise information systems for manufacturing Krzysztof Hankiewicz, Poland</p> <p>Empirical study of machine learning for intelligent bearing fault diagnosis Armin Moghadam, Fatemeh Davoudi Kakhki, USA</p> <p>Estimation of relative standard deviation related to limit of detection and limit of quantitation Fan Zhang, Jing Zhao, Xuan Zhang, China</p> <p>Comparison of consumer's risk quality for different sampling plan corresponding to adjacent sample size Jing Zhao, China</p> <p>Harmonizing the graduate attributes of mechanical and industrial engineering with the Fourth Industrial Revolution needs in automotive production Timothy Laseinde, South Africa</p> <p>Factors influencing globalization of logistics management in Nigeria Ayodeji Dennis Adeitan, Clinton Aigbavboa, Oyindamola Cynthia Olubiyo, South Africa</p>	

86	Management Intelligence Services – How to Support Managers in Challenging Tasks Co-Chairs: Freimut Bodendorf and Christian Zigel, Germany	HSSE
8:00-9:30 AHFE 11: PACIFIC C	Cross-silo federated learning in enterprise networks with cooperative and competing actors Kristina Müller, Freimut Bodendorf, Germany ErgoMate: Concept and prototype of an automated ergonomic workplace system for office environments Christian Zigel, Matthia Leyendecker, Alexander Piazza, Germany Fostering text mining with knowledge graphs: An approach to support business experts in defining domain-specific document sets Roland Zimmermann, Pascal Bratke, Ralph Blum, Germany Developing a method for data-driven insights into the customer journey to support efficient marketing resource planning Natalie Rubin, Philipp David Haan, Ralph Blum, Germany	
87	Product Design + Sustainability Co-Chairs: Julia Gritzbach and Florian Reichelt, Germany	IPID
8:00-9:30 AHFE 12: PACIFIC D	Identification of design elements in vehicle interiors for creating an appearance associated with sustainability Julia Gritzbach, Franziska Kern, Philipp Pomiersky, Wolfram Remlinger, Thomas Maier, Germany Optimisation approach for the convergence process of design and technology in automotive development Florian Reichelt, Daniel Holder, Thomas Maier, Germany Emerging materials fostering interdisciplinary collaboration in materials design Sofia Soledad Duarte Poblete, Laura Anselmi, Valentina Rognoli, Italy Design and interdisciplinarity for sustainable and innovative valorization of agro-industrial waste and residues Barbara Pizzicato, Elena Cioffi, Severina Pacifico, Mario Buono, Italy	
88	Human Factors in Artificial Intelligence and Social Computing I Co-Chairs: Abraham Sanders and Andy Bernhardt, USA	AISC
8:00-9:30 AHFE 13: PACIFIC E	Machine reading comprehension and expert system technologies for social innovation in the drug excipient selection process Evangelos Markopoulos, Chrystalla Protopapa, Finland Image caption generation of arts: Review and outlook Baoying Zheng, Fang Liu, China Automated visual story synthesis with character trait control Ruohua Li, Yuetian Chen, Bowen Shi, Peiru Liu, Mei Si, USA Towards a proper evaluation of automated conversational systems Abraham Sanders, Mara Schwartz, Albert Chang, Shannon Briggs, Jonas Braasch, Dakuo Wang, Mei Si, Tomek Strzalkowski, USA Does imageable language make your Tweets more persuasive? Andy Bernhardt, Tomek Strzalkowski, Ning Sa, Ankita Bhaumik, Gregorios Katsios, USA Emotional analysis of candidates during online interviews Alperen Sayar, Tuna Çakar, Tunahan Bozkan, Seyit Ertuğrul, Mert Güvençli, Turkey Emotion recognition from speech via the use of different audio features, machine learning and deep learning algorithms Tuna Çakar, Alperen Sayar, Tunahan Bozkan, Seyit Ertuğrul, Fatma Gümüç, Turkey	
89	Human Factors for Apparel and Textile Engineering II Co-Chairs: Cristina Carvalho and Sayuki Kondo, Portugal/Japan	HFATE
8:00-9:30 AHFE 14: PACIFIC F	A pilot study of posture change when wearing high-heeled shoes and pantyhose Tamaki Mitsuno, Sayuki Kondo, Japan Human comfort factors towards 3D digital fashion design Wen Wang, China Experimental data management for the panel joints of the naval emergency shuttle Alexandra Gabriela Ene, Mihaela Jomir, Constantin Jomir, Carmen Mihai, Sorin Mihai Radu, Romania Biodeys: A new approach in textile dyeing and printing technological processes Cristina Carvalho, Carla Costa Pereira, Gianni Montagna, Carlos Manuel Figueiredo, Portugal	

REFRESHMENTS: 9:30 - 10:00 • ROOM: SoMA (2ND LEVEL)

91	Neurotechnology for Human Machine Symbiosis Co-Chairs: Stephen Fairclough and Frédéric Dehais, UK/France	CN
10:00-12:00 AHFE 1: FOOHILL A	<p>Spectral scanning in EEG data unveils the role of frontal midline theta activity during inattention deafness episodes Frédéric Dehais, Sebastien Scannella, Daniel Callan, Raphaelle Roy, France</p> <p>Limitations on the use of eye-tracking data to understand operator awareness Randall Mumaw, Dorrit Billman, USA</p> <p>Cognitive engineering in training: Monitoring and pilot-automation coordination in complex environments Dorrit Billman, Barth Baron, Jr., Randall Mumaw, USA</p> <p>Adaptive experimental design and generative modeling for neuroergonomics Ryan McKendrick, USA</p> <p>Multimodal learnability assessment of a touch-based large area display with eye tracking and optical brain imaging Ezgi Cigdem Şahin, Dilan Dığba Özmenoğlu, Ahmet Paker, Yasin Kaygusuz, Hakan Aydemir, Cengiz Acartürk, Murat Perit Çakır, Turkey</p> <p>Measuring mental workload via evoked cortical potentials to rapidly presented pure auditory tones Stephen Fairclough, Felix Schroeder, UK</p> <p>Demonstration of neuroergonomics in adaptive interventions during simulated robotic surgery tasks Denny Yu, USA</p>	
92	Human-Centered Ergonomics Research I Co-Chairs: Xuandong Zhao and Qianqian Lin, China	ED
10:00-12:00 AHFE 2: FOOHILL B	<p>Optimization of interior design process on the basis of human factors standard Qianqian Lin, Yuanbo Sun, Jing Gao, China</p> <p>The influence of member matching degree on interdisciplinary team collaboration efficiency Xuandong Zhao, Pan Wenjuan, Pang Huimin, Zihou Zhou, Yuehua Liu, Wankun Feng, China</p> <p>Exploration of AI aided design path for graphic designers Weiming Liu, Ying Zhao, Guoer Wang, Li Yang, China</p> <p>Design of integral kitchen CMF evaluation system based on virtual reality Jiawei Tang, Yuanbo Sun, Huayu Zhang, Zhiyuan He, China</p> <p>Visual analysis of the progress, hot spots and trends of service design research based on bibliometrics Chenxi Wang, Fan Zhang, Yuanbo Sun, China</p> <p>Service design of virtual decoration based on human factors requirements Zhang Haoran, Yuanbo Sun, Song Yuqing, Chen Siwan, Xu Maoyuan, China</p> <p>Symbols in product semantic of aging design research based on eye tracking methodology Jiqing Fu, Jiajing Zhang, Zihao Wang, China</p>	
93	Product Design Co-Chairs: Thomas Hofmann and Jiahao Cai, Germany/Taiwan	ED
10:00-12:00 AHFE 3: FOOHILL C	<p>An approach to designing an ergonomic handheld 3D laser scanner Thomas Hofmann, Deike Hessler, Germany</p> <p>How to design an HMI for users that do not exist yet Thomas Hofmann, Svenja Knothe, Germany</p> <p>Envision - testing platform for user-centered visualization and interaction concepts Thomas Hofmann, Christian Blessmann, Deike Hessler, Germany</p> <p>The development of process-based customized service on insole design for high-heeled shoes Zun-Hwa Chiang, Wei-Wei Su, Ming-Hsien Chuang, Taiwan</p> <p>The value co-creation service mode design of online technology market Wenling Xu, Yun Wang, China</p> <p>Investigation of ergonomic pipette design: A systematic review Melissa Afterman, Carisa Harris-Adamson, Alan Barr, Meg Honan, USA</p> <p>Analysis of the handle cross-section design of cordless drill screwdriver Hao Jhe Li, Johan Chang, Taiwan</p>	
94	Safety and Risk Management Co-Chairs: Toni Waeﬂer and Lucie Kocürková, Switzerland/Czech Republic	SMHF
10:00-12:00 AHFE 4: FOOHILL D	<p>sWafety: A complementary low-threshold safety management process Sandra Schenkel, Guri Medici, Sven Staender, Toni Waeﬂer, Switzerland</p> <p>Barriers to near miss management systems adoption in the industrial sector: Results from an exploratory survey in Italy Fabiana Tornese, Maria grazia Gnoni, Giulio Paolo Agnusdei, Italy</p> <p>On the development of protective devices for bending press Ahn Dung Ngô, Tony Venditti, Phuong Tran Nguyen Duy, Canada</p> <p>Fatigue management in ATM setting limits for the implementation of the 373/2017 prescriptive approach Fabrice Drogoul, Philippe Cabon, Belgium</p> <p>Exposure to non-ionizing radiation of solar origin: Measurements in Patagonia Rodrigo Dominguez, Joan Toro, Enrique Calderón, Sebastian Amaro, Claudio Acuña, Chile</p>	

<p>95</p>	<p>Vehicle Automation II Co-Chairs: Sarah Schwindt and Evangelia Latsa, Germany/Greece</p>	<p>RR</p>
<p>10:00-12:00 AHFE 5: FOOTHILL E</p>	<p>A research approach for studying the a priori acceptance of autonomous passenger transportation towards sustainable urban mobility planning Anna Antonakopoulou, Eleni Vlahogianni, Giannis Karaseitanidis, Eleni Patatouka, Evangelia Portouli, Angelos Amditis, Odysseas Raptis, Evangelia Latsa, Greece</p> <p>Development of scenario-based approach aided by key PSFs to design of new interface of autonomous vehicles monitoring system: A case study Hirotaka Aoki, Nozomi Kobayashi, Mizuki Fuke, Tomonori Yasui, Japan</p> <p>Situational awareness in the context of automated driving - adapting the situational awareness global assessment technique Sarah Schwindt, Paula Von Graevenitz, Bettina Abendroth, Germany</p> <p>Exploring use cases and user perception of a proactive voice assistant in automated vehicles Lesley-Ann Mathis, Kathrin Werner, Harald Widlroither, Germany</p> <p>Exploring proactivity in human-vehicle interaction: Insights for proactive interaction design Xiaohua Sun, Li Jinglu, China</p> <p>Comprehensive system of post-accident care in the Czech Republic - A qualitative study David Červinka, Barbora Sulíková, Lucie Vondrackova, Eva Adamovska, Czech Republic</p>	
<p>96</p>	<p>Human Factors in Virtual Environments II Co-Chairs: Shannon Briggs and Lucie Denisart, USA/France</p>	<p>HFGD</p>
<p>10:00-12:00 AHFE 6: FOOTHILL F</p>	<p>Predicting presence using environment-activated motion in immersive virtual reality Andrew Dilanchian, Michael Prevratil, USA</p> <p>Active and passive machine learning predictors to build adaptive virtual environments Timothy McMahan, Thomas Parsons, USA</p> <p>A cognitive immersive room for intelligence analysis scenarios (CIRIAS) Shannon Briggs, Jonas Braasch, Tomek Strzalkowski, Bryan Burns, Samuel Chabot, Abraham Sanders, Erfan Al-Hossami, USA</p> <p>Human factors in battery manufacturing: Using virtual reality for education Lucie Denisart, Diana Zapata Dominguez, Romain Lelong, Aubin Leclere, Alejandro Franco, Emilie Loup-Escande, France</p> <p>Co-design of service robot applications using virtual reality Yate Ge, Yuanda Hu, Xiaohua Sun, China</p> <p>Validation of hyper-reoriented walking in an infinite virtual maze Marino Menozzi, Chisato Braun, Switzerland</p>	
<p>97</p>	<p>Design Strategy and User Experience I Co-Chairs: Lorena Olmos Pineda and Xinyue Gong, Mexico/China</p>	<p>UUE</p>
<p>10:00-12:00 AHFE 7: FOOTHILL G1</p>	<p>Correlation between dominant sensory mechanisms and emotional responses in virtual products Lorena Olmos Pineda, Jorge Gil Tejeda, Mexico</p> <p>Design of smart subway travel products based on scene theory Huai Cao, Xinyue Gong, China</p> <p>Quality function deployment to combine with service design to optimize the English vocabulary learning app's usage experience Shuo Fang Liu, An Yu Su, Yi Chieh Wu, Meng Hsuan Lee, Taiwan</p> <p>Research hotspots and trend analysis of user experience design for healthcare service system Xinyue Zhang, China</p> <p>Experience compelling map: An auxiliary tool for user experience design in physical retail Paulo Eduardo Hauqui Tonin, Elton Moura Nickel, Brazil</p> <p>An automatic layout method of children's book covers based on design aesthetics Zhang Yiran, Xiaojun Liu, China</p> <p>Construction of key index system of product usability design based on user operation behavior -- An example of the intelligent ultra-cryogenic refrigerator Zhāng Píng, Hanyu Wang, Haokun Tian, Ruzhong Li, China</p>	

Sunday, July 23

98	Human Factors in Energy Co-Chairs: Thomas Ulrich and Marten Bloch, USA/Norway	ENERGY
10:00-12:00 AHFE 8: FOOTHILL G2	<p>Overview of displays in nuclear control rooms: A state of practice review Alexandra Fernandes, Alf Ove Braseth, Marten Bloch, Norway</p> <p>The customer experience of energy services Claas Digmayer, Nina Rußkamp, Eva-Maria Jakobs, Germany</p> <p>Human factors for advanced reactors Ronald Boring, USA</p> <p>Energy cooperatives as energy transition actors Nils Hellmuth, Eva-Maria Jakobs, Germany</p> <p>Optimization of turbine generator through vibration damping for maximum service life in power plants Steven Vusmuzi Mashego, Timothy Laseinde, South Africa</p> <p>A case study on the implementation of maintenance strategies at an energy generation facility Timothy Laseinde, Steven Vusmuzi Mashego, South Africa</p> <p>Building information modeling approach for design and operation of electrical substations integrated with Geographic Intelligence Systems (GIS) Alexandre Cardoso, Gerson Lima, Edgard Afonso Lamounier, Andre Luis De Araujo, Arnaldo Rosentino, Ana Cristina De Freitas Marotti, Ricardo Oliveira Rocha, Brazil</p> <p>Evaluation of consumption of electricity in residential buildings in Agbani, Nkanu west local government area of Enugu State, Nigeria Godwin Oseghale, Augustine Okechukwu, Clinton Aigbavboa, Nigeria</p>	
99	Human Factors in Learning Co-Chairs: Oliwia Karasek and Agnes Peeters, Germany/Belgium	TELS
10:00-12:00 AHFE 9: PACIFICA	<p>Conceptualizing an academic teaching and learning laboratory for systems engineering Oliwia Karasek, Yusuf Arslanparcasi, Germany</p> <p>Pedagogical use of technologies for children with specific educational learning needs. A training strategy for teachers Noemí Suárez Monzón, Vanessa Gómez Suárez, Janio Jadán-Guerrero, Karina Elizabeth Delgado Valdivieso, Ecuador</p> <p>Gender influence on students' curriculum in higher education Agnes Peeters, Ines De Clercq, Belgium</p> <p>Students' perceived workload, stress, fatigue and performance during the remote learning setup: A semester-long study Lorelie Grepó, Philippines</p> <p>The implementation of immersive technologies-artificial intelligence (AI) in aviation collegiate education: A simple to complex approach Dimitrios Ziakkas, Abner Del Cid Flores, Hans Cornelius Natakusuma, USA</p> <p>Categorizing empathy traits Ssu Min Chang, Johan Chang, Taiwan</p>	
100	Human Factors in Software and Systems Engineering II Co-Chairs: Reem Hassounah and Wenjuan Zhang, Saudi Arabia/China	HFSSE
10:00-12:00 AHFE 10: PACIFIC B	<p>A data retrieval model for distributed heterogeneous pharmacy information sources Suad Alramouni, Reem Hassounah, Saudi Arabia</p> <p>Short-time taxi demand prediction based on transformer-LSTM in integrated transportation hub Wenjuan Zhang, Xiujie Li, Bin Zhang, Haozhe Yang, Guangbin Wang, China</p> <p>Hackathon-based software development: Lessons learned from an internal corporate hackathon Georgios Christou, Cyprus</p> <p>Improving internet advertising using click – Through rate prediction Rakesh Gudipudi, Sandra Nguyen, Doina Bein, Sudarshan Kurwadkar, USA</p> <p>Crowdsourcing for second language learning Abdelrahman Abounegm, Nursultan Askarbekuly, Magomed Magomedov, Manuel Mazzara, Egypt</p>	

101	Fidelity, Complexity, Scale, and Scope: Understanding Nuclear Control Room Human Factors Across Different Levels of Examination Co-Chairs: Niv Hughes Green and Kelly Dickerson, USA	HFSIM
10:00-12:00 AHFE 11: PACIFIC C	Evolution of workload demands of the control room with plant technology Jinchao Lin, Gerald Matthews, Jacquelyn Schreck, Kelly Dickerson, Niv Hughes, USA Characterizing complexity: A multidimensional approach to digital control room display research Kelly Dickerson, John Grasso, Heather Watkins, Niv Hughes, USA Evaluation of a basic principle SMR simulator for experimental human performance research studies Claire Blackett, Norway Using differing levels of fidelity in simulations to explore assumptions about communicating hazards: the challenge of challenging assumptions S. Camille Peres, Joseph Hendricks, USA Behavioral indicators - an approach for assessing nuclear control room operators' excessive cognitive workload? Per Øivind Braarud, Giovanni Pignoni, Norway Transfer of nuclear maintenance skills from virtual environments to reality - Toward a methodological guide Valérian Faure, Jean-Rémy Chardonnet, Daniel Mestre, Fabien Ferlay, Michaël Brochier, Laurent Joblot, Frédéric Merienne, Claude Andriot, France	
102	Walking the Tightrope: Balancing Benefits for all Stakeholders in the Digital Age Co-Chairs: Christine Leitner and Christoph Glauser, UK/Switzerland	HSSE
10:00-12:00 AHFE 12: PACIFIC D	How to empower digitally vulnerable people? Co-designing policies and services with end-users Kristina Reinsalu, Estonia Why more than half of digital contents never meet a user Christoph Glauser, Switzerland New era leadership for liminal times and beyond Laura C. Anderson, Jade Nguyen Strattner, USA New frameworks for digital services - A regulatory perspective Christine Leitner, Christian Stiefmueller, UK Central bank digital currencies - Design choices and policy implications Christian Stiefmueller, UK Towards a co-creative approach to interactively develop digital services Nina Hieber, Maximilian Feike, Veronika Prochazka, Germany	
103	Human Error Co-Chairs: Mamiko Murahashi and Roger Lew, Japan/USA	HERRP
10:00-12:00 AHFE 13: PACIFIC E	Japanese practical concepts on human error prevention: 3H, 4M, and 5S Toru Nakata, Japan What fatality and Prescott Way causal factors are revealed in the July 23, 2013, Deployment Zone News Conference? Fred Schoeffler, Joy A. Collura, USA Method for enhancing evaluation of the human error probability in disaster risk assessment for industrial plants Mamiko Murahashi, Yusaku Okada, Japan	
104	Digital Transformation Co-Chairs: Taishi Kamiya and Christian Vocke, Japan/ Germany	CIE
10:00-12:00 AHFE 14: PACIFIC F	Facilitating knowledge creation in innovation activities with boundary media Taishi Kamiya, Japan Hybrid Intelligence - how to gain competitive advantages and process innovations in challenging times Christian Vocke, Wilhelm Bauer, Carmen Constantinescu, Daniela Popescu, Germany X Thinking in the experience economy era: 23 personas that identify Generation Z interaction qualities Xin Xin, Shuping Sun, Bowen Li, Zhouyang Li, Mingyang Zhang, Feng Huang, Michael T Lai, Rongrong Zhang, Wei Liu, China The role of the digital coach in the context of digital transformation Martin Kröll, Kristina Burova-Keßler, Germany	
12:00-13:00 • ENJOY LUNCH AT THE RESTAURANT OF YOUR CHOICE		

106	Digital Human Modeling and Applied Optimization Chair: Sofia Scataglini, Belgium	DHMAO
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">13:00-15:00 AHFE 1: FOOTHILL A</p>	<p>Movement description method and application for dance of Chinese traditional drama Yihang Du, Zhang Yao, Niu Ke, China</p> <p>Considerations when applying the BioRID II dummy used in crashworthiness tests to 50 percentile of Korean, Chinese, and Japanese height Woojin Choi, Siyoung Choi, Ka Sanghoon, Kim Sunwoong, Sohn Moonjun, South Korea</p> <p>Joint estimation for 3D human body scans in arbitrary postures using OpenPose Daniel Park, Matthew Reed, USA</p> <p>A simplified human body model for assisting electric bicycle design Xuguang Wang, Junfeng Peng, France</p> <p>Assessing ergonomics on cobot for an optimized integrated solution in early phase of product and process design Valerio Cibrario, Manuela Vargas Gonzalez, Cesare Fantuzzi, Maria Pia Cavatorta, Enrica Bosani, Daniel Dengel, Meike Schaub, Niclas Delfs, Elin Fägerlind, Alessandro Bagalà, Domenico Spensieri, Italy</p> <p>Effects of back postures on driving positions as measured with DHMs Mac Reynolds, Sofia Scataglini, USA/Belgium</p> <p>Analysis of changes in spinal and pelvic parameters when optimally seated on an automotive seat compared to standing Woojin Choi, Siyoung Choi, Ka Sanghoon, Kim Sunwoong, Sohn Moonjun, South Korea</p>	
	107	Design Thinking to Create a Happier Life II Co-Chairs: Shuichi Fukuda and Yoshifusa Matsuura, Japan
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">13:00-15:00 AHFE 2: FOOTHILL B</p>	<p>Using virtual reality to explore the effects of Feng Shui on physiology and psychology Cheng Hsun Peng, I Wen Yen, Meng-Cong Zheng, Taiwan</p> <p>Design strategies for museum digital games based on emotional interaction Kang Xin Yan, Luo Hong, China</p> <p>Building for joy in the digital world Rachel Siow Robertson, Jennifer George, Matthew Kuan Johnson, UK</p> <p>Innovative dining experience realized by developing naked-vision floating projection Jia-Ming Day, Yu-Hsuan Lin, Shun Wen Chao, Taiwan</p> <p>StressButton: Using connectivity of everyday objects for children learning to cope with stress Cheng Yao, Pinhao Wang, Zhengke Li, Jing Li, Xinyi Li, Jun Hu, Barakova Emilia, Fangtian Ying, Wenjie Xu, China</p> <p>Color preference of large cruise catering space based on eye tracking technology Wang Jinjin, China</p>	
	108	Human-Centered Ergonomics Research II Co-Chairs: Yichen Zeng and Jiaxin Zhou, China
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">13:00-15:00 AHFE 3: FOOTHILL C</p>	<p>Design of interactive service for stray cat adoption based on shared platform Xin Yueming, Mao Yue, Fang Liyuan, Yang Yang, China</p> <p>Strategies to improve the student engagement of vocational college class based on design thinking Qianqian Lin, Yuanbo Sun, Zhenghong Liu, China</p> <p>Design strategy of vehicle HMI VR prototyping tool based on Kano Model Huayu Zhang, Yuanbo Sun, Jiawei Tang, Gao Jin, Wenhan Liu, Zhiyuan He, China</p> <p>Vehicle interaction design strategy based on human-computer interaction carrier Zhiyuan He, Yuanbo Sun, Huayu Zhang, Jiawei Tang, Xiao Du, China</p> <p>Analysis of the interactivity of font design application in user interface Yichen Zeng, Chao Zheng, Xinlei Zhang, Bingkun Qiu, Xinhao Zhan, Li Cheng Xie, China</p> <p>Stimulating everyday creativity: Mediating role of new tools in DIY craft Jiaxin Zhou, Duoduo Zhang, China</p> <p>Design strategy of digital outdoor study manual based on children's learning behavior guidance Yue Li, Ying Zhao, Jing Mei, Li Yang, China</p>	

<p>109</p>	<p>Innovations in Medical Devices Co-Chairs: Armagan Albayrak and Yanyu Liu, Netherlands/China</p>	<p>EHMD</p>
<p>13:00-15:00 AHFE 4: FOOTHILL D</p>	<p>Design of children's wearable moxibustion instrument based on emotional design theory Yanyu Liu, Hong Chen, China</p> <p>Patient journey mapping: A design tool to develop and improve medical devices and health services Armagan Albayrak, Richard Goossens, Marijke Melles, Netherlands</p> <p>Human-centered design for patient participation: perspectives from patients and professionals and implementation in care systems Marijke Melles, Netherlands</p> <p>Interface design for 360° real scenes-based virtual reality system with pedaling devices Poyen Hsu, Chien-Hsu Chen, Yi Xiang Su, Taiwan</p> <p>Improvement design of household medical nebulizer for children based on ergonomics Shiyi Zhou, Jiajun Wei, Zhijuan Zhu, China</p> <p>Personalized stress detection system using physiological data from wearable sensors Vinh Pham, Yongho Lee, Nahyun Lee, Jiwoo Lee, Tai-Myoung Chung, South Korea</p>	
<p>110</p>	<p>Social Aspects of Business Management and Efficiency Co-Chairs: Henrijs Kalkis and Zenija Roja, Latvia</p>	<p>SOE</p>
<p>13:00-15:00 AHFE 5: FOOTHILL E</p>	<p>Industry 4.0 and new forms of work organization: An analysis of the perspective of decision-makers from an automotive manufacturer Liliana Cunha, Sarah Maggioli, Daniel Silva, Ruben Moutinho, Catarina Correia, Ana Correia de Barros, Portugal</p> <p>Exploration on the method of optimizing figure training under the guidance of ergonomics Yizhu Lin, Xiaomei Chen, China</p> <p>Bus drivers' work environment during the COVID-19 pandemic – physical and social barriers Anna Anund, My Weidel, Kristina Larsson, Martina Odéen, Christina Stave, Sweden</p> <p>The effect of individual ability differences and personality traits on social comparison Minhui Yuan, Xiaokun Du, Ruifeng Yu, Xinran Xu, China</p> <p>Evaluation method of employee's motivation to participate in safety activities using daily work report Nanako Yokozawa, Yusaku Okada, Japan</p>	
<p>111</p>	<p>Design Strategy and User Experience II Co-Chairs: Chenlu Li and Junhui Sun, China</p>	<p>UUE</p>
<p>13:00-15:00 AHFE 6: FOOTHILL F</p>	<p>Interaction design strategies for cultural relic information in a mixed reality context Chenlu Li, Songhua Gao, China</p> <p>Knowledge visualization of earthquake: Impact of design format on readers' perception and understanding Ying Chi Hsu, I Wen Yen, Meng-Cong Zheng, Taiwan</p> <p>Studying Tian Hock Keng's architectural heritage through the lens of interaction through digital design Luo Hong, Kang Xinyan, Li Sheng, Zhou Yangmengliu, China/Malaysia</p> <p>Application status and progress of analytic hierarchy process in design research: Bibliometric analysis based on Citespace Junhui Sun, China</p> <p>Analyzing social presence factors in experience design of online learning Li Ren, Xiaodong Gong, Yushun Liu, Qian Gong, China</p> <p>Exploring the design of campus directional sign through wayfinding behavior in virtual environment Ting Chun Liao, Ching I Chen, Meng-Cong Zheng, Taiwan</p> <p>Design of the living room based on the survey of children's parent-child families - take Shanghai as an example Ezaes Rashad Sultan Alazazi, Linong Dai, Saudi Arabia</p>	

112	Health and Healthcare Co-Chairs: Ricardo Vigário and Sebastian Hoose, Portugal/Germany	SYSI
13:00-15:00 AHFE 7: FOOTHILL G1	<p>Health communication: An investigation on emoji, perceived visual informativeness and social media engagement Tingyi S. Lin, Yue Luo, Taiwan</p> <p>Biofeedback posture training for adolescent idiopathic scoliosis patient Yiu Wong, Joanne Yip, Mei-chun Cheung, Hong Kong SAR China</p> <p>5G remote control in failure situations of transport robots in challenging hospital environments Sebastian Hoose, Christian Jestel, Jan Finke, Thomas Kirks, Germany</p> <p>Validation of a rehabilitation platform for visuomotor perceptual and cognitive stimulation Pedro Fonseca, Ricardo Vigário, Ana Teresa Videira Gabriel, Isabel L. Nunes, Carla Quintão, Cláudia Quaresma, Portugal</p> <p>The use of lower limb exoskeletons to reduce load during orthopedic surgeries Catarina Santos, Ana Teresa Videira Gabriel, Cláudia Quaresma, Isabel L. Nunes, Portugal</p> <p>Conversational agent automation for patients after cardiothoracic surgery based on clinical team experience and behavior change theory Ana Martins, Isabel L. Nunes, Luís Velez Lapão, Ana Londral, Portugal</p>	
113	Designing for Inclusion in the Cultural Heritage Chair: Valeria Minucciani, Italy	DI
13:00-15:00 AHFE 8: FOOTHILL G2	<p>The emotional impact of cultural heritage on the public: Physiological and psychological effects of multisensorial experiences Gianluca D'Agostino, Hilary Serra, Claudio Zavattaro, Italy</p> <p>Technology as a tool to study visitor behaviour in museums: Positioning and neuropsychological detection to identify physical & cognitive barriers Michela Benente, Valeria Minucciani, Paolo Dabove, Italy</p> <p>Neurosciences and museum - Museum visit as inclusive, embodied and transformative experience Michela Benente, Valeria Minucciani, Italy</p> <p>Enhancing inclusive experience in museums: Results from a field study Alessia Brischetto, Ester Iacono, Claudia Becchimanzi, Francesca Tosi, Italy</p>	
114	Human Factors in Virtual Environments I Co-Chairs: Scott Mackenzie and Houran Zeng, Canada/China	HFGD
13:00-15:00 AHFE 9: PACIFICA	<p>A visual analysis of VR user experience based on bibliometrics background of the selection Xinyue Yi, Zhizheng Liu, China</p> <p>Rehabilitation behavior intention of upper extremity stroke patients by IMVT Wen-chi Chen, Chih-fu Wu, Taiwan</p> <p>An immersive virtual simulation to assess the effects of engaging tasks on situational safety awareness Ebo Kwegyir-Afful, Janne Heilala, Jussi Kantola, Finland</p> <p>Comparison of one-handed and two-handed text entry in virtual reality using handheld controllers Ali Hassan, Scott Mackenzie, Gunho Sohn, Canada</p> <p>An analysis of user's perceptual preferences in virtual reality home interface design Houran Zeng, Lijuan Zhao, Jing Zhang, Xiaoke Li, Wei Xu, China</p> <p>Human perception of unreferenced obstacle size and difficulty of crossing in virtual reality Seonghyeok Park, Shuping Xiong, South Korea</p>	
115	Designing Future Service Business: How to Shape Future Value Creation Co-Chairs: Rainer Nägele and Jens Neuhuettler, Germany	HSSE
13:00-15:00 AHFE 10: PACIFIC B	<p>Towards a metamodel for service-oriented value creation Anne Sophie Tombeil, Lukas Block, Germany</p> <p>Redefining SME cooperation to foster a value-creation-oriented approach and propel forward cutting-edge AM services in the medical market Adriana Rodriguez Casamayor, Sibylle Hermann, Hans Nopper, Thomas Lück, Germany</p> <p>Strategic positioning in service-oriented business ecosystems: A strategic role model approach Gerrit Hoeborn, Yannick Becerra, Frederic Weingarten, Frederik Winkens, Germany</p> <p>New digital ways of creating value in retail Thomas Meiren, Ilyas Khan, Germany</p> <p>Technology - competence - learning within HR analytics solutions - a holistic approach to enable digital transformation and value creation Bernd Dworschak, Alexander Karapidis, Germany</p> <p>Innovation labs as value co-creation platforms in research ecosystems Lena Ahner, Benedikt Wohlmuth, Nicole Gladilow, Germany</p>	

116	Concepts and Applications for the Metaverse Co-Chairs: Leonhard Glomann and Oliver Korn, Germany/UK	HCMDE
13:00-15:00 AHFE 11: PACIFIC C	<p>Avatar construction methods and applications in the metaverse Ying Dong, China</p> <p>Perceptions on digital, virtual environments and the metaverse. An exploratory study with younger users Oliver Korn, Matteo Zallio, UK</p> <p>Predicting factors influencing online gaming towards effective decision making among Filipinos: A structural equation modeling approach Bianca Mercy Cinco, Crissen Ann Ico, Franz Jmarc Tabafunda, Kyla Louise Uy, Yoshiki Kurata, Philippines</p> <p>Designdao - concept of a decentralized autonomous organization for managing human-centered design Leonhard Glomann, Germany</p> <p>The impact of artificial intelligence and machine learning on visual communication design Amic Ho, Ruth Chau, Hong Kong SAR China</p>	
117	Human Factors in Engineering and Health Co-Chairs: Tamaki Mitsuno and Irina Kurnikova, Japan/Russia	HIBEA
13:00-15:00 AHFE 12: PACIFIC D	<p>A pilot study of the effect of bathing time on thermal sensation to get a good night's sleep Tamaki Mitsuno and Sayaka Moriya, Japan</p> <p>Methods of computer simulation in the development of technology for the functional assessment of the state of the liver in patients with metabolic disorders Irina Kurnikova, Shirin Gulova, Guzal Akhmadullina, Natalia Danilina, Ikram Mokhammed, Russia</p> <p>Is it possible to use Kinect sensor for lying position rehabilitation exercise? Kinect V2 versus Azure Kinect Yehua Shi, Xiaoyi Wang, Cathy Lau, Kai-yu Tong, Hong Kong SAR China</p> <p>Sitting posture recognition for smart chair Ren-jieh Kuo, Chih-wen Shih, Chong-hao Wang, Taiwan</p> <p>VIS-NLP: Vaccination Inventory System for justified user using Natural Language Processing Minh Phuc Vu, Le Trung Thanh, Satyam Mishra, Oni Damilola Igbagbo, Vietnam/India</p> <p>Detecting stroke in human beings using machine learning Damilola Oni, Le Trung Thanh, Satyam Mishra, Vu Minh Phuc, Nigeria</p>	
118	Innovation During Start-Up and Entrepreneurship Co-Chairs: Serkan Güneş and Toshiya Sasaki, Turkey/Japan	CIE
13:00-15:00 AHFE 13: PACIFIC E	<p>An enhanced version of the business model canvas for risk management and business continuity Evangelos Markopoulos, Victoria Neumer, Hannu Vanharanta, Finland</p> <p>Evaluation of creative designer roles in terms of entrepreneurial competences Serkan Güneş, Turkey</p> <p>How to set up design skills in IT companies Toshiya Sasaki, Japan</p> <p>Comparisons of kinesiology tapes: Raw materials, fabric structure, physical strength, and comfort properties Kamrul Hasan, Ameersing Luximon, Yan Luximon, Hong Kong SAR China</p>	

119	Methodology and Technology for Mental and Emotional States Assessment During Naturalistic and Human-Machine Interactions Chair: Gianluca Borghini, Italy	CN
13:00-15:00 AHFE 14: PACIFIC F	<p>Driver monitoring during the use of automation: Identification of sadness and its regulation using haptic stimulation Florence Mazeret, Alexandra Fort, Helene Tattegrain, Daniel Ndiaye, Bertrand Richard, Christophe Jallais, France</p> <p>Interpersonal physiological synchrony in skin conductance when attending to a pitch at a festival Ivo Stuldreher, Erik Van Der Burg, Sebastien Velut, Jan Van Erp, Alexander Toet, Liesbeth Zandstra, Haruka Hiraguchi, Maarten Hogervorst, Demi Van Os, Anne-Marie Brouwer, Netherlands</p> <p>Guidelines for artificial intelligence in air traffic management: A contribution to EASA strategy Matteo Cocchioni, Stefano Bonelli, Carl Westin, Ana Ferreira, Nicola Cavagnetto, Italy</p> <p>Multimodal characterization of mental fatigue on professional drivers Andrea Giorgi, Vincenzo Ronca, Alessia Vozzi, Pietro Aricò, Gianluca Borghini, Luca Tamborra, Iliaria Simonetti, Simone Sportiello, Marco Petrelli, Rodrigo Varga, Marteyn Van Gasteren, Fabio Babiloni, Gianluca Di Flumeri, Italy</p> <p>Teamwork objective assessment through neurophysiological data analysis: A preliminary multimodal data validation Gianluca Borghini, Vincenzo Ronca, Pietro Aricò, Gianluca Di Flumeri, Andrea Giorgi, Stefano Bonelli, Laura Moens, Lidia Castagneto Gissey, Maria Irene Bellini, Giovanni Casella, Fabio Babiloni, Italy</p> <p>EEG assessment of driving cognitive distraction caused by central control information Yan Zhao, Xiaonan Yang, Yahui Wang, Wannu Wei, Heng Zuo, Yuan Yu, Yan Zhao, China</p> <p>Predicting granular changes in mental workload during simulated search and rescue teleoperation task Denny Yu, Jingkun Wang, Wink Bennett, Chris Stevens, USA</p>	
REFRESHMENTS: 15:00 - 15:30 • ROOM: SoMA (2ND LEVEL)		
121	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies III Co-Chairs: Youji Kohda, Yasunobu Ito and Takuichi Nishimura, Japan	HSSE
15:30-17:00 AHFE 1: FOOTHILL A	<p>Knowledge structuring of skilled sports trainers - for correct movement to prevent disability and promote progress Wataru Sato, Aoi Yamamoto, Naoki Koyama, Sayuri Kumagai, Koki Ijuin, Chiaki Oshiyama, Tsutomu Fujinami, Takuichi Nishimura, Japan</p> <p>Visualization of nursery teacher's tacit knowledge using knowledge structuring - For efficient acquisition of childcare skills Chiaki Oshiyama, Ichiro Ishiwata, Takuichi Nishimura, Japan</p> <p>Effects of imaging cooking behaviors on cooking intentions of university students living alone Takahiro Asaeda, Munenaga Koda, Japan</p> <p>System development of motor imagery BCI: An approach from the human side Akihiro Kato, Masami Hashimoto, Chiaki Oshiyama, Takuichi Nishimura, Japan</p>	
122	Educational Design Co-Chairs: Cristina Salvador and Jose Silva, Portugal	ED
15:30-17:00 AHFE 2: FOOTHILL B	<p>Ergonomics in classroom furniture for primary school children in Vietnam Cristina Salvador, Tuong Quyen Vu, Portugal</p> <p>Anthropometric-based school furniture design for Ethiopian secondary school students Samuel Mekonnen, Tebello Pusetso, Hui Lyu, Ugwueke Emmanuel, China</p> <p>Mapping beyond the horizon Jose Silva, Portugal</p> <p>Stories in a shoe box - Entangled narratives of nature Jose Silva, Tiago Navarro Marques, Portugal</p> <p>Design of spherical handle for children's electric toothbrush in order to improve grip comfort and stability Xinyue Zhuang, Tiancong Wang, Zixuan Zhang, Haining Wang, China</p> <p>Analysis of children's sitting posture status and influencing factors Huimin Hu, Anna Hao, Ling Luo, Wenlei Niu, Jianglan Chen, China</p>	

<p>123</p>	<p>Smart Products and Services Co-Chairs: Ester Iacono and Ruolei Yu, Italy/China</p>	<p>ED</p>
<p>15:30-17:00 AHFE 3: FOOTHILL C</p>	<p>Research for health system design under digital intelligent era Fei Wang, Cong Gu, China</p> <p>User interaction decisions of smart home products under the influence of situational differences - a case study of home lighting products Yuwei Wu, Junjie Zhang, China</p> <p>Ergonomics and design: Development of a “next generation” NICU portable ventilator Ester Iacono, Alberto Cirulli, Francesca Tosi, Italy</p> <p>Future information input mode and case study of intelligent operation cabin of construction machinery Dongxinyi Li, Jun Yi, China</p> <p>Achieving personalized wrist training: Apply human factors in the control strategy of rehabilitation robot Ruolei Yu, Weiwei Yu, Luying Xu, Yasheng Chen, Donglai Lu, Jin Zhi, Abderraouf Benali, China</p> <p>Future companion intelligent products Xiaoya Wang, Yun Wang, China</p>	
<p>124</p>	<p>Health Training and Education Co-Chairs: Wilhelmus Gommeren and Shannon Clark, UK/USA</p>	<p>EHMD</p>
<p>15:30-17:00 AHFE 4: FOOTHILL D</p>	<p>The impact of prevalent behavioural mimicry in adolescents on disease prevention and maintenance of healthy behavioural activation Xiaotong Li, Ao Jiang, China</p> <p>Instructions for use – quick and lean artwork updates for agile usability testing Ana Cristina Barbosa Medeiros, Wilhelmus Gommeren, UK</p> <p>A virtual training system based on human information processing model for improving mild cognitive impairment (MCI) Cheng-li Liu, Kuo-Wei Su, Taiwan</p> <p>FDA funded research for training decay selection for human factors validation Shannon Clark, USA</p>	
<p>125</p>	<p>Ergonomic Risk Assessment Methods and Techniques II Co-Chairs: Takafumi Aoyagi and Yuriko Imura, Japan</p>	<p>PEHF</p>
<p>15:30-17:00 AHFE 5: FOOTHILL E</p>	<p>A failure event virtual learning method that replaces field experience and its effectiveness measurement Yusaku Okada, Takafumi Aoyagi, Japan</p> <p>Expansion of the system for collecting information on hospital incidents - aiming to revitalizing on-site management Yuriko Imura, Yusaku Okada, Japan</p> <p>Fixation analysis of affective picture processing in aggressive adolescent Diana Pacheco, Andrea Argudo-Vásconez, Rodrigo Barros, Patricia Margarita Ortega Chasi, Martha Cobos, Omar Alvarado, Ecuador</p> <p>Visual attention performance in a naturalistic, dynamic virtual environment Ying-yin Huang, Marino Menozzi, Taiwan</p>	
<p>126</p>	<p>Trust in Vehicle Automation Co-Chairs: Saeedeh Mosaferchi and Lutz Fischer, Italy/Germany</p>	<p>RR</p>
<p>15:30-17:00 AHFE 6: FOOTHILL F</p>	<p>Investigation of the influences of sensors for automated driving on the perception of exterior design Lutz Fischer, Lars Gadermann, Daniel Holder, Niklas Ihle, Julius Schlecht, Thomas Maier, Germany</p> <p>Building trust in highly automated and autonomous vehicles Karl Proctor, UK</p> <p>How personality, demographics, and technology affinity affect trust in autonomous vehicles: a case study Saeedeh Mosaferchi, Rosaria Califano, Alessandro Naddeo, Italy</p> <p>The new interaction mode of human-vehicle in automatic driving: Overview of the reification-perception interaction Yikai Zhong, Xing Chen, Danhua Zhao, China</p> <p>“Hand-Over, Move-Over, Take-Over” – HoMoTo as a holistic method to analyze take-over scenarios Miriam Schäffer, Philipp Pomiersky, Wolfram Remlinger, Germany</p>	

Sunday, July 23

127	Ergonomics in Urban Planning Co-Chairs: João Rafael Santos and Daniela Spirkova, Portugal/Slovakia	SUPI
15:30-17:00 AHFE 7: FOOTHILL G1	<p>Emotional effects of color in noisy environment: A virtual reality study on subway platforms Yuhong Chen, Lilu Tang, Dan Zhang, China</p> <p>Incremental public space networks as metropolitan infrastructures towards urban resilience and cohesion: Decoding best practices in Lisbon, Portugal João Rafael Santos, Tomás Nunes, Ariana Marques da Silva, José Duarte, Ana Beja da Costa, Portugal</p> <p>Comparing the profile of South African quantity surveyors with construction quantity surveyors Danie Hoffman, Derick Booyens, Karl Trusler, South Africa</p> <p>Determinants influencing the current real estate market in the Slovak Republic Daniela Spirkova, Julius Golej, Monika Zatrochova, Slovakia</p> <p>Design strategies in hybrid infrastructure - The case of China Yue Chen, Mingyan Xiao, Huaming Huang, China</p> <p>An assessment of the effects of legislation policies on energy infrastructure financing in developing countries Emmanuel Ayorinde, Ntebo Ncogbo, South Africa</p> <p>Financing power infrastructure in a developing economy: An exploratory factor analysis approach Emmanuel Ayorinde, South Africa</p>	
128	Building Readiness for Digital Service Transformation Ecosystem Co-Chairs: Kristina Reinsalu and Marina Weck, Estonia/Finland	HFBMS
15:30-17:00 AHFE 8: FOOTHILL G2	<p>Crowdsourcing policies and solutions to wicked problems: case study of crowdsourcing on air quality in European cities Kristina Reinsalu, Robert Bjarnason, Estonia</p> <p>Capacity building in GovTech for measuring and achievement of sustainable development goals Alena Labanava, Innar Liiv, Ingrid Pappel, Estonia</p> <p>Capacity building as an important key aspect to support countries' digitalization endeavors Ingrid Pappel, Josephine Lusi, Nora Hauptmann, Valentina Stadnic, Margus Mägi, Diana Sang, Sherman Kong, Estonia/Germany/Switzerland/USA</p> <p>Legal readiness for open source software adoption in public sector Vikash Madduri, Alike Vandtke, Yolanda Martinez, Margus Mägi, Nele Leosk, Nico Lueck, Sherman Kong, Switzerland/Estonia/Germany/USA</p> <p>A conceptual review of the constraints to global competitiveness of the South African automotive industry John M. Ikome, South Africa</p>	
129	Management in Education Co-Chairs: Zhang Yao and Javier Irizarry, China/USA	TELS
15:30-17:00 AHFE 9: PACIFIC A	<p>An evaluation method of art teachers' cooperative communication ability based on task situation Zhang Yao, Yihang Du, China</p> <p>Visualization enhancements to facilitate the use of digital demonstrators for instructional applications Steven Kangisser, Abhishek Shankar, Javier Irizarry, USA</p> <p>Mission flexible – minimum general requirements for a UAV training concept Maria Hagl, Maria Stolz, Anne Papenfuß, Marcus Biella, Kevin Dwinger, Germany</p> <p>Performance vs. workload matrix of primary flight training: Exploratory study Gajapriya Tamilselvan, Nurettin Dinler, Stephen Belt, USA</p> <p>Pedagogical application of visualization and eye tracking for electrical grid management Felix Azenwi Fru, S. Camille Peres, Thomas Overbye, Wonhyeok Jang, Juntao Chen, Hayat Mbayed, Eric Keller, Jung Jung, Sanjana Kunkolienkar, Kayla Ivey, USA</p> <p>Training failure analysis of aerospace control officer air battle managers Francesca Ruscito, Canada</p>	

130	<p>Wearable Multimodal Sensing and Decoding Co-Chairs: Anne-Marie Brouwer, Mathias Vukelic and Alexander Von Lühmann, Netherlands/Germany</p>	CN
<p>15:30-17:00 AHFE 10: PACIFIC B</p>	<p>Investigating the neuroergonomics of wearable information devices using mobile EEG Julian Elias Reiser, Gerhard Rinkenauer, Lewis Chuang, Edmund Wascher, Germany</p> <p>Towards continuous mental state detection in everyday settings: Investigating between-subjects variations in a longitudinal study Lea Berkemeier, Wim Kamphuis, Herman De Vries, Anne-Marie Brouwer, Jan Ubbo Van Baardewijk, Maarten Schadd, Hilbrand Oldenhuis, Ruud Verdaasdonk, Lisette Van Gemert-Pijnen, Netherlands</p> <p>Inter-individual attentional synchrony reflects natural variations in attention Ivo Stuldreher, Anne-Marie Brouwer, Jan Van Erp, Netherlands</p> <p>Investigating feature set decisions for mental state decoding in virtual reality based learning environments Katharina Lingelbach, Daniel Diers, Michael Bui, Mathias Vukelić, Germany</p> <p>Methods and instruments for mobile brain-body imaging in the everyday world: A perspective Alexander Von Lühmann, Meryem Yucel, Germany/USA</p> <p>Neuroscience of the everyday world: Recent experimental progress Meryem Yucel, Alexander Von Lühmann, USA/Germany</p> <p>Evaluating the restorative impact of nature through multimodal mobile sensing of neural, physiological, and behavioral activity in ambulatory settings Adrian Curtin, Yigit Topoglu, Saqer Alshehri, Michael Woodburn, Lynelle Martin, Rajneesh Suri, Hasan Ayaz, USA</p>	
131	<p>Human Performance and Special Needs Co-Chairs: Marie Sjölander and Hector Rafael Morano Okuno, Sweden/Mexico</p>	HFAS
<p>15:30-17:00 AHFE 11: PACIFIC C</p>	<p>Life stories – Developing an interactive solution for reminiscence and communication Marie Sjölander, Elin Hollström, Hanna Rönntoft, Sweden</p> <p>Granting a better verdict of the mini-mental state examination (MMSE) with new technologies Gemma Alejandra Martínez Santos, Sergio Navarro Tuch, Ariel Lopez Aguilar, Rogelio Bustamante-Bello, Lili Marlene Camacho Bustamante, Mexico</p> <p>An exploratory user study on the design of smart walking aids for community-dwelling older adults Qian Mao, Zihan Li, Chengxi Huang, Hailiang Wang, Hong Kong SAR China</p> <p>Simplified CAD model of a person for the simulation of their movements Hector Rafael Morano Okuno, Guillermo Sandoval, Rafael Caltenco Castillo, Donovan Esqueda Merino, Jose De Jesus Solis Cordova, Andres Andres Garcia Garcia, Mexico</p> <p>Usability of documentation software used by direct support providers: A proof-of-concept study Martina A. Clarke, Lisa L. Neitzke, Kathryn M. Cooper, USA</p>	
132	<p>Human Factors in Artificial Intelligence and Social Computing II Co-Chairs: Adita Kulkarni and Eric Owusu, USA</p>	AISC
<p>15:30-17:00 AHFE 12: PACIFIC D</p>	<p>Evaluating the effect of time on trust calibration of explainable artificial intelligence Ezekiel Bernardo, Rosemary Seva, Philippines</p> <p>Towards Kenyan sign language hand gesture recognition dataset Casam Nyaga, Ruth Wario, South Africa</p> <p>The evolution of artificial intelligence adoption in industry Matthias Vogel, Giuseppe Strina, Christophe Said, Tobias Schmallenbach, Germany</p> <p>Application of educational context data using artificial intelligence methods Myriam Peñafiel, Maria Vasquez, Diego Vasquez, Ecuador</p> <p>An ontology-based modeling and CBR method for cable process planning Chengjin Qiu, Xiaojun Liu, Changbiao Zhu, Feng Xiao, China</p> <p>Understanding Deepfakes: A comprehensive analysis of creation, generation, and detection Sami Alanazi, Seemal Asif, UK</p>	

Sunday, July 23

133	Human Resources Management Practices and Smart City Management Chair: Clinton Aigbavboa, South Africa	SCON
15:30-17:00 AHFE 13: PACIFIC E	<p>A smart sustainable city tailored to changing needs Daria Motafa, Poland</p> <p>Benefits of the expanded public works programme in South Africa: A direct stakeholder's perception Olusegun Oguntona, Opeoluwa Akinradewo, Boitumelo Kgoetyane, Babatunde Fatai Ogunbayo, Clinton Aigbavboa, South Africa</p> <p>Ethical elements influencing leadership development in the South African Construction industry: A Delphi study Liphadzi Murendeni, Clinton Aigbavboa, South Africa</p> <p>Empirical scrutiny of the human resources management features for effective maintenance management of educational buildings Ntebo Ncogbo, Clinton Aigbavboa, Douglas Aghimien, South Africa</p> <p>Assessing the role of organizational features in maintenance management of buildings in higher education institutions Ntebo Ncogbo, Clinton Aigbavboa, Douglas Aghimien, South Africa</p>	
134	Human Factors for Apparel and Textile Engineering III Co-Chairs: Cristina Carvalho and Junchun Chen, Portugal/China	HFATE
15:30-17:00 AHFE 14: PACIFIC F	<p>Anthropometric measurements for firefighting protective coats: a comparison between the Portuguese and the US male firefighters Anna Sophia Moraes, Fernando Ferreira, Miguel Carvalho, Portugal</p> <p>Characterization studies of a commercial blue clay for cosmetic textiles with antibacterial activity Alexandra Gabriela Ene, Lucia Secareanu, Ovidiu Iordache, Mirela Blaga, Cristina Lite, Romania</p> <p>Artistic characteristics and multi-value of Huayao cross-stitch from the perspective of cultural ecology Junchun Chen, Jian Peng, China</p> <p>Clothing and housing: Using materials with adaptable features can improve comfort and safety in emergency situations. Marlene Couceiro, Cristina Carvalho, Portugal</p> <p>Inclusive Wardrobe - Touching and wearing different types of fabrics among visually impaired people Carla Costa Pereira, Sharma Deepshikha, Cristina Carvalho, Portugal</p>	
REFRESHMENTS: 17:00 - 17:30 • ROOM: SoMA (2ND LEVEL)		
136	Knowledge and Creating Value in Teams, Organizations, Communities, and Societies IV Co-Chairs: Youji Kohda, Yasunobu Ito and Takuichi Nishimura, Japan	HSSE
17:30-18:45 AHFE 1: FOOTHILL A	<p>Collaborative abduction for exploration of new or tacit knowledge - Can Human and AI co-evolve with data, knowledge, and feelings? Takuichi Nishimura, Koki Ijuin, Chiaki Oshiyama, Mihoko Otake-Matsuura, Toshihisa Tanaka, Shogo Okada, Naoshi Uchihira, Japan</p> <p>Digital transformation classification types and evolution process for established companies Satoshi Okuda, Naoshi Uchihira, Japan</p> <p>Design method using extended business model canvas for IoT platforms considering platform and service value Taketo Yato, Naoshi Uchihira, Japan</p>	
137	Automotive Design Co-Chairs: Chang Meng and Jie Wang, China	ED
17:30-18:45 AHFE 2: FOOTHILL B	<p>Visualization analysis and research progress of human-machine interface design in automobiles Ziang Wang, China</p> <p>Evaluation of nonlinear regional stability performance of passenger cars Zehong Wei, Xuelian Zheng, Jie Wang, Yuanyuan Ren, Qingju Wang, China</p> <p>Design strategies compared: How eHMI are perceived in relation to the exterior design of automated vehicles Lars Gadermann, Lutz Fischer, Daniel Holder, Niklas Ihle, Julius Schlecht, Thomas Maier, Germany</p> <p>Spatial views in intelligent cabin interaction behavior and touchpoints design Chang Meng, Danhua Zhao, China</p> <p>The design of short-term rest vehicle cabins based on light-induced sleep technology Liu Tongyao, Junjie Zhang, Zihao Wang, China</p>	

<p>138</p>	<p>Patient Safety Chair: Jay Kalra, Canada</p>	<p>EHMD</p>
<p>17:30-18:45 AHFE 3: FOOHILL C</p>	<p>Quality care and patient safety: A best practice model for medical error disclosure Jay Kalra, Zoher Rafid-Hamed, Chiamaka Okonkwo, Patrick Seitzinger, Canada Knowledge model for interactive safety performance indicators for wearable rehabilitation robot: Uniform standards for interaction safety testing Ming Cheng, Yanchen Du, Ao Jiang, Xin Meng, Hongliu Yu, China An examination of factors beyond the 5C model in COVID-19 vaccination decisions Junyu Zhao, Calvin Or, Hong Kong SAR China Usability evaluation of a process optimized integrated workstation based on the IEEE 11073 SDC standard Okan Yilmaz, Klaus Radermacher, Frank Beger, Jonas Roth, Armin Janß, Germany Specialized nurse care for the patient with an internal tracheotomy cannula in the intensive care public hospital of Peru Danicsa Espino, Carmen Arbulu, Madeleine Espino, Dávila Valdera Anny Katherine, Luis Dávila, Espino Carrasco Mayury Jackeline, Vasquez Cachay Royer, Alvites Gasco Ana Maria, Gomez Romero Clarisa, Díaz Calderón Ricardo Rafael, Dávila Valdera Lady Violeta, Peru</p>	
<p>139</p>	<p>Agile Manufacturing Systems Chair: Lucia Botti, Italy</p>	<p>MFG</p>
<p>17:30-18:45 AHFE 4: FOOHILL D</p>	<p>Co-creation-based framework for the agile development of AI-supported CAM systems Nina Rußkamp, Claas Digmayer, Eva-Maria Jakobs, Germany Life cycle opportunity based on implementation of quality management systems Pawel Krolas, Janne Heilala, Poland Opportunity as a common factor of agility and entrepreneurship Mateusz Chróst, Junaid Rehman, Poland Exoskeletons at work: Opportunities, suggestions for implementation and future research needs Lucia Botti, Maniva Oliva, Adriano Paolo Bacchetta, Riccardo Melloni, Italy Implementation strategies for intelligent systems to support manufacturing planning: Recommended actions to avoid failure Florens Lucian Burgert, Anton Caspar Boehme, Marisa Schirmer, Niklas Steireif, Susanne Mütze-Niewöhner, Germany Human intelligence vs artificial intelligence in opportunity discovery Stefan Trzcielinski, Poland Designing the organizational structure of enterprises operating in a highly turbulent environment Edmund Pawlowski, Poland</p>	
<p>140</p>	<p>Driver Performance, Behavior and Physiology I Co-Chairs: Claudia Cristina Medeiros and Catarina Neto, Brazil/Portugal</p>	<p>RR</p>
<p>17:30-18:45 AHFE 5: FOOHILL E</p>	<p>Communication of intent among drivers: does it deteriorate with age? Evangelia Portouli, Dimitris Nathanael, Nicolas Marmaras, Greece Communication needs and the drivers' activity in platooning systems Catarina Neto, Anabela Simoes, António Lobo, Portugal Highway work zone warning system design based on drivers' requirements Shuo-Fang Liu, Peng Ni, ShiYu Wang, Taiwan The human cost of resilient performance: An exploratory study of truck drivers in Brazil Claudia Cristina Medeiros, Bruna Quadros, Tarcisio Abreu Saurin, Brazil</p>	

Sunday, July 23

141	Human Factors in Transports Co-Chairs: Fabien Bernard and Josué França, France/Brazil	SYSI
17:30-18:45 AHFE 6: FOOTHILL F	<p>Transport and mining machinery foot controls: safety and human factors view Vesna Spasojevic Brkic, Aleksandar Brkic, Martina Perisic, Zorica Veljkovic, Serbia</p> <p>Construction of commander's visual model under long-term voyage Ning Li, China</p> <p>Tourist Recommendation Systems: solving mobility in a private vehicle with support for parking Maritzol Tenemaza, Sergio Luján-mora, Roger Laza, Jonathan Vargas, Ecuador</p> <p>Comparative analysis of Air France 447 (2009) and Costa Concordia (2012) using FRAM: How organizational culture influences cockpit/bridge decisions Josue Franca, Erik Hollnagel, Brazil</p> <p>Model-based human-machine interaction design of civil aircraft cockpit Zuo Pianpian, Jiang Jun, China</p> <p>Civil aircraft crew alarm ranking method Zuo Pianpian, Zhu Zhongbin, Zhu Hongyu, Zhou Lingchen, China</p> <p>School bus system redesign based on ergonomics principles - The example of Huazhong University of Science and Technology Sijia Wang, Xu Qian, China</p>	
142	Human and Organizational Factors in Data-Driven Digital Transformation Co-Chairs: Marina Weck and Kristina Reinsalu, Finland/Estonia	HFBMS
17:30-18:45 AHFE 7: FOOTHILL G1	<p>Barriers to digital transformation of the silver economy: Challenges to adopting digital skills by the silver generation Sidra Azmat Butt, Silvia Lips, Rahul Sharma, Ingrid Pappel, Dirk Draheim, Estonia</p> <p>Multi-faceted evaluation of the digital silver hub to validate its platform requirements Sidra Azmat Butt, Marina Weck, Ingrid Pappel, Dirk Draheim, Estonia/Finland</p> <p>AI readiness assessment for data-driven public service projects: Change management and human elements of procurement Richard Dreyling, III, Regina Erlenheim, Tanel Tammet, Ingrid Pappel, Estonia</p> <p>Transnational innovation networks, population aging and the silver economy: Challenges, opportunities and the state of play Eric Blake Jackson, Ingrid Pappel, Sadok Ben Yahia, Estonia</p> <p>Customer-oriented service innovation grounded in data-driven decision making: A readiness assessment framework Marina Weck, Sonja Kedonperä, Markus Sihvonen, Finland</p> <p>Econometric analysis of the determining factors of the balance of emotions of people with disabilities in Chile Hanns de la Fuente-Mella, Nelson Lay-Raby, Camila Cortés, Mercedes Espinoza, Cristóbal Arizaga, Chile</p>	
143	Product Design + Human Factors I Co-Chairs: Susan Sokolowski and Linsey Griffin, USA	IPID
17:30-18:45 AHFE 8: FOOTHILL G2	<p>User-oriented definition of smart products: a body perspective Yi Zheng, China</p> <p>Pilot study to develop customized pediatric respiratory masks Vanessa Segura, Linsey Griffin, Emily Seifert, Minji Yu, Julianne Bur, USA</p> <p>Mask fit across the ages Susan Arnold, Minji Yu, Neil Carlson, William Durfee, Linsey Griffin, USA</p> <p>Advanced 3D hand scanning Linsey Griffin, Vanessa Segura, Emily Seifert, Minji Yu, Tse-hsun Kuo, Julianne Bur, USA</p>	

<p>144</p>	<p>Applications in Robots, Drones and Unmanned Systems II Co-Chairs: Daniela Doroftei and Bruno Tardaguila, Belgium</p>	<p>HFRDUS</p>
<p>17:30-18:45 AHFE 9: PACIFIC A</p>	<p>Human-agent teaming between soldiers and unmanned ground systems in a resupply scenario Geert De Cubber, Emile Le Flécher, Alexandre La Grappe-Dominicus, Daniela Doroftei, Belgium</p> <p>Human factors assessment for drone operations: Towards a virtual drone co-pilot Daniela Doroftei, Geert De Cubber, Hans De Smet, Belgium</p> <p>Ground effect on a landing platform for an unmanned aerodynamic system Bruno Tardaguila, Stijn Claus, Manuel Martínez Herrero, Jolien De Wulf, Louis Nagels, Stijn Verwulgen, Belgium</p> <p>Motion analysis of drone pilot operations and drone flight trajectories Akihiko Goto, Naoki Sugiyama, Tomoko Ota, Japan</p> <p>Decision transparency for enhanced human-machine collaboration for autonomous ships Andreas Madsen, Andreas Brandsæter, Magne V. Aarset, Norway</p> <p>Unmanned vehicle sensor map overlay: An investigation of color schemes for interpretation of coverage and temporal data Hunter Rogers, Heath Ruff, Anna Van Abel, Elizabeth Frost, Jacob Ehrenstrom, USA</p>	
<p>145</p>	<p>Human Factors in Management and Leadership I Chair: Salman Nazir, Norway</p>	<p>HFML</p>
<p>17:30-18:45 AHFE 10: PACIFIC B</p>	<p>Competency-based training and assessment (CBTA) framework in global aviation training Dimitrios Ziakkas, Debra Henneberry, Abner Del Cid Flores, USA</p> <p>Technology implementation model for the integration of Mexican SMEs into global markets Patricia Castillo-Galván, Mexico</p> <p>A changing demographic – profiling female quantity surveyors in South Africa Danie Hoffman, Faith Dowelani, Benita Zulch, South Africa</p> <p>Co-opetitive management and leadership methodology for democratic organizational change Evangelos Markopoulos, Hannu Vanharanta, Jussi Kantola, Finland</p> <p>Merging the holacracy and the company democracy models into a new disruptive and intellectual capital driven human resource management methodology Evangelos Markopoulos, Alisia Jordanou, Hannu Vanharanta, Finland</p> <p>Impact of China-Pakistan economic investment on volatility of stock exchanges in Pakistan and Shanghai Natacha Silva, Maria José Palma Lampreia Dos Santos, Portugal</p>	
<p>146</p>	<p>Simulations Based Training Assessment Methodologies Co-Chairs: Debbie Patton and Larissa Cahill, USA</p>	<p>HFSIM</p>
<p>17:30-18:45 AHFE 11: PACIFIC C</p>	<p>A proposed methodology to assess cognitive overload using an augmented situation awareness system Debra Patton, Joshua Rubinstein, USA</p> <p>Assessment of pilots' training efficacy as a safety barrier in the context of enhanced flight vision systems (EFVs) Dimitrios Ziakkas, Konstantinos Pechlivanis, Brian Dillman, USA/UK</p> <p>Participant gaming experience predicts mental model formation, task performance, and teaming behavior in simulated search and rescue Rhys Bendell, Jessica Williams, Stephen M. Fiore, Florian Jentsch, USA</p> <p>Using a tactile detection response task to measure cognitive load and inform augmented reality display designs Larissa Cahill, Ryan Dummin, Justin Hollands, Australia</p> <p>Evaluating the effectiveness of mixed reality as a cybersickness mitigation strategy in helicopter flight simulation Boris Englebert, Laurie Marsman, and Jur Crijnen, Netherlands</p> <p>Attention military/commercial simulation developers, users, & trainers: Visually-induced or motion-induced sickness is not necessarily more severe for women Ben Lawson, Jeffrey Bolkhovsky, USA</p>	

Sunday, July 23

147	The Instrumented User: Enhancing User Performance with AR, VR, and Wearable Technologies Co-Chairs: Brian Telfer and Francesco Lolli, USA/Italy	HFWT
17:30-18:45 AHFE 12: PACIFIC D	Key enabling technologies and concepts for the human-centric industrial revolution Francesco Lolli, Antonio Maria Coruzzolo, Platao Gonçalves Terra Neto, Miguel Afonso Sellitto, Rita Gamberini, Italy Human factors for wearable technologies in extreme environments Brian Telfer, USA Smartwatch-based persuasive design with tailored competition and cooperation strategies for promoting physical activity Guo Xinrui, Jie Yao, Shumeng Hou, China An overview of various tasks and trades in the construction industry offering potential for exoskeletons Geneviève Gagnon, Firdaus Sekkay, Daniel Imbeau, Mario Bourgault, Canada A novel method for evaluating the suitability of helmets Xiao Zhang, Qiang Li, Jianwei Niu, Xiao Chen, Yuanyuan Zu, China	
148	HSSE Social Event Co-Chairs: Christine Leitner, Clara Bassano, Debra Satterfield, Jens Neuhüttler, UK/Germany/Italy/USA	HSSE
	17:30-18:45 AHFE 13: PACIFIC E	
149	Design and Human Factors for Sustainable Development Co-Chairs: Liliana Soares and Ermanno Aparo, Portugal	HDCS
17:30-18:45 AHFE 14: PACIFIC F	Design and creativeness for a three-act session Liliana Soares, Ermanno Aparo, Rita Almendra, Portugal Natural and artificial lighting: Influence on readability Sílvia Espada, Ana Teixeira, Maria Antunes, Sonia Brito-costa, Portugal Dialectic of the sustainability: Design and art new frontiers Ruben Moutinho, Ermanno Aparo, Paulo Dinis, Portugal The creation of a network, in the north of Portugal, as an opportunity for territorial sustainability Fátima Costa, Ermanno Aparo, Liliana Soares, Portugal The will-to-power to design a violin Ermanno Aparo, Liliana Soares, Evandra Gonçalves, Portugal	

Monday, July 24, 2023

151	Ergonomics in Design and Driving Experience Co-Chairs: Zhimao Hu and Weitong Zhang, China	ED
8:00-9:30 AHFE 1: FOOTHILL A	Future automobile driving space voice interaction: Adapt to the driving scenarios and user personalities Weitong Zhang, Chen Jiaxin, China Personalized adaptive cruise control with deep reinforcement learning Zhuocheng Han, Xuelian Zheng, Yuanyuan Ren, Xiansheng Li, Qingju Wang, China Lane changing behavior recognition of other vehicles considering driving tendency Zhimao Hu, Yuanyuan Ren, Xuelian Zheng, Lan Zhao, Qingju Wang, China Driving behavior analysis based on weighted cost function Lei Shi, Youlin Zhang, Jicun Xu, Xuelian Zheng, Xiao Tong Cui, Qingju Wang, China	
152	Human Factors in Software and Systems Engineering III Co-Chairs: Rosa Navarrete and Josué Clery, Ecuador	HFSSE
8:00-9:30 AHFE 2: FOOTHILL B	Evaluating embedded semantics for accessibility description of web crawl data Rosa Navarrete, Diana Martinez-Mosquera, Lorena Recalde, Marco Aguirre, Ecuador ETL and ML forecasting modeling process automation system Jennifer Wu, Doina Bein, Jidong Huang, Sudarshan Kurwadkar, USA Design of library management system based on MVVM framework and ZXing scanning code technology Yuqi Li, Hongyu Zhang, Jinhui Xu, China Communication of the linguistic awareness of Ecuadorian students, through a web system Josué Clery, Isabel Posligia, Edison Cruz, Martha Suntaxi, Roberto Palacios, Susana Molina, Gonzalo Vera, Arturo Clery, Ecuador A formal method for the analysis of the Veteran's Ebenefits' website Giovanna Camacho, Matthew Bolton, Jingan Peng, Prashanth Wagle, USA	

Sunday, July 23

Monday, July 24

153	Neuroergonomics for Understanding and Enhancing Performance in Operational Environments Chair: Assaf Harel, USA	CN
8:00-9:30 AHFE 3: FOOTHILL C	Validation of affective images of the IAPS set in children Noemí Gabriela Gómez Ochoa, Patricia Ortega Chasi, Martha Cobos Cali, Omar Alvarado Cando, Karla Sofia Andrade Castro, Ecuador Visual neuroergonomics: Harnessing cognitive neuroscience to enhance human performance and human-machine teaming Assaf Harel, USA Real-time prediction of attention and performance using neural activity Elizabeth Fox, Gregory Bowers, USA Automated sensing of pilot situational awareness and adjustments to aircraft controls Matthias Ziegler, Raquel Galvan, Amanda Kraft, Carl Pankok, Jr., Michael Kozak, USA EEG dynamics associated with cognitive resource allocation during listening Matthew Wisniewski, USA	
154	Industrial Cognitive Ergonomics and Engineering Psychology II Chair: Umer Asgher, Pakistan	ICEEP
8:00-9:30 AHFE 4: FOOTHILL D	Trust: The vital fluid of interactions Laurent M. Chaudron, Jean-Marie Burkhardt, Lisa Chouchane, Pauline Munoz, Anne-Lise Marchand, Nicolas Maille, France A critical overview of studies on eye tracking and visual hierarchy Amic Ho, Hong Kong SAR China Socio-cultural factors of industrial workers in low-middle income countries (LMIC): Pilot study Umer Asgher, Sara Ali, Tahir Ali, Yasar Ayaz, Sofia Scataglini, Salman Nazir, Usama Rashed, Ellie Abdi, Fahad Iqbal Khawaja, Redha Taiar, José Arzola-Ruiz, Pakistan Interface and interaction: The symbolic design for bridge conning system Bingyu Mu, Fang Bin Guo, Zaili Yang, Ian Jenkinson, UK	
155	Product Design and Ergonomic Evaluation Co-Chairs: Mark Boocock and Samia Rafique, New Zealand/China	PEHF
8:00-9:30 AHFE 5: FOOTHILL E	Musculoskeletal and work practice survey of chainsaw users in the New Zealand forest industry Mark Boocock, Liz Ashby, Richard Parker, New Zealand Evaluation of ergonomic needs among female sewing machine operators in garments industry of Bangladesh: A pilot study Samia Rafique, Jecha Suleiman Jecha, Hui Lyu, China Effect of high-heel footbed on interface pressure Hour Almadhaani, Ravindra Goonetilleke, UAE Effects of seat height and seat tilt on interface pressure Khawla Alhosani, Ravindra Goonetilleke, UAE Design and verification methodology of the pilot's view of civil aircraft non-openable window Feng Zhixiang, Yuhe Mao, China	
156	Comfort and Interior Considerations in Vehicles II Co-Chairs: Yang Yingxue and Eva-Maria Jakobs, China/Germany	RR
8:00-9:30 AHFE 6: FOOTHILL F	Perspectives of commuters on electric vehicles, charging infrastructure, and communication measures Lorena Niebuhr, Eva-Maria Jakobs, Germany The prerequisites for remote driving of vehicles Christian Jernberg, Sweden Interaction design of closed dark cabin driving interface based on situation awareness Xiaodong Gong, Yang Yingxue, China The effect of colored light in the vehicle interior on the thermal comfort and thermal responses of vehicle occupants Sabina Bähr, Fabian Edel, Germany Predictive validity of the vehicle seat comfort score by using the seat design and testing factors Kim Sunwoong, South Korea	

Monday, July 24

157	Human Factors, Business Management and Efficiency Co-Chairs: Henrijs Kalkis and Zenija Roja, Latvia	HFBMS
8:00-9:30 AHFE 7: FOOTHILL G1	<p>Knowledge management capabilities in the intra-organizational environment Harsh Chauhan, Henrijs Kalkis, Latvia</p> <p>Locating a smart manufacturing based on supply chain segregation Janne Heilala, Pawel Krolas, Finland</p> <p>Business efficiency metric implementation strategies for the service-providing companies Svetlana Kocerova, Henrijs Kalkis, Zenija Roja, Latvia</p> <p>Making customers successful: Customer Success Management a new management approach Sven Seidenstricker, Vinzenz Krause, Germany</p> <p>The impact of COVID-19 pandemic on South Asian stock markets Natacha Jesus-Silva, Nuno Baptista, Maria José Palma Lampreia Dos-Santos, Portugal</p>	
158	Human Factors in Management and Leadership II Chair: Momoko Kitada, Sweden	HFML
8:00-9:30 AHFE 8: FOOTHILL G2	<p>Transformational versus transactional leadership styles in ensuring well-being of STEM workers Živilė Stankevičiūtė, Asta Savanevičienė, Lina Girdauskiene, Lithuania</p> <p>Leader-member exchange theory through an interpretive-processual perspective: A review and the way ahead Omar Abou Hamdan, Viviana Meschitti, UK</p> <p>Gender based violence at sea: Collective actions for collective trauma Momoko Kitada, Sweden</p> <p>Barriers to the collection of gender-disaggregated data in ocean science Momoko Kitada, Ellen Johannesen, Renis Auma Ojwala, Mariamalia Rodriguez-Chaves, Francis Neat, Susan Buckingham, Zhen Sun, Ronan Long, Clive Schofield, Sweden</p> <p>Definitions of The Tariff between Dostyk St. (Kazakhstan) – Mannheim Industry and Hafen St. (Germany) Zhaken Kuanyshtbayev, Kazakhstan</p>	
159	Kansei on Services and Entertainments Chair: Masashi Yamada, Japan	KE
8:00-9:30 AHFE 9: PACIFIC A	<p>Impression changes of a live stage by lighting in terms of a virtual pop idol show Yoshiki Nishita, Masashi Yamada, Japan</p> <p>A perceptual study on the ratios of areas of two adjacent colors for the optimal congruency Masato Chiba, Masashi Yamada, Japan</p> <p>A statistical analysis of history of Japanese light novels Sho Hasegawa, Masashi Yamada, Japan</p> <p>The evaluation method of cruise ship exterior styling imagery based on Kansei engineering and analytic hierarchy process Jiefeng Lu, Jie Jiang, Mengying Tang, Li Zhang, China</p> <p>Color combination of information display interface based on Kansei Engineering and paired comparison experiment Lin Sheng, Zhenyu Gu, An Zhang, China</p>	
160	Modeling Approaches in Social Sciences Co-Chairs: Zining Yang and Julia Wright, USA	HFSIM
8:00-9:30 AHFE 10: PACIFIC B	<p>PEV market dynamics: An ABM approach to model the relationship between demand for PEVs and charging station supply in southern California Zining Yang, Ruiqian Li, USA</p> <p>Using cognitive models to develop digital twin synthetic known user persona Audrey Reinert, Summer Rebensky, Maria Chaparro Osman, Baptiste Prebot, Cleotilde Gonzalez, Don Morrison, Valarie Yerdon, Daniel Nguyen, USA</p> <p>The hybrid analysis as a disseminator in the field of motion economics studies through machine learning methods and rule-based knowledge Steffen Jansing, Barbara Brockmann, Roman Moehle, Jochen Deuse, Germany</p> <p>User need assessment using simulator feature framework Olugbenga Gideon, USA</p> <p>A cognitive model for guiding automation Christopher Stevens, Christopher Fisher, Mary Frame, USA</p>	

161	Human Factors in Aviation II Co-Chairs: Reiner Suikat and Florian Piekert, Germany	AVI
8:00-9:30 AHFE 11: PACIFIC C	<p>Handling disruptions in total airport management using what-if enabled systems Reiner Suikat, Dag Kjenstadt, Michael Sinen, Nils Carstengerdes, Yves Guenther, Sebastian Schier, Germany</p> <p>Intelligent pilot advisory system: The journey from ideation to an early system design of an AI-based decision support system for airline flight decks Jakob Würfel, Boris Djartov, Anne Papenfuß, Matthias Wies, Germany</p> <p>Metrics to evaluate multi-stakeholder airport control center decision-making processes - a critical discussion Florian Piekert, Nils Carstengerdes, Sebastian Schier, Yves Guenther, Reiner Suikat, Germany</p> <p>Why the stability-flexibility-dilemma should be taken into consideration when studying pilots multitasking behaviour Sophie-Marie Stasch, Wolfgang Mack, Germany</p> <p>Project AVIAN-S: development of a natural language processing model for analyzing aviation safety event reports R. Jordan Hinson, Edward Bynum, Amelia Kinsella, Katherine Berry, Michael Sawyer, USA</p> <p>The artificial intelligence (AI) certification challenges in future single pilot operations (SiPO) Dimitrios Ziakkas, Michael W. Suckow, Konstantinos Pechlivanis, USA</p>	
162	Construction Innovation and Digitalization Chair: Clinton Aigbavboa, South Africa	SCON
8:00-9:30 AHFE 12: PACIFIC D	<p>Unearthing the outcome of construction digitalisation – a South African perspective Douglas Aghimien, Clinton Aigbavboa, Ayodeji Oke, Ahmad Taki, UK</p> <p>Limitations of futuristic building materials for achieving sustainability in the construction industry Olusegun Oguntona, Opeoluwa Akinradewo, Onalerona Mokono, Babatunde Fatai Ogunbayo, Clinton Aigbavboa, South Africa</p> <p>Research trends in industry 5.0 and its application in the construction industry Patience Tunji-olayeni, Clinton Aigbavboa, Ayodeji Oke, Nissi Chukwu, South Africa</p> <p>Assessment of the refurbishment and sustainability of physical sports facilities in selected universities in Southwestern Nigeria Godwin Oseghale, Johnson Ikpo, Clinton Aigbavboa, Bridget Oseghale, Nigeria</p>	
163	Accessibility Within Human-Centered Environments Co-Chairs: Andi St. Clair and Alireza Darvishy, USA/Switzerland	HFAAT
8:00-9:30 AHFE 13: PACIFIC E	<p>Automotive head-up displays (HUDs): Considerations for color-limited users Andi St. Clair, Alex Chaparro, USA</p> <p>A new conversational interaction concept for document creation and editing on mobile devices for visually impaired users Alireza Darvishy, Zeno Heeb, Edin Beljuli, Hans-Peter Hutter, Switzerland</p> <p>Neuro digital experiences for adaptive museums Maria Laura Nappi, Sonia Capece, Camelia Chivăran, Elena Laudante, Mario Buono, Italy</p> <p>Design, human factors and neuroergonomics for safety in manufacturing Ilaria Lombardi, Victor Fernando Muñoz Martínez, Vincenzo Paolo Senese, Assunta Capece, Italy</p> <p>Design and acceptability of technology: Introduction to “Robotics & design: The tool to design human-centered assistive robotics” Claudia Becchimanzi, Francesca Tosi, Italy</p>	
164	Emerging Research Innovations in Service Design, Ethics, User Experience, and Design Research Applied to Health Care, Industry, Business, and Education Co-Chairs: Shrikant N. Parikh and Debra Satterfield, India/USA	HSSE
8:00-9:30 AHFE 14: PACIFIC F	<p>Analysis of home hospice from a systemic design perspective Yang Zhao, Wen Tang, Italy</p> <p>Industry academia collaboration in UX Education: Bringing the UX industry into the classroom Debra Satterfield, Ryan G. Wilson, Azalea Houdek, USA</p> <p>Tracking development and progress of epidemics in real-time for better control and saving lives in process Shrikant Parikh, India</p> <p>Funding opportunities for human factors research at the US National Science Foundation: A workshop Alexandra Medina-Borja, USA</p>	

REFRESHMENTS: 9:30 - 10:00 • ROOM: SoMA (2ND LEVEL)

<p>166</p>	<p>Exploring Collaborations Using Extended Reality (XR), Robotics, and Artificial Intelligence in Service Design and User Experience (AIXD) Chair: Kim Mitchell, USA</p>	<p>HSSE</p>
<p>10:00-12:00 AHFE 1: FOOTHILL A</p>	<p>Traces of memory, footprints of material Narges Goshayeshisafa, USA Co-designing a friendly robot to ease dementia Kimberly Mitchell, Xiaopeng Zhao, Robert Bray, Luke MacDougall, Ella Hosse, Matt Rightsell, USA What is the state of the art of human-robot service systems? Alexandra Medina-Borja, USA</p>	
<p>167</p>	<p>Virtual Environments Co-Chairs: Elisangela Vilar and Karin Ueda, Portugal/Japan</p>	<p>ED</p>
<p>10:00-12:00 AHFE 2: FOOTHILL B</p>	<p>Effects of design around a window on the mental strain of a person working at a desk Karin Ueda, Yohsuke Yoshioka, Japan Effect of colorfulness of texture arranged on sidewall of pathway on walking speed Ayano Naoi, Yohsuke Yoshioka, Japan Evergreen: A mixed reality transformation for experiencing plant dyeing Haoran Hong, Weiyue Lin, Genshen Li, Hiroki Kobayashi, Yingying She, Yiran Chen, Pintong Xiao, Yinan Fu, Jiayi Lei, China Sensory virtual interaction design based on the impact of microplastics on ecosystem Xinhao Zhan, Chao Zheng, Bingkun Qiu, Li Cheng Xie, Xinlei Zhang, Yichen Zeng, China Effect of the horizontal visual field on human sense of direction in a curved passage Naoki Takahashi, Yohsuke Yoshioka, Japan Metaverse on education: A case study about users' acceptance of technology Elisangela Vilar, Francisco Rebelo, Paulo Noriega, Clara Alvelos, Gabriel Andrade, Portugal</p>	
<p>168</p>	<p>Technological Innovations in Healthcare Co-Chairs: Helen Fuller and Peter Schmid, USA/Germany</p>	<p>EHMD</p>
<p>10:00-12:00 AHFE 3: FOOTHILL C</p>	<p>Tactile information coding for touchless interaction with medical devices by means of hand gestures in the air Peter Schmid, Thomas Maier, Germany Design and proof of concept of chatbot for people with dementia Agustin Pumarejo Ontañon, Sergio Navarro Tuch, Ariel Lopez Aguilar, Rogelio Bustamante-Bello, Lili Marlene Camacho Bustamante, Mexico Of seals and humans. Media and scientific discourses about a caregiving medical device Juliette Charbonneau, Karine Berthelot Guiet, France Team-based text analytics for health information systems learning Tim Arnold, Helen Fuller, Serge Yee, Seema Nazeer, Ruth Reeves, USA Activities to promote resilience during health information system transitions Helen Fuller, Timothy Arnold, Michael O'Neil, Darren Wilson, USA Brain-tactile interactive device for dementia prevention of the early elderly Tyan Yu Wu, Wen Yi Lin, Taiwan</p>	
<p>169</p>	<p>Physical Workload Assessment and Biomechanical Analysis Co-Chairs: Ferdinand Langer and Ahamed Altaboli, Germany/Libya</p>	<p>PEHF</p>
<p>10:00-12:00 AHFE 4: FOOTHILL D</p>	<p>Influence of the shape of a forearm support on the range of pronation and supination in the context of a surgical arm assistance system Ferdinand Langer, Thomas Maier, Germany Anthropometric evaluation of university classroom furniture Ahamed Altaboli, Hana Aliskandarani, Ala Alshaikehi, Hager Alahmar, Ruwida Muttardi, Libya How do the antagonistic muscles contract during modulating the output force? Michihiko Fukunaga, Ryoga Fujioka, Yuta Kawasaki, Japan What is the repercussions of the introduction of a cobot on productivity and biomechanical constraints on operators in a collaborative task? Kévin Bouillet, Sophie Lemonnier, Fabien Clanche, Gérome Gauchard, France Assessment of risk factors of upper limb musculoskeletal disorders in a meat processing plant Diogo Cunha dos Reis, Antônio Renato Pereira Moro, Brazil Exploration of back exoskeleton's effectiveness on transportation maintenance workers during lifting activities Xingzhou Guo, Xinran Hu, Yunfeng Chen, USA</p>	

170	H-Workload Chair: Maria Chiara Leva, Ireland	CN
10:00-12:00 AHFE 5: FOOTHILL E	<p>A data-driven framework to model physical fatigue in industrial environments using wearable technologies Carlos Albarrán Morillo, Micaela Demichela, Italy</p> <p>Mental Workload Classification during simulated flight operations based on cardiac and neural dynamics recorded using the MUSE 2 low-cost system Frédéric Dehais, Simon Ladouce, Juan Torre Tresols, Ludovic Darmet, Daniel Callan, France/Japan</p> <p>Neuroergonomics of cursor control devices in spaceship cockpits for spaceflight participants Troy Weekes, Kazuhiko Momose, Thomas Eskridge, USA</p> <p>Eye tracking in neuroergonomics: Applications and current challenges Efecan Yilmaz, Oğuzhan Can Öge, Ayşegül Özkan, Murat perit Çakır, Cengiz Acartürk, Poland</p> <p>Adaptation of NASA MATB-II task for sensing operator attention using wearable technology Bojana Bjegojevic, Maria Chiara Leva, Sam Cromie, Ireland</p> <p>Cognitive human performance (CHP) framework for alarm handling Houda Briwa, Andrés Alonso Pérez, Chidera Winifred Amazu, Maria Chiara Leva, Micaela Demichela, Ireland</p>	
	171	Human Factors on Security and Crises Management Co-Chairs: Mario Simões Marques and Rune Stensrud, Portugal/Norway
10:00-12:00 AHFE 6: FOOTHILL F	<p>Unified vision-series of military exercise - the methodological struggles in conducting evaluation of human factors and systems interaction Rune Stensrud, Sigmund Valaker, Torgar Haugen, Norway</p> <p>How expectations affect performance in a simulated fire and rescue environment Yan Shan Tai, Jacques Grange, Rob Honey, Sabrina Cohen-hatton, UK</p> <p>Negative capability: A human factor of resilience for crisis management and a valuable training and intervention objective Simon Flandin, Olivia Scannell, Elleke Ketelaars, Germain Poizat, Switzerland</p> <p>Logistics future trends and their transformative impact Armindo Frias, Mario Simões-Marques, Pedro Água, Anacleto Correia, Portugal</p> <p>Metaverse and digital twins: Contributions, opportunities and challenges to a sustainable use of the ocean Mario Simões-Marques, Pedro Água, Armindo Frias, Anacleto Correia, Portugal</p> <p>Security and privacy for interoperable organizations Anacleto Correia, Pedro Água, Mario Simões-Marques, Armindo Frias, Portugal</p> <p>The impact of cultural diversity on organizational and operational risk levels Pedro Água, Armindo Frias, Anacleto Correia, Mario Simões-Marques, Portugal</p>	
	172	Usability and User Experience Applications II Co-Chairs: Asma Aldrees and Alessia Brischetto, USA/Italy
10:00-12:00 AHFE 7: FOOTHILL G1	<p>Understanding trust in automation: A consideration of human factors context Hannah Biermann, Sophia Otten, Martina Ziefle, Germany</p> <p>User experience and e-government services: Lessons learned about developing a benchmarking survey Asma Aldrees, Denis Gracanin, USA</p> <p>Digital technologies in museums: Critical issues and opportunities for equal access to cultural heritage Alessia Brischetto, Ester Iacono, Claudia Becchimanzi, Italy</p> <p>Microbial resource research Infrastructure for the 21st Century: Usability analysis of the collaborative working environment Iara Margolis, Lidia Rodrigo-torres, Ana Mackay, Ana Faria, Anna Poli, Luis Almeida, Valeria Prigione, Antonio Vara, Adriana Chiarelli, Luís Soares, Rosa Aznar, Emanuel Sousa, Portugal</p> <p>Comparing the impact of two common information architectures on the operational performance of mission planning systems Xiaodong Gong, Shihang He, China</p> <p>School teachers' and students' behaviors and attitudes toward recycling waste paper - a focus group experience Yingli Gong, Ao Jiang, Wei Wang, Yinhe Zhu, Gaoshan Zhang, Jinjin Zhu, Junyi Huang, China</p> <p>What role an agent could play at home? Exploring the social roles of smart home system based on a content analysis Haosong Dong, Peiyao Cheng, Haiyan Xue, China</p>	

173	Design for Inclusion in the Living Environment Co-Chairs: Agnieszka Ptak-Wojciechowska and Satoshi Kose, Poland/Japan	DI
10:00-12:00 AHFE 8: FOOTHILL G2	Smart furniture for CO2 reduction in public spaces in the center of Guayaquil, Ecuador. Case study: 9 de Octubre Avenue Rossana Rivera, Pedro Chara, Jorge Coque, Juan Briones, Katherine Flores, Ecuador Polyhedral public play spaces for children and caregivers: An inclusive perspective Kin Wai Michael Siu, Zi Yang, Izzy Yi Jian, Hong Kong SAR China Senior-friendly apartments in the context of professional activation of the elderly Agnieszka Ptak-Wojciechowska, Magda Matuszewska, Agata Gawlak, Poland Reflections on the accomplishments of human factors research in Japan toward universal design implementation Yoshiaki Goto, Satoshi Kose, Ken Nunota, Yukari Semmyou, Japan Intergenerational inclusive playground equipment for all ages Kai-Chieh Lin, Pei-Rou Chen, Taiwan	
174	Design Thinking to Create a Happier Life III Co-Chairs: Shuichi Fukuda and Yoshifusa Matsuura, Japan	APD
10:00-12:00 AHFE 9: PACIFICA	Design of Shanghai style dressing furniture from the perspective of eye-mind assumption Mingyue Wang, Zhang Zhang, China Theatricalization of large cruise public space and design transformation Kin Wai Michael Siu, Pan Changxue, Wang Jinjin, Hong Kong SAR China Design index system based on user preferences: The case of Chinese medical products Jian Xu, Huajie Wang, China LIDDY: Remodeling water bottle lids to improve its usage and maintenance Alma Maria Jenifer Gutierrez, Philippines Effects of crease features on crease visibility and goodness of smartphone foldable display Kihyun Park, Jungmin Ryu, Kitae Hwang, Sungmin Kim, Younghee Song, Woojin Park, South Korea Painting style alignment: restoration of ancient Chinese landscape paintings driven by aesthetic cognition and aesthetic computation Rong Chang, Jingran Wang, China Design of intelligent home planting robot based on MR technology Zixuan Huang, Shuwen Qiu, Ren Long, China	
175	Quality Improvement and Risk Management in Manufacturing, Automotive and Defense Industry Co-Chairs: Yusuf Tansel Ic and Barış Keçec, Turkey	APMPC
10:00-12:00 AHFE 10: PACIFIC B	Optimization of machined product quality in the milling process of Inconel high-tech material Yusuf Tansel Ic, Zeki Anıl Adıgüzel, Baran Azizoğlu, Alparslan Eren Keskin, Minesu Köksal, Berat Subutay Özbek, Turkey Analyzing the effects of human resource allocation and learning by experience on project management in defense industry Baris Kececi, Melis Colak, Turkey Determination of preferences in auto glass selection process Yusuf Tansel Ic, Kumru Didem Atalay, Turkey After-sales obsolescence risk management in long-life defense projects Esra Dinler, Ceren Karagoz Kati, Turkey A conceptualised rescheduling approach to minimise manufacturing disruptions in the South African automotive industry John M. Ikome, Opeyeolu Timothy Laseinde, South Africa An analysis of the South African automotive industry local content as an approach to global competitiveness John M. Ikome, Opeyeolu Timothy Laseinde, South Africa A dynamic approach to minimise bottlenecks and improve manufacturing competitiveness in a case study manufacturing industry John M. Ikome, South Africa	

176	Human Factors and Automation: Improving the Development of and Reliance on both Static and Machine Learning Models Co-Chairs: Corey K. Fallon and Zining Yang, USA	HFSIM
10:00-12:00 AHFE 11: PACIFIC C	Developing confidence in machine learning results Jessica Baweja, Brett Jefferson, Corey Fallon, USA Improving trust in power system measurements Artis Riepnieks, Harold Kirkham, USA Can machine learning be a good teammate? Leslie Blaha, Megan Morris, USA Stress and motivation on reliance decisions with automation Mollie McGuire, Miroslav Bernkopf, USA On when to trigger semantic interaction foraging Michelle Dowling, Chreston Miller, USA Human factors for machine learning in astronomy John Wenskovitch, Amruta Jaodand, USA	
177	The Instrumented User: Usability of AR, VR, and Wearable Technologies Co-Chairs: Yujing Wang and Weihan Ge, China	HFWT
10:00-12:00 AHFE 12: PACIFIC D	Evaluation of dynamic thermal comfort of virtual reality headsets in motion Yujing Wang, Chongfeng Li, Jiawang Wang, Yufei Hou, Yun Wang, Xin Wang, China Augmenting VR/XR experiences using directional vibrotactile feedback and temperature variation using wearable devices Ahmed Farooq, Jussi Rantala, Zhenxing Li, Roope Raisamo, Finland Dynamic stability of VR headsets: The effect of contact area on displacement in user motion Weihan Ge, Hongyu Ren, Yun Wang, China Perceptions of and intention to use wearable and assistive devices among older adults Hao Liu, Calvin Or, Vivian Lou, Yong Hu, Ning Xi, Hong Kong SAR China Towards operational use of augmented reality: A contextual usability analysis of helicopter pilot, emergency medic, and mechanic use cases Jesslyn Alekseyev, USA Wearable functional electrical stimulation system for personal training Ziqian Bai, China	
178	Usability and User Experience Applications III Co-Chairs: Jonathan Max Kiessling and Yin Cui, Germany/USA	UUE
10:00-12:00 AHFE 13: PACIFIC E	Quality analysis of images between expert and beginners taken by drone Naoki Sugiyama, Tomoko Ota, Akihiko Goto, Japan Design and research of modular monitoring and disinfecting connection cabin in the perspective of resilient city Ziqian Liu, Qin Zhao, Yiting Chen, Yujia Feng, Xinyi Yao, China User-centered design of an adaptively morphing human-machine interface Jonathan Max Kiessling, Thomas Maier, Simon Wiesenfarth, Stephan Mayer, Germany Small program design of learning tools based on user experience - Take i remember as an example Yin Cui, Fan Zhang, Yun Chen, Shijun Ge, China User expectations of facial recognition in schools and universities: Mixed methods analysis Aimee Roundtree, USA Deep analysis of the web accessibility and usability of videoconferencing platforms for blind people Tania Calle-Jimenez, Bryan Munoz, Ecuador Using user performance and perception dashboards to guide the development of augmented reality platform features Mohammad Jeelani, USA	
179	Holistic Design for a Sustainable and Beautiful Changing of Cities and Communities Co-Chairs: Fátima Pombo and Soraia Ala, Portugal	HDCS
10:00-12:00 AHFE 14: PACIFIC F	Holistic design driven by the user experience for the renovation of industrial cultural heritage Gaëlle Pillault, Fátima Pombo, Portugal Generation Y as a catalyst for a paradigm shift in urban mobility Eduardo Noronha, João Dias-de-Oliveira, Portugal Towards safer mobility in cities and communities: A framework to assist the design process of cycling warning systems Pedro Santos, António Gomes, Violeta Clemente, Portugal Original-copy: Ideation for a lampshade inspired by nature Pedro Maia, Raul Pinto, Portugal Smart product: Product requirements for the development of a responsive mirror for elderly support Soraia Ala, Alexandre Cruz, Portugal Product design education: A kit for building empathy Silvína Félix, Miriam Reis, Portugal	

Monday, July 24

12:00 - 13:00 • ENJOY LUNCH AT THE RESTAURANT OF YOUR CHOICE

<p>181</p>	<p>Applying Cognitive Principles to Design of Interfaces and Behavior Analysis Chair: Kim Vu, USA</p>	<p>CN</p>
<p>13:00-15:00 AHFE 1: FOOTHILL A</p>	<p>Do increased engagement effects in lecture videos improve comprehension? Jessica Mar, Kim-Phuong L. Vu, USA</p> <p>Remembering passwords: The role of instructions Kim-Phuong L. Vu, Ha Nguyen, Uyen Bui, USA</p> <p>Evaluation of pedometer interfaces for mobile apps Alina Tran, Kim-Phuong L. Vu, USA</p> <p>Right visual field is advantageous in detecting different color: An implication for appropriate arrangement of digital graphics on a display Seiko Kawashima, Motoharu Takao, Senri Komiya, Mana Hattori, Japan</p> <p>Use of eye-tracking system to evaluate selective attention in children with motor difficulties Daniela Idrovo, Martha Cobos, Nataly Alvarado, Patricia Margarita Ortega Chasi, Esteban Mora, Jaime Burbano, Francisco D. Salgado, Ecuador</p> <p>Exploring the role of visual attention in aggressive behavior: Evidence from eye-tracking measurements Alexandra Calle, Patricia Margarita Ortega Chasi, Andrea Argudo-Vásconez, Martha Cobos, Omar Alvarado, Ecuador</p>	
<p>183</p>	<p>Human Reliability and Technology Co-Chairs: Nancy Lightner and Motoharu Takao, USA/Japan</p>	<p>EHMD</p>
<p>13:00-15:00 AHFE 3: FOOTHILL C</p>	<p>Measuring subjective usability of medical devices - questionnaire development and evaluation Marisa Koopmann, Bernhard Wandtner, Michael Thorwarth, Karsten Nebe, Germany</p> <p>Suspension pillow reduces stress and improves nocturnal sleep Motoharu Takao, Hiromi Sakamoto, Japan</p> <p>Inclusive design for older adult with degenerative scoliosis: The integration of monitoring sensors and functional garment Xiaolu Li, Joanne Yip, Ruixin Liang, Jun Zhang, China</p> <p>Re-establishing the balance: A new community-based chronic disease management service model in China Renxuan Liu, Duan Wu, China</p> <p>Highlighting usability in system selection Nancy Lightner, Helen Fuller, Timothy Arnold, USA</p>	
<p>184</p>	<p>Design of Manufacturing Systems and Processes Co-Chairs: Marta Pinzone and Marisa Schirmer, Italy/Germany</p>	<p>MFG</p>
<p>13:00-15:00 AHFE 4: FOOTHILL D</p>	<p>Key competencies for circular manufacturing Marta Pinzone, Marco Taisch, Italy</p> <p>Developing intelligent technologies to support employees in manufacturing planning: applying a scenario planning method to consider future of work Marisa Schirmer, Florens Burgert, Christina Mayer, Susanne Mütze Niewöhner, Germany</p> <p>How Singapore's manufacturing small and medium size enterprises embrace Industry 4.0 Thomas Menkhoff, Gopalakrishnan Surianarayanan, Singapore</p> <p>Ergonomic posture assessment and tracking for industrial cyber-physical-human systems: A case study in the heavy metalworking industry Eduardo Pontes, Azin Moradbeikie, Rolando Azevedo, Cristiano Jesus, Sergio Lopes, Portugal</p>	

Monday, July 24

185	Usability and User Experience Applications IV Co-Chairs: Sandrine Prom Tep and Juan Calle, Canada/Ecuador	UUE
13:00-15:00 AHFE 5: FOOTHILL E	<p>The impact of cobranding strategy on attention, brand equity, user experience and consumer intentions toward the brand: An eye tracking study Sandrine Prom Tep, Manon Arcand, Fabien Durif, Luis Carlos Castiblanco Reyes, Canada</p> <p>Systematic literature review in usability web: A tertiary study Catalina Astudillo-Rodriguez, Santiago Cedillo, Priscila Verdugo, Jackelín Verdugo, Ecuador</p> <p>Controlled experimentation to improve the usability of business management systems: UDA-ERP case Catalina Astudillo-Rodriguez, Juan Calle-Mosquera, Esteban Crespo-Martinez, Gabriela Chica-Contreras, Julio Mosquera-Gutierrez, Ecuador</p> <p>Identification of similar experiences that affect the mental model of cryptocurrency wallets Beomyoung Jeong, Sung H. Han, Kimin Kwon, South Korea</p> <p>Human-machine interface user experience of intelligent manufacturing industrial control software Rong Jiang, Huai Cao, China</p> <p>Automated charging of electric cars for improving user experience and charging infrastructure utilization Mario Hirz, Stefan Lippitsch, Austria</p> <p>Design activists: (Re)thinking and speculating about pedagogical strategies and cultural playful interactive experiences Paulo Maldonado, Portugal</p>	
186	Data Dependency II Co-Chairs: William Lawless and Ariel M. Greenberg, USA	HFRDUS
13:00-15:00 AHFE 6: FOOTHILL F	<p>Leveraging manifold learning and relationship equity management for symbiotic explainable artificial intelligence Eric Davis, Sourya Dey, Adam Karvonen, Ethan Lew, Donya Quick, Panchapakesan Shyamshankar, Ted Hille, Matt Lebeau, USA</p> <p>Understanding interference within and between human-machine teams Eugene Santos, USA</p> <p>AI trust framework and maturity model: A zero trust approach to zero trust for AI driven autonomous human machine teams & systems Michael Mylrea, Nikki Robinson, USA</p> <p>Multiple agents interacting via probability flows on factor graphs Francesco Palmieri, Krishna Pattipati, Giovanni Di Gennaro, Amedeo Buonanno, Martina Merola, USA</p> <p>Towards data gathering outside the lab to develop better human-robot teams Paul Robinette, USA</p> <p>Psychometric properties of team resilience and team complementarity as human-autonomy team cohesion factors Samantha Berg, Catherine Neubauer, Shan Lakhmani, Andrea Krausman, Sean Fitzhugh, Daniel Forster, USA</p>	
187	Modeling, Simulation and Mixed Reality Co-Chairs: Chris Lowe and Lorena Olmos Pineda, UK/Mexico	SYSI
13:00-15:00 AHFE 7: FOOTHILL G1	<p>Correlation between dominant sensory mechanisms during interaction processes with virtual products and human interaction cycles Lorena Olmos Pineda, Jorge Gil Tejada, Mexico</p> <p>Correlation between dominant sensory mechanisms during interaction processes with virtual products and gender Jorge Gil Tejada, Lorena Olmos Pineda, Mexico</p> <p>Defining optimal lifting loads using augmented reality and internet of things Jorge A. González Mendivil, Mlguel X. Rodríguez-Paz, Eduardo Caballero-Montes, Israel Zamora-Hernandez, Mexico</p> <p>A discovery on creativity delivery tools – from the needs of hybrid-using 3D modeling software Yuan Yin, UK</p> <p>Determination of most effective medium for E-learning by analyzing the differences in various types of media Jun Iio, Kenta Kawamoto, Tatsuya Sashizawa, Kumiko Nakai, Japan</p> <p>The usage of 3D building information management (BIM) and digital twin models to support the management of human factors integration issues Chris Lowe, Neil Hall, UK</p>	

Monday, July 24

188	Human Factors in Education, Technostress and Fun in Learning Co-Chairs: Oliver Tian and Henry Paananen, Singapore/Finland	HFBMS
13:00-15:00 AHFE 8: FOOTHILL G2	<p>Unbundling training towards just-in-time learning and re-bundling to discover knowledge Oliver Tian, Shanlynn Lee, Vesa Salminen, Singapore/Finland</p> <p>Enabling active learning experience in XR environments – identifying the design elements for XR learning objects Henry Paananen, Trevor Prendergast, Vesa Salminen, Finland/Ireland</p> <p>Development of novel technostress instrument among education and health care sectors Kimmo Vanni, Antti Syvanen, Jarmo Viteli, Finland</p> <p>Contrasting the profiles of female vs male quantity surveyors in South Africa Danie Hoffman, Tebogo Hellen Ngele, Benita Zulch, South Africa</p>	
189	Human Factors in Cyberattacks, Training and Education Co-Chairs: Nineta Polemi and Stewart Kowalski, UK/Norway	CYBER
13:00-15:00 AHFE 9: PACIFIC A	<p>Bringing humans at the core of cybersecurity: Challenges and future research directions Kitty Kioskli, Haralambos Mouratidis, Nineta Polemi, UK</p> <p>Enhancing practical cybersecurity skills: The ECSF and the CyberSecPro European efforts Nineta Polemi, Kitty Kioskli, Greece</p> <p>C. S. Technopoly: A megagame for teaching and learning cybersecurity Stewart Kowalski, Eduard Von Seth, Erjon Zoto, Norway</p> <p>Training the trainers for cybersecurity exercises - developing EXCON-teams Grethe Østby, Bjørn Emil Selebø, Stewart Kowalski, Norway</p> <p>Architectural design for secure smart contract development Myles Lewis and Chris Crawford, USA</p>	
190	Emerging Needs for Reliability and Inclusivity Co-Chairs: Nicole Siebert and Lusi Morhayim, Germany/UK	HFAS
13:00-15:00 AHFE 10: PACIFIC B	<p>Effects of art courses on older adults Liang-ming Jia, Fang-wu Tung, Taiwan</p> <p>Digital support requirements for the care community QuartierPflege Nicole Siebert, Hannes Wenner, Tim Kuball, Florian Kiel, Matthias Beggiano, Stefan Oer, Georg Jahn, Germany</p> <p>Humanizing cancer clinics: Coproducing an interdisciplinary tool to examine the link between cancer patients' mental health and architecture Lusi Morhayim, Yasmin Garcia-Sterling, Katriina Whitaker, Keri Wong, UK</p> <p>Designing early detection screening system for dementia in Indonesia Agatha Maisie Tjandra, Ziyi Li, Chien-Hsu Chen, Taiwan</p> <p>Perceiving through colors: Visual supports for children with autism Neda Barbazi, Cecilia Xi Wang, USA</p> <p>Changing Death – initial insights for software practitioners in Thanatopractice Dominic Lammert, Stefanie Betz, Nele Wulf, Jari Porras, Germany</p>	
191	Simulation-Based Human Factors Research: Issues and Findings Co-Chairs: Julia Wright and Corey K. Fallon, USA	HFSIM
13:00-15:00 AHFE 11: PACIFIC C	<p>The history and heritage of the age of simulation Bryan Lintott, Norway</p> <p>Human factors in discovery phase of TRLs and HRLs Brett Jefferson, Jessica Baweja, USA</p> <p>Assessing the impact of automated document classification decisions on human decision-making Mallory Stites, Breannan Howell, Phillip Baxley, USA</p> <p>TASIC - Tromsø Arctic Simulation Centre Brynjjar Andersen Saus, Norway</p>	
192	Product Design + Design Education Chair: George Chow, USA	IPID
13:00-15:00 AHFE 12: PACIFIC D	<p>To mandate or not to mandate: Internships in industrial design education Betsy Barnhart, Carly Hagins, Katherine Tierney, USA</p> <p>WIP: Interdisciplinary design course and community empowerment Elham Morshedzadeh, USA</p> <p>Anticipate, embrace, and leverage ambiguity Paul Skaggs, USA</p> <p>Cardboard watercraft: a case study in teaching sustainable design George Chow, USA</p> <p>The challenge of designing a low-cost violin for first-time users: Case study Jose Rivera-Chang, USA</p>	

193	Augmenting Capabilities for Decision Making in Service System Chair: Kazuyoshi Hidaka, Japan	HSSE
13:00-15:00 AHFE 13: PACIFIC E	<p>Game theoretic modeling of user innovation and venture M&A processes Sangjic Lee, Kohei Nishiyama, Nariaki Nishino, Japan</p> <p>Customer action self-selected questionnaire system for service process evaluation Hisashi Masuda, Japan</p> <p>Influence of pre-video explanation through an acquaintance on perception and purchase intention in Japanese sake tasting Kengo Matsumura, Hisashi Masuda, USA</p> <p>Exploring role of shared responsibility in service systems: A deliberative democracy perspective Md Abul Kalam Siddike, Kazuyoshi Hidaka, Japan</p>	
194	Human-Centered Aerospace Systems and Sustainability Applications II Co-Chairs: Kaitlin McTigue and Megan Parisi, USA	HCASSA
13:00-15:00 AHFE 14: PACIFIC F	<p>Task-based design method of civil aircraft cockpit dispatch message Lingchen Zhou, Zhu Hongyu, Zuo Pianpian, China</p> <p>Effects of communication delay on human spaceflight missions Kaitlin McTigue, Megan Parisi, Tina Panontin, Alonso Vera, Shu-Chieh Wu, USA</p> <p>Deficits in cognitive resilience of commercial pilots: The case for a CRM tenet on computer information and automation in digital flight operations Mark Miller, Sam Holley, USA</p> <p>Human-machine interaction: Is there a strategic direction towards space exploration? Celina P Leão, Vinicius Silva, Susana Costa, Portugal</p> <p>Modeling teamwork over time: Findings from long-duration space flight simulations Shane Mueller, Elizabeth Veinott, Kathleen Mosier, Ute Fischer, USA</p>	
REFRESHMENTS: 15:00 - 15:30 • ROOM: SoMA (2ND LEVEL)		
196	Human Factors in Aviation and Space Co-Chairs: Felix Teifer and Julián García, Austria/Colombia	AVI
15:30-17:00 AHFE 1: FOOTHILL A	<p>Black hole illusion in aviation – a simulator experiment to examine predominant criteria in a real-life environment Felix Teifer, Ivan Sikora, Alexandros Paraskevas, Austria</p> <p>Ergonomic evaluation involved in an eVTOL vehicle design process for the application of future transport operations in urban ecosystems Julián García, Sebastian Munoz Pelaez, Pablo Alvarado, Colombia</p> <p>Flying blind: Exploring the visual cues used by helicopter pilots in degraded visual environments Brandon Dreslin, Molly C Mersinger, Shivani Patel, Alex Chaparro, USA</p> <p>Simulation study of human input devices in a variable gravity environment for commercial space transportation Kazuhiko Momose, Troy Weekes, Thomas Eskridge, USA</p> <p>Inferring collaboration strategies and usability from remote observations in a spaceflight analog environment Jessica Marquez, Shivang Shelat, Jimin Zheng, John Karasinski, USA</p>	
197	User Research Co-Chairs: Mayra Pacheco Cardin and Yingzhi Yu, Mexico/China	ED
15:30-17:00 AHFE 2: FOOTHILL B	<p>Grasping posture study in one-handed touch screen operations based on posture coding Xing Xiao, Yuxuan Liu, Yue Zhu, Xinmiao Nie, Haining Wang, China</p> <p>Anthropometric characterization of Campeche's population Mayra Pacheco Cardin, Juan Luis Hernández-Arellano, Julian Aguilar-Duque, Mexico</p> <p>Characteristics and trends of Chinese phoenix pattern based on bibliometrics Yingzhi Yu, China</p> <p>Ergonomic evaluation of a new handle for laparoscopic dissector based on upper extremity posture Rui Jiang, Yujia Du, Haining Wang, China</p> <p>Heart rate variability during repetitive work in the presence of fatigue Diogo Carvalho, Luís Silva, Miguel Carvalho, Mariana Dias, Nélson Costa, Duarte Folgado, Maria Lua Nunes, Hugo Gamboa, Elazer Edelman, Latvia/Portugal/USA</p>	

Monday, July 24

198	Maritime Human Factors – Novel Approaches to Understanding Human Work in Complex Operations Co-Chairs: Gesa Praetorius and Charlott Sellberg, Sweden	MAR
15:30-17:00 AHFE 3: FOOTHILL C	<p>Identifying the needs and barriers of next generation smart ships on crew skills and competencies Joakim Dahlman, Sweden</p> <p>Integrated planning for safe and efficient maritime autonomous transport operations Kay Fjertoft, Even Holte, Trine Stene, Norway</p> <p>Human-machine interaction challenges for bridge operations in large passenger ships and future improvements from the Deck Officers' perspective Yemao Man, Emmanuel Brorsson, Petra Björndal, Sweden</p> <p>Design of a sustainable and modular shuttle vessel for inland waterways Sarah Jane Cipressi, Massimo Di Nicolantonio, Emilio Rossi, Italy</p> <p>The impact of safety factors on decision-making in maritime navigation Hui Xue, Johan-Fredrik Røds, Bjørn-morten Batalden, Norway</p>	
199	Safety and Transportation Human Factors Co-Chairs: Norbert Lechner and Sérgio Pedro Duarte, Austria/Portugal	SMHF
15:30-17:00 AHFE 4: FOOTHILL D	<p>Managing fatigue in aviation maintenance while promoting a human factors safety reporting system; a strategic approach to aviation safety Mark Miller, Bettina Mrusek, Jeff Herbic, USA</p> <p>Influence of time pressure on driver's response time under stressed conditions Arka Dey, Sanhita Das, India</p> <p>Requirements and expectations for truck platooning: A multidisciplinary perspective Sérgio Pedro Duarte, Liliana Cunha, Luciano Moreira, Sara Ferreira, António Lobo, Portugal</p> <p>H2-fueled passenger ship hazards: Challenges in risk assessment for a front edge technology application Arianna Bionda, Marta Tome Maintega, Oscar Noguero Torres, David Sanchez, Brendan Sullivan, Italy</p> <p>Exoskeletons - hype or real solution for prevention of musculoskeletal disorders Norbert Lechner, Austria</p>	
200	Physical Ergonomics and Work-Related Musculoskeletal Disorders II Co-Chairs: Mohamed Mokdad and Rui Grazina, Algeria/Portugal	SOE
15:30-17:00 AHFE 5: FOOTHILL E	<p>Women weaving traditional carpets in Algeria: The ergonomics of weaving posture Mohamed Mokdad, Bouhafs Mebarki, Mourad Semmani, Shaikha Aljunaidi, Bahrain/Algeria</p> <p>Effect of ambient temperature and humidity on muscle fatigue of pilots Biyun Zhou, Bo Chen, Jingyu Liu, Yingfang Ao, Li Ding, China</p> <p>The impacts of multi-agent quantity, type and transparency on mental workload, situation awareness and human out-of-the-loop Xinran Xu, Ruifeng Yu, Sihan Ji, Minhui Yuan, China</p> <p>Occupational and physical therapists' exposure to physical risk factors and pain during therapy sessions Musaed Alnaser, Mohammed Nadar, Kuwait</p> <p>Workload and pain for men and women janitors of different age groups Dominic Pina, Carisa Harris-Adamson, Melissa Afterman, Max Blumberg, Javier Freire, USA</p>	
201	Design Strategy and User Experience III Co-Chairs: Zhixin Gui and Tingshu Chen, China	UUE
15:30-17:00 AHFE 6: FOOTHILL F	<p>Does the automated essay scoring system reduce motivation to learn English writing? A case study of Chinese college students Zhixin Gui, Duoduo Zhang, Yiming Bai, J. Ouyang, China</p> <p>The effects of communication cues on group decision making in online conferences Tingshu Chen, Ren-ke He, China</p> <p>Using linear regression to investigate the relationship between user experience and UX components in cryptocurrency wallets Kimin Kwon, Sung H. Han, South Korea</p> <p>Aligning user experience with communication theory to explain why we love and hate hotels Richard Steinberg, George White, USA</p> <p>Agile and reliable design decisions based on the perception of the target audience Raquel Marzo Roselló, Adrian Morales Casas, Spain</p> <p>Virtual fitness coach application: Interaction design by using Kano-AHP-QFD model Chang Guo, AngLu Li, WanYue Luo, China</p>	

202	Human Factors in Smart City Development Co-Chairs: Natacha Silva and Vesa Salminen, Portugal/Finland	HFBMS
15:30-17:00 AHFE 7: FOOTHILL G1	<p>The application of brand narrative theory to brand building in creative cities: A case study of Nanjing Xu Yang, Xin Sun, Dandan Xie, China</p> <p>CO2 free smart mobility hub: MORE industrial park Markus Sihvonen, Marina Weck, Finland</p> <p>Macroergonomic analysis of structure (MAS) of community association of the city of Florianópolis Marcos Vinícius Schmidt Salvador, Flávio Anthero Nunes Vianna dos Santos, Elton Moura Nickel, Brazil</p> <p>Quantitative analysis and modeling of the factors that determine the quality of life in the city council of Chile Gonzalo Ríos, Hanns De la Fuente-Mella, Nelson Lay-Raby, Chile</p>	
203	Ethical and Psychological Human Factors in Industrial Robotics II Chair: Iveta Eimontaite, UK	MFG
15:30-17:00 AHFE 8: FOOTHILL G2	<p>Trust evaluation of automated vehicles: A systematic review Zhilin Hu, Yang Xing, Karl Proctor, Andrew Owens, Yifan Zhao, UK</p> <p>International comparison on obstacles to service conversion of manufacturing industries Keiko Toya, Japan</p> <p>Human factor analysis in robotic and autonomous systems for military applications Hae-in Lee, Seokwon Lee, Hyo-sang Shin, Antonios Tsourdos, Sarah Fletcher, UK</p>	
204	Sustainable Construction and Leadership Co-Chairs: Inge Pieterse and Douglas Aghimien, South Africa/UK	SCON
15:30-17:00 AHFE 9: PACIFIC A	<p>Comparative technical-economic study of a reinforced concrete building and a building with prestressed prefabricated elements. Samborondón - Ecuador Leonardo Villacreses, Boris Orellana-Alvear, Natalia Pacurucu, Ecuador</p> <p>Achieving circular economy adoption in the construction industry: HTO cross in a developing country Samuel Adekunle, Nyiko Chauke, Matthew Ikuabe, Clinton Aigbavboa, South Africa</p> <p>Key leadership skills for effective project delivery: placing the lens on construction 4.0 Matthew Ikuabe, Clinton Aigbavboa, Ayodeji Oke, Samuel Adekunle, Sibusiso Khambule, South Africa</p> <p>Students' awareness and proficiency in construction 4.0 Patience Tunji-Olayeni, Clinton Aigbavboa, Ayodeji Oke, Emmanuel Uzundu, South Africa</p> <p>Principal component analysis of factors affecting construction project transaction costs in developing economies Matthew Ikuabe, Clinton Aigbavboa, Ayodeji Oke, South Africa</p>	
205	Design for Inclusion and Ageing Society Co-Chairs: Satoshi Kose and Kazuhiko Yamazaki, Japan	DI
15:30-17:00 AHFE 10: PACIFIC B	<p>Inclusive design: Comparing models of living environments for older people Vesna Zegarac Leskovic, Vanja Skalicky Klemenčič, Slovenia</p> <p>Housing in Japan toward a super-ageing Society: How far have we accomplished and what remains to be done? Satoshi Kose, Japan</p> <p>Inclusiveness in the design of mobile payment products for Chinese elderly users Liyuan Bao, Le Xu, Liu Ying, China</p> <p>Framework for social implementation Kazuhiko Yamazaki, Japan</p> <p>Good practices in implementing senior-friendly design in selected public institutions across the European Union Beata Fabisiak, Robert Klos, Anna Jankowska, Jasna Hrovatin, Ryann Deloso, Poland</p> <p>Towards dementia-friendly society: Design and interactive technologies for collaborative caregiving and personalised non-pharmacological therapy Masato Kagiwada, Japan</p> <p>Constructive gaming skills to mitigate isolation in senescence Margarida Azevedo, Joao Lemos, Portugal</p>	

206	Product Design + New Interpretation Co-Chairs: Yong-Gyun Ghim and Cliff Shin, USA	IPID
15:30-17:00 AHFE 11: PACIFIC C	<p>Synthesizing humans with the planet: Regenerative agriculture and its relevance and application to industrial design Braden Trauth, USA</p> <p>Industrial design guidelines for robot acceptance: The role of morphological elements of mobile service robots in a restaurant environment Domagoj Bui, Yong-Gyun Ghim, USA</p> <p>Relation between the reality of digital and texture information using onomatopoeia Wonseok Yang, Misato Akiba, Japan</p> <p>Interdependency between complexity and product longevity Cliff Shin, USA</p> <p>Designing mobile service robots: Roles of the visual interface and manipulators for human perception Yong-Gyun Ghim, USA</p> <p>Urban mobility attractors Juan Salamanca, USA</p>	
207	ISSIP HSSE Best Paper Award Chair: Christine Leitner, UK	HSSE
	15:30-17:00 AHFE 12: PACIFIC D	
208	Additive Manufacturing, Modeling Systems and 3D Prototyping Co-Chairs: Massimo Di Nicolantonio and Emilio Rossi, Italy	AMMSP
15:30-17:00 AHFE 13: PACIFIC E	<p>Automatic generation technology of dimension chain considering assembly characteristics Yang Zeng, Xiaojun Liu, China</p> <p>Design for the combination of additive manufacturing parts with products already developed - An hybrid approach Álvaro M. Sampaio, Carina Lopes, Adriana Santos, André Lima, António J. Pontes, Portugal</p> <p>Suitability of sustainable 3D-Printing in the field of yacht design: Houseboats for student communities and tourism Massimo Di Nicolantonio, Italy</p> <p>The contribution of additive manufacturing in the design of inclusive prostheses Emilio Rossi, Italy</p>	
209	Education for Creativity, Design and Innovation Co-Chairs: Kevin Clark and Aicha Dif, USA/Algeria	CIE
15:30-17:00 AHFE 14: PACIFIC F	<p>Tokyo sensory safari: Experience innovation and human factors immersion Kevin Clark, Kazuhiko Yamazaki, James Kwolyk, Sruti Vijaykumar, USA</p> <p>The recognition of novelty in entrepreneurship education Aicha Dif, Zahra Hamdani, Algeria</p> <p>Examining the effects of near and far cues on creativity Mritunjay Kumar, Satyaki Roy, Ahmed Sameer, Amit Kundal, India</p> <p>Eco innovation and firm performance: A META analysis Rocky Mahmud, Norway</p> <p>Fashion designers' creativity inside organizations & job satisfaction – A case study João Barata, Rui Miguel, Portugal</p> <p>Inspiration mining: Exploring startup research(ers) strategies Part III Paulo Maldonado, Pedro Seiça, Ana Margarida Andr, Vera Matos, Portugal</p>	
REFRESHMENTS: 17:00 - 17:30 • ROOM: SoMA (2ND LEVEL)		

<p>211</p>	<p>Applications in Robots, Drones and Unmanned Systems III Chair: William Lawless, USA</p>	<p>HFRDUS</p>
<p>17:30-18:45 AHFE 1: FOOHILL A</p>	<p>Mixed reality control of a mobile robot via ROS and digital twin Carsten Wittenberg, Benedict Bauer, Nicholas Schloer, Germany Verification of a search-and-rescue drone with humans in the loop Holly Hendry, Mark Chattington, Ana Cavalcanti, Cade McCall, UK Human-SWARM partnerships: A systematic review of human factors literature Victoria Steane, Jemma Oakes, Samson Palmer, Mark Chattington, UK Using EAST to inform systems architecture design: Considerations relating to the use of UAVs in search and rescue missions Victoria Steane, Sophie Hart, Jemma Oakes, Samson Palmer, Mark Chattington, UK Community interface of gated communities as a docking space for future unmanned distribution Yanni Cai, China To shoot or not to shoot? Human, robot, & automated voice directive compliance with target acquisition & engagement Giovanna Camacho, Matthew Bolton, Joseph Loggi, Kallia Smith, Emmett Rice, USA</p>	
<p>212</p>	<p>Digital Safety/Prevention Co-Chairs: Maria Grazia Gnoni and Viktorijo Malisa, Italy/Austria</p>	<p>SMHF</p>
<p>17:30-18:45 AHFE 2: FOOHILL B</p>	<p>Prevention ecosystem integrated into digitalized manufacturing Viktorijo Malisa, Georg Effenberger, Austria How stress and time spent on task affect safe behavior at work: Evidence from experiment simulating work in hazardous conditions in virtual reality Asta Savanevičienė, Gita Šakytė-Statnickė, Lina Girdauskienė, Lithuania Artificial intelligence for risk assessment in hybrid workplace and flexible work Claudia Giliberti, Raffaele Mariconte, Laura De Angelis, Agnese Martini, Emma Pietrafesa, Giuditta Simoncelli, Italy The power of safety data to prevent work related incidents: empirical evidences from pilot projects in Italy Maria Grazia Gnoni, Armando Guglielmi, Giuseppe Campo, Diego De Merich, Daniele De Santis, Antonio Leva, Michele Villa, Antonia Donvito, Italy</p>	
<p>213</p>	<p>Cultural Design Co-Chairs: Carla Rodrigues and Liu Ying, Portugal/China</p>	<p>ED</p>
<p>17:30-18:45 AHFE 3: FOOHILL C</p>	<p>Exploring the cultivation of artistic archaeology talents in the context of New Liberal Arts in China: A case study of 3D image design course Liu Ying, Liyuan Bao, China Social media in rural life: Design innovation for participatory cultural communication in China Hezhu Pan, Mengfei Liu, China The application of digital art in experimental font design Li Cheng Xie, Chao Zheng, Xinhao Zhan, Yichen Zeng, Xinlei Zhang, Bingkun Qiu, China Challenges and contributions of collaborative design methodologies in design for territories Carla Rodrigues, João Neves, Portugal A comparative study of seagoing vessels between China and Europe from early 15th century to early 17th century Yan Huajie, China</p>	
<p>214</p>	<p>User Interaction Co-Chairs: Qichao Zhao and Fenglin Gao, China</p>	<p>ED</p>
<p>17:30-18:45 AHFE 4: FOOHILL D</p>	<p>Prediction of purchase decision making on digital live streaming Interface on MT: A comparative research of multi-modal Human-Machine Interaction Qichao Zhao, Qian Zhou, Qingju Wang, Ying Gao, Ping Wu, China The Sound Nest project: Mobile application design for auditory cognitive training of stressed people in the post epidemic era. Fenglin Gao, Fei Xu, China Multiple-view visualization awareness model and measurement method construction: Based on quantitative analysis of situation awareness Xuan He, Peng Ji, China Design of an intelligent interactive handgrip training device for the elderly based on ergonomic applications Le Xu, Liyuan Bao, China User interface consistency experience in composite cross-device interaction JiaHe Zhang, Yuan Xiang, China Graphical and ergonomic evaluation of symbols on traffic signs João Neves, Paulo Noriega, Daniel Raposo, Rogério Ribeiro, Portugal</p>	

Monday, July 24

215	Driver Performance, Behavior and Physiology II Co-Chairs: Molly C. Mersinger and Riku Kikuta, USA	RR
17:30-18:45 AHFE 5: FOOTHILL E	High-speed train drivers' operation performance: A focus group study with drivers and managers Ziteng Wang, Yanyi Li, Yi Wang, Wei Zhang, China	
	Risk assessment and observation of driver with pedestrian using instantaneous heart rate and HRV Riku Kikuta, Daniel Carruth, John Ball, Reuben Burch, Ichiro Kageyama, USA/ Japan	
	Driver monitoring systems: Design considerations for aging drivers Molly C. Mersinger, Daniel Graff, Carmen Van Ommen, Sabrina Ehrenfort, Jamie Talley, Alex Chaparro, USA	
	Beyond detection: Intervention approaches in driver state monitoring systems Lenart Motnikar, Zoja Anžur, Peter Fröhlich, Alexander Mirnig, Manfred Tscheligi, Austria	
216	HSSE Closing and Future Planning Co-Chairs: Christine Leitner, Clara Bassano, Debra Satterfield, Jens Neuhüttler, UK/Germany/Italy/USA	HSSE
	17:30-18:45 AHFE 6: FOOTHILL F	
217	Human - System Interaction Studies Co-Chairs: Filipa Carvalho and Fabien Bernard, Portugal/France	SYSI
17:30-18:45 AHFE 7: FOOTHILL G1	Human errors in helicopter maintenance: Overview of recommendations for improving safety Fabien Bernard, Raphael Paquin, Kévin Dos-Santos, France	
	Single-file movement experiments of male under the influence of rhythm Maoyu Li, Lizhong Yang, Ping Zhang, Nan Jiang, Xinmiao Jia, Hanchen Yu, China	
	Trajectory-based optimization of safety and process efficiency in human-robot collaboration Sumona Sen, Hans Juergen Buxbaum, Germany	
	Ergonomic work analysis in the production of interiors for the transport industry Ana Clemente, Filipa Carvalho, Portugal	
218	Student Education Co-Chairs: Shiyu Wang and Yuqi Li, Taiwan/China	TELS
17:30-18:45 AHFE 8: FOOTHILL G2	From students, for students: Exploring the online collaborative design education method Shiyu Wang, Shuo-fang Liu, Taiwan	
	Early education robot for preschool children Sijia Wang, Yuqi Li, China	
	Effects of online gaming behaviors on Filipino students' perceived academic performance through multiple regression analysis Phoebe Nicole Arreola, Angel Gabriel Hernando, Jonelle Matthew Lugares, Gene Oliver Roxas, Yoshiki Kurata, Philippines	
	The prospects of the use of industry 4.0 technologies in higher education institutions: Students' optimism and concerns Kohei Kawaguchi, Buddhi Pathak, Michael D. Dzandu, UK	
219	Communication of Design III Chair: Amic G. Ho, Hong Kong	HFCD
17:30-18:45 AHFE 9: PACIFIC A	Communication of a theater play. An exploration from graphic design Monica Lameiro, Portugal	
	The democratization of reading: From the printed pocketbook to the eBook Ana Do Carmo, Elisabete Rolo, Portugal	
	Which can better guide consumer behavior, the appearance or the packaging information of fruit: A study based on eye movement experiment Sha Liu, Yang Long, Junren Wang, China	
	Types and role of the bullet points system in reading experience Amic Ho, Hong Kong SAR China	
	Interweaving design and computation: Deep collaboration between humans and machines in the intelligent era Yan Dong, Hanjie Yu, Qiong Wu, China	

220	Biomedical Design and Human Interfaces Co-Chairs: Kai-yu Tong and Natalia Danilina, Russia/Hong Kong	HIBEA
17:30-18:45 AHFE 10: PACIFIC B	<p>Mathematical analysis of daily ECG in assessing the effectiveness of obesity treatment in young patients Irina Kurnikova, Shirin Gulova, Natalia Danilina, Ikram Mokhammed, Artyom Yurovsky, Russia</p> <p>Development of a home-based augmented reality rehabilitation system for the elderly with disabilities Xiaoyi Wang, Yehua Shi, Cathy Lau, Kai-yu Tong, Hong Kong SAR China</p> <p>Detecting and monitoring wandering in AD patients with an integrated device based on Humanitude Gabriela Cervantes Alarcón, Sergio Navarro Tuch, Ariel Lopez Aguilar, Rogelio Bustamante-Bello, Lili Marlene Camacho Bustamante, Mexico</p> <p>Humanitude: First step towards the creation of a voice-bot companion for persons with dementia Daniel Isaac Ruiz Cruz, Sergio Navarro Tuch, Ariel Lopez Aguilar, Rogelio Bustamante-Bello, Lili Marlene Camacho Bustamante, Mexico</p> <p>Dynamic control assignment and automated risk assessment for external control interfaces in the operating room based on ISO IEEE 11073 SDC Noah Wickel, Okan Yilmaz, Klaus Radermacher and Armin Janß, Germany</p>	
221	Influencing the Design of the Metaverse Co-Chairs: Jussi Kantola and Louis Rosenberg, Finland/USA	HCMDE
17:30-18:45 AHFE 11: PACIFIC C	<p>A scoping review on certified immersive virtual training applications Ebo Kwegyir-Afful, Janne Heilala, Jussi Kantola, Finland</p> <p>Designing the metaverse: A scoping review to map current research effort on ethical implications Matteo Zallio, Takumi Ohashi, John Clarkson, UK/Japan</p> <p>A study of the development status and purchase intention factors of metaverse NFT collectibles Junping Xu, Hui Li, Chaemoon Yoo, Younghwan Pan, China/South Korea</p> <p>Anonymous collaboration in metaverse Taneli Nyssönen, Olli Heimo, Seppo Helle, Teijo Lehtonen, Tuomas Mäkilä, Jussi Jauhainen, Finland</p> <p>The metaverse as an AI-mediated tool of targeted persuasion Louis Rosenberg, USA</p>	
222	Applications in Cognitive Assessment and Physical Strain Co-Chairs: Belén Carballo Leyenda and Lucas Paletta, Spain/Austria	CCIoT
17:30-18:45 AHFE 12: PACIFIC D	<p>Laboratory assessment of heat strain in female and male wildland firefighters Belén Carballo Leyenda, Jorge Gutiérrez Arroyo, José Gerardo Villa Vicente, Fabio García-Heras, Juan Rodríguez Medina, Jose A Rodríguez-Marroyo, Spain</p> <p>Real-time remote stress monitoring based on specific stress modelling considering load characteristics of different military forces Alexander Almer, Anna Weber, Florian Haid, Lucas Paletta, Michael Schneeberger, Dietmar Wallner, Paul Glanz, Philipp Klöckl, Dominik Eder, Thomas Hölzl, Austria</p> <p>Impact of acute physical exercise on cognitive performance Michael Schneeberger, Melanie Lenger, Martin Pszeida, Lisa Heiler, Lucas Paletta, Helmut Simi, Dietmar Wallner, Silvia Russegger, Anna Weber, Alexander Almer, Austria</p> <p>Towards immersive skill training for first responders with biosensor-based assessment of situation awareness Amir Dini, Michael Schneeberger, Martin Pszeida, Lisa Heiler, Lucas Paletta, Austria</p> <p>Development of an automated microclimate adjustment system based on concentration levels of students Jasper Koh, Prasanna Thangaraja, Kenneth Y. T. Lim, Singapore</p> <p>Exploring the implementation of AI in a cost-effective device for predicting sleep quality Jing Peng Lee, Bruce Yu, Kenneth Y. T. Lim, Singapore</p>	
223	Human Factors in Artificial Intelligence and Social Computing III Co-Chairs: Hu Zhao and Hans Schumann, China/USA	AISC
17:30-18:45 AHFE 13: PACIFIC E	<p>A study on the current state of development of data-driven intelligent design and its impact on design paradigm Hu Zhao, Yuan Xiang, China</p> <p>Lowering the risk of bias in AI applications Jj Link, Helena Dadakou, Anne Elisabeth Krüger, Germany</p> <p>Human Swarms" of novice sports fans beat professional handicappers when forecasting NFL football games Louis Rosenberg, Hans Schumann, Gregg Willcox, USA</p> <p>Interactive design of water purification products based on modern urban life Sijia Wang, China</p> <p>An analysis of the spatial distribution of the crime in urban villages--Taking Dianqian Village, Xiamen as an example Yiting Wu, China</p>	

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, SATURDAY, JULY 22, 2023

Time: 9:00-17:00

Room: Empire SoMa (2nd Level)

Virtual Room: AHFE Posters

- A1. A new method to evaluate the effect of self-contained breathing apparatus (SCBA) weight on firefighter musculoskeletal joint kinematics and kinetics
Susan Xu, Rachel F. Jones, Neethan Ratnakumar, Xianlian Zhou, Jeffrey Powell, Ziqing Zhuang, USA
- A2. MRI image segmentation using Fuzzy C-Means in MATLAB
Brisaac Johnson, Chris Crawford, USA
- A3. Motion strategies of getting on and off the bus while carrying a baby and a stroller alone
Jun-ming Lu, Shin-yen Chen, Taiwan
- A4. How negative emotions influence cognitive control in multitasking environments
Ludovic Fabre, Paola Melani, Matthieu Molina, France
- A5. Android-based Indoor physical activities detection and monitoring system using pose estimation
Imran Ullah Khan, Sana Tahir, Jong Weon Lee, South Korea
- A6. Application of narrative environments to hospitality design: A case study of Las Vegas themed hotel main lobbies
Madara Wickremasinghe, Yongyeon Cho, USA
- A7. A sustainable system of systems in space
Janne Heilala, Saeid Parchegani, Aezeden Mohamed, Adriano Gomes de Freitas, Finland/Papua New Guinea/Australia
- A8. Design model based on systems for children's healthcare in hospital
Cheng Peng, Siyun Teng, China
- A9. An emotional bio-wearable
Parisa Asayesh, USA
- A10. Attempt to develop analysis model of reader's pictogram understanding process
Tatsuya Sakabe, Hiroaki Kosaka, Japan
- A11. Stimulation and visibility of flashing lights with different illuminance
Shoichiro Fujisawa, Shoya Nishimori, Yoshifuru Atsuta, Kenji Sakami, Jiro Morimoto, Junji Kawata, Yoshio Kaji, Mineo Higuchi, Shin-ichi Ito, Tomoyuki Inagaki, Japan
- A12. Vibration measurement and verification of ride comfort when a manual attendant-controlled wheelchair is running
Shunsuke Jutori, Sekiya Tada, Soma Taniguchi, Ryoya Mihara, Junji Kawata, Jiro Morimoto, Yoshio Kaji, Mineo Higuchi, Masayuki Booka, Toru Yamamoto, Shoichiro Fujisawa, Japan
- A13. Bridging the generation gap: Improving empathic accuracy by personas
Chiu Kuan Ming, Dinghau Huang, Taiwan
- A14. Design of ergonomics-based bath chair for the elderly
Xin Chen, Hongling Ji, Le Xu, China
- A15. Application of innovative design of transformable baby stroller based on TRIZ
Lu Wei, Xiaotong Zhao, Xiaomo Ye, Xin Chen, China
- A16. Experience design in the social ecosystem
Scott Shim, USA
- A17. Model selection for predicting two-dimensional cursor movement behavior through cross-validation
Ting Chen Chou, Jun-ming Lu, Taiwan
- A18. Improvement of the accuracy of SSVEP-BCI with in-Ear EEG using multiple regression analysis
Sodai Kondo, Hisaya Tanaka, Japan
- A19. Scoping review to identify key concepts for building sports organizational integrity
Naoto Shoji, Yuito Matsuoka, Takanori Yoshida, Japan
- A20. Understanding students' diversity in inclusive design: A review of literature on students' empathy and prosocial motivation from cultural differences
Hye Jeong Park, Huiwon Lim, Yongyeon Cho, USA
- A21. Teaching AI – A concept for lifelong training in challenging hospital environments to cope with unpredictable situations
Christian Jestel, Jan Finke, Sebastian Hoose, Thomas Kirks, Germany
- A22. The effects of rudder pedal, and backrest angles on the maximum leg strength of young females
Ei-wen Lo, Yu-chen Chang, Taiwan
- A23. POT Design. Participatory design workshops for guidance on university choice in design
Giuseppe Di Bucchianico, Stefania Camplone, Raffaella Massacesi, Rossana Gaddi, Italy
- A24. Routing algorithm and diameter of hierarchical hyper-star network
Hyeongok Lee, Bo-ok Seong, South Korea
- A25. The contribution of the physical space in medical space
Geraldo Gomes Zumba, Janice Gomes Zumba, Henrique Gomes Zumba, Brazil

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, SATURDAY, JULY 22, 2023

Time: 9:00-17:00

Room: Empire SoMa (2nd Level)

Virtual Room: AHFE Posters

- A26. Structural analysis of the signaling buoy used in relaying areas of live bivalve mollusks
Alexandra Gabriela Ene, Carmen Mihai, Mihaela Jomir, Constantin Jomir, Romania
- A27. Development of a smart force-sensing undergarment for the adolescent idiopathic scoliosis patients
Kapoo Lee, Joanne Yip, Kit Lun Yick, Chao Lu, Hong Kong SAR China
- A28. Exploring the impact of CMF design and online shopping on consumer emotional experience in product design
Poying Chu, Hsin-ju Chang, Taiwan
- A29. Borrowing from medical school: A proposed model using team-based learning to enhance crew resource management in aviation education
Matthew Boyne, USA
- A30. Using mobility data tools to make streets safer for micromobility: Use-cases and usability
Eli Alston-Stepnitz, Angela Sanguinetti, USA
- A31. Defining the size and shape of the ear for the design of head-borne equipment
Aaron Bonner, Ericka Rovira, Hyegjoo Choi-rokas, Todd Garlie, Peng Li, Blake Mitchell, USA
- A32. QHS Methodology to innovate the value chain in the supply chain
Rodolfo Martinez Gutierrez, Jorge Vicente Villa García, Artemio Lara Chavez, Ramon Galvan Sanchez, Mexico
- A33. Developing a neurocognitive and physiological monitoring test bed to assess human situation awareness and workload during unmanned systems operations
C. J. Hutto, Emily Maw, Maureen O'Connell, Stuart Michelson, USA
- A34. Smart classroom: Cost effective and portable interactive learning spaces
Gordon Carlson, Claire Nickerson, USA
- A35. Smart mobility challenge project for new mobility service in Japan-social and user acceptance
Naohisa Hashimoto, Toshihisa Sato, Toru Kumagai, Takafumi Ando, Takahiro Miura, Tran Viet, Japan
- A36. Design of an ergonomic intervention program for manual jobs: Prevention, treatment and return to work
Alywin Hacay Chang León, Mercedes Sanchís Almenara, Antonio Ramón Gómez García, Ecuador
- A37. Exploring driver behavior in turbo round-about design: Human factors study
Bernard Ndeogo Issifu, Bhaven Naik, Kakan Dey, USA
- A38. Impacts of subjective mental workload and playful feeling of certain characteristics of tasks: Gamification and multiplication of cognitive functions
Lina-Estelle Louis, Isabelle Milleville-Pennel, Saïd Moussaoui, France
- A39. The development of Chinoiserie in eighteenth to twentieth century North America
Ellen Zhu, Australia

POSTER/DEMONSTRATION SESSIONS, SUNDAY, JULY 23, 2023

Time: 9:00-17:00

Room: Empire SoMa (2nd Level)

Virtual Room: AHFE Posters

- B1. Goal-directed task analysis for aircraft pilot decision modelling
Jonay Ramon Alaman, Alexandre Marois, Daniel Lafond, Sébastien Tremblay, Canada
- B2. A survey on musculoskeletal disorders of workers in interior renovation work
Cheng-Lung Lee, Peng-Cheng Sung, Yung-Ping Liu, Taiwan
- B3. Crossover IP image design strategy for the great white rabbit brand based on AHP analysis
Zhong Wang, Wenya Zhang, China
- B4. Visioning design for making the law familiar - four utilization models of the law
Takashi Inaba, Kazuhiko Yamazaki, Shota Hiratsuka, Japan
- B5. Interaction preferences of human body's natural gestures and gestures in smart large displays scenarios
Yanhui Li, Ren-ke He, China
- B6. Research on body movement correction based on ergonomic
Xin Xu, Xiaomei Chen, China
- B7. Training and competency development on virtual safety training
Janne Heilala, Ebo Kwegyir-Afful, Jussi Kantola, Finland
- B8. Unlocking human potential: The power of neural-interface technology measuring cognitive ability and traits
Janne Heilala, Waldemar Karwowski, Finland/USA
- B9. Classification of walking speed transitions via inertial measurement unit on the head during gait
Yu-sen Wu, Yun-Ju Lee, Taiwan

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, SUNDAY, JULY 23, 2023

Time: 9:00-17:00

Room: Empire Ballroom (Level 2)

Virtual Room: AHFE Posters

- B10. Modeling the effects of different honeypot proportions in a deception-based security game
Harsh Katakwar, Palvi Aggarwal, Varun Dutt, India
- B11. AI-based sentiment analysis approaches for large-scale data domains of public and security interests
Janne Heilala, Paavo Nevalainen, Kristiina Toivonen, Finland
- B12. The influence of personality in the healthcare environment – can understanding the team help leaders to mitigate stress in times of challenge?
Kate Grailey, Adam Lound, Eleanor Murray, Stephen Brett, UK
- B13. Taking people as the ruler: A human factors study of WA traditional architecture on the southwest border of Yunnan Province, China
Xiaoning Yang, Weibing Li, China
- B14. Classification of lodging facilities using questionnaire data on revenue management
Emi Iwanade, Kohei Otake, Japan
- B15. The influence of purchase purpose and customer loyalty on purchase behavior in fashion stores
Jin Nakashima, Kohei Otake, Japan
- B16. Autonomous system platform: Brain evidence autonomy management (BEAM) interface design and evaluation approach
Mei Lau, Heather James, USA
- B17. A concept for a modular mobile robot vendor independent perception and control unit designed for human robot collaboration
Jan Finke, Sebastian Hoose, Christian Jestel, Thomas Kirks, Germany
- B18. Impact of human-factors in programming from demonstration – a user study
Shakra Mehak, Aayush Jain, John D. Kelleher, Philip Long, Michael Guilfoyle, Maria Chiara Leva, Ireland
- B19. Multi-modal experimental design for human performance assessment in human-in-the-loop telerobotics
Inês Filipa Fernandes Ramos, Keerthi Sagar, Gabriele Gianini, Ernesto Damiani, Philip Long, Italy
- B20. The analysis of effect of visual cues in a binary decision-making environment
Amirreza Bagherzadeh, Farnaz Tehranchi, USA
- B21. Providing joint all-domain command and control (JADC2) intelligence enhances intel analysts' situational awareness leading to prediction convergence
Justin Nelson, USA
- B22. An experiment on the effects of an Influencer in tourism promotion videos on the followers' tourism attitudes
Hisashi Masuda, Ichii Kenta, Japan
- B23. Leveraging existing content to assess and train cybersecurity cognition
Crystal Fausett, Jenna Korentsides, Sabina Patel, Joseph Keebler, Elizabeth Lazzara, David Schuster, USA
- B24. Pleasant anti-nausea fragrances to delay car sickness symptoms
Clément Bougard, Éléonore Henry, Christophe Bourdin, Lionel Bringoux, France
- B25. Use and usability of shared micromobility among underserved youth in California
Eli Alston-Stepnitz, Angela Sanguinetti, Emily Searl, USA
- B26. Postural indicators as a new insight for multi-target classification of drowsiness at the wheels in partial automated driving: A simulator study
Gaëtan Perrotte, Nadjet Hosni, Clément Bougard, Jean-Louis Vercher, France
- B27. Converting driving time to leisure: Subjective evaluation of innovative seating positions
Julia Pelzer, Matthias Hötter, Claus Bertram Bonerz, Torben Böddeker, Lutz Eckstein, Stefan Ladwig, Germany
- B28. Using deliberate practice and the Toyota Kata to improve crew resource management: an action research project
Matthew Boyne, USA
- B29. Factors influencing students' AI learning behavior: A perspective of the theory of planned behavior
Hsin-hui Lin, Yi-shun Wang, Yu-min Wang, Taiwan
- B30. The relationship between acceptance-resistance strategies and self-control scales in projects
Kanta Hirano, Seiya Yamato, Tenzin Tsundue, Tsutomu Konosu, Japan
- B31. Spinning your wheels by dividing your efforts? Cognitive and physical performance interference with upper and lower body ergometer tasks
Samantha Smith, USA
- B32. A comprehensive evaluation of gift packaging
Shuo-fang Liu, Mingkai Hong, Taiwan
- B33. The feasibility of Salutogenic Theory in product design
Shuo-fang Liu, Jiahao Cai, Taiwan

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, SUNDAY, JULY 23, 2023

Time: 9:00-17:00

Room: Empire SoMa (2nd Level)

Virtual Room: AHFE Posters

- B34. Pilot study on the filtration efficiency of non-medical facemasks according to fit
Mika Morishima, Momoka Fujii, Japan
- B35. The design thinking practice of future urban public transport service under the thinking of Double Diamond Model
Yifei Wang, China
- B36. Updating aviation training for the next generation of pilots and technicians
Robert Thomas, Tracy Lamb, Scott Winter, Mitch Geraci, Kris Hammer, Nicola O'Toole, USA
- B37. The effect of angle of a display on map reading
Jeremy Flynn, USA
- B38. School bus transport companies enhancing community engagement for a safe and inclusive educational journey
Jennifer K. Morgan, Patrick W. Sanders, Sr., Ramon L. Davis, Martina A. Clarke, USA
- B39. Updating aviation The relationship between psychological safety, authentic leadership, and work engagement among Japanese nurses
Kentaro Inaba, Yumi Arai, Yasuyuki Hochi, Takumi Iwaasa, Yasuyuki Yamada, Emiko Togashi, Yuki Mizuno, Motoki Mizuno, Japan

POSTER/DEMONSTRATION SESSIONS, MONDAY, JULY 24, 2023

Time: 9:00-17:00

Room: Empire SoMa (2nd Level)

Virtual Room: AHFE Posters

- C1. Effects of intelligent warning systems on drivers' steering wheel angle in fog situations
Ana Paula Larocca, Felipe Calsavara, Brazil
- C2. Service quality of inclusive, sustainable and resilient community transport systems
Anabela Simoes, Ling Suen, Portugal
- C3. Development of a quick risk assessment method for safety of machinery applications
Francois Gauthier, Mame Oumy Gueye, Canada
- C4. Analysis of the influence of military radio stations electromagnetic field on operator's health
Marian Wnuk, Poland
- C5. Digital health surveillance: Usability requirements applied to rumor alerting and monitoring tools
Paulo Carvalho, Daniel Mendes, Elaine Alves De Carvalho, Alessandro Jatobá, Brazil
- C6. An analysis of research trends related to safety evaluation of equipment for agriculture fields
Seung-Min Mo, South Korea
- C7. The importance of well-being for organisational culture
Yusuf Arslanparcasi, Germany
- C8. The effect of real-time biofeedback on VDT operators' neck-shoulder workload
Hsieh-Ching Chen, Yung-Ping Liu, Yi-ling Liu, Taiwan
- C9. An occupational safety and health ecosystem for near-miss management: The CONDIVIDO project
Gaia Vitrano, Guido J. L. Micheli, Armando Guglielmi, Diego De Merich, Mauro Pellicci, Italy
- C10. Development of customized 3D printing wrist guard
Yu-chi Chen, Shu-Zon Lou, Jie-yie Chen, Wenren Hong, Chiachan Chen, Taiwan
- C11. Multi-source information fusion network for building occupancy estimation
Kailai Sun, Tian Xing, Xinwei Wang, Zhou Yang, Qianchuan Zhao, China
- C12. Survey of musculoskeletal discomforts, physiological loading and quality of life on prolonged sitting occupational drivers
Yen-Hui Lin, Shih-Yi Lu, Taiwan
- C13. Influence of green plants in visual perception on noise disturbance
Shih-Yi Lu, Yen-Hui Lin, Taiwan
- C14. The differences of eye movement data between beginners and instructors operating flight simulator
Hsin-Chieh Wu, Yin-chian Chen, Taiwan
- C15. Musculoskeletal disorders and discomfort for female surgeons or surgeons with small hand size when using medical equipment: A systematic review
Ahmed Basager, Quintin Williams, Rosie Hanneke, Aishwarya Sanaka, Heather Weinreich, USA
- C16. Ergonomic problems in surgical smoke control during surgery
Kazuhiko Shinohara, Japan
- C17. Investigations on user acceptance of fast charging stations in drive-through layouts for electric vehicles
Alexander Mueller, Benjamin Elster, Lampros Tsolakidis, Moritz Deininger, Germany
- C18. Usability evaluation of intravascular administration set with safety lock regulator to prevent medication error
Yourim Kim, Wonseuk Jang, South Korea

Interactive Poster Demonstrations

POSTER/DEMONSTRATION SESSIONS, MONDAY, JULY 24, 2023

Time: 9:00-17:00

Room: Empire SoMa (2nd Level)

Virtual Room: AHFE Posters

- C19. Gaze-based augmented reality interfaces to support human-robot teams
Christina Petlowany, Nathan Hahn, USA
- C20. Applying parametric model-based 3D anthropometric facial data for customized design and verification of medical masks using machine learning.
Yihsiang Lin, I-Jan Wang, Taiwan
- C21. Mathematical models for the assessment of the composite structures of cylindrical floating elements level of performances, used in brackish seas
Alexandra Gabriela Ene, Carmen Mihai, Constantin Jomir, Mihaela Jomir, Romania
- C22. Differences in circulating cortisol levels after completing hand ergometer exercise with and without graded compression arm sleeves
Manuel Gomez, Daniel Conde, Samuel Montalvo, Gabriel Ibarra-Mejia, USA
- C23. A comparative study of the impact of fatigue on professional and non-professional drivers' driving behaviors and risk performance
Yu-ju Chiu, Yung-ching Liu, Taiwan
- C24. Examining local food deserts using visual analytics
Henry Washington, Steven Jiang, Lauren Davis, Hyung Nam Kim, USA
- C25. Chinese drivers' attitudes toward I2+ level of driving automation
Liping Li, Xiaojun Luo, Jifang Wang, China
- C26. Speech-enhanced and context dependent alerts: Future implications for spacecraft design
Ian Robertson, Kritina Holden, Ryan Lange, Durand Begault, Tyler Duke, Ryan Amick, USA
- C27. Factors affecting the adoption intention of business simulation systems among business and management students in higher education
Yu-min Wang, Taiwan
- C28. Comparison of thermoregulatory behavior and thermal perceptions of workers during summer and winter
Su-Young Son, South Korea
- C29. A novel approach to assess usability of implant tools for insertable cardiac monitors
Amanda Sargent, Kunal Chaniary, USA
- C30. Using Nonaka and Takeuchi's Socialization of Knowledge in the classroom: Enhancing adult learning with EduScrum and human factors
Matthew Boyne, USA
- C31. Analysis of the relationship between shared leadership and perceived organizational support assessment
Tomohiro Nukita, Shouta Suzuki, Pema Gyaltzen, Tsutomu Konosu, Japan
- C32. Children's experiential product design from the perspective of aesthetic education
Ziqin Luo, Huixiang Zhang, China
- C33. Using fuzzy theory to analyze delivery platforms using Foodpanda as an example
Shuo-fang Liu, Chien-ting Wu, Taiwan
- C34. The impact of interactive AR technology on the communication of intangible cultural heritage - Case study of Chaozhou Opera in China
Mingyan Xiao, Chen Yue, China
- C35. Verbal communication based on authentic leadership in nursing situation
Yasuyuki Yamada, Kentaro Inaba, Yasuyuki Hoshi, Takumi Iwaasa, Emiko Togashi, Yumi Arai, Yuki Mizuno, Motoki Mizuno, Japan
- C36. Examination of common elements of attractive infographics
Yasuyuki Yamada, Takeshi Ebara, Mika Morishima, Motoko Kai, Takuya Tanaka, Sora Watabe, Motoki Mizuno, Japan
- C37. Exploring explainable artificial intelligence (XAI) visualizations for AI generated plans
Bryan Croft, Mike Nithaworn, David Crow, USA
- C38. Next Emojis kick off visual writing – Visualising abstract words such as I and You
Jochen Gros, Germany
- C39. Assessing ergonomics and user interaction of chemical protective suits in emergency response scenarios: A comprehensive test course approach
Christian Böhmer, Sina Hajiaghapour, Nadine Schlueter, Germany

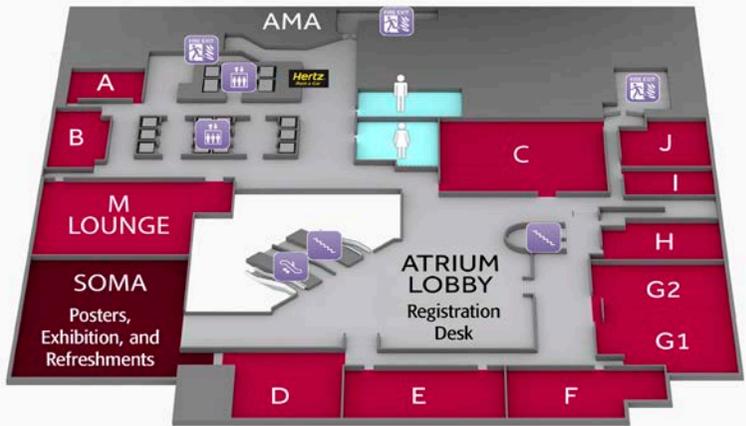
Conference Layout

2ND FLOOR FOOTHILL ROOMS

- AHFE 1: Foothill A
- AHFE 2: Foothill B
- AHFE 3: Foothill C
- AHFE 4: Foothill D
- AHFE 5: Foothill E
- AHFE 6: Foothill F
- AHFE 7: Foothill G1
- AHFE 8: Foothill G2

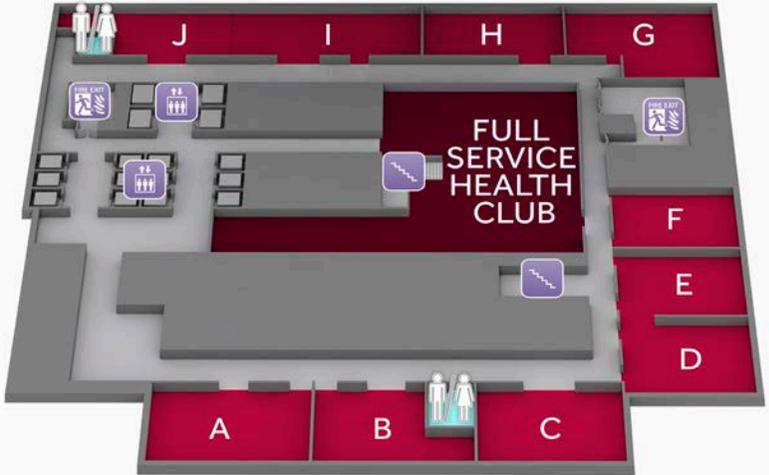
Posters and Exhibition: SoMa

Registration Desk: Atrium



4TH FLOOR PACIFIC ROOMS

- AHFE 9: Pacific A
- AHFE 10: Pacific B
- AHFE 11: Pacific C
- AHFE 12: Pacific D
- AHFE 13: Pacific E
- AHFE 14: Pacific F
- AHFE 15: Pacific G



GOLDEN GATE BALLROOM

AHFE 2023 Opening Session and Keynote Address: 17:00-18:30 (PDT), Friday July 21, 2023.
 Conference Reception: 19:00-22:00 (PDT), Friday July 21, 2023.



14th International Conference on Applied Human Factors and Ergonomics (AHFE 2023) and the Affiliated Conferences

San Francisco Marriott Marquis, San Francisco, California, USA
July 20-24, 2023

AFFILIATED CONFERENCES AND TRACKS:

Global Issues Challenge: Human Factors in Disease Control and Pandemic Prevention
1st International Conference on Human-Centered Metaverse and Digital Environments
1st International Conference on Health Informatics and Biomedical Engineering Applications
1st International Conference on Sustainable Construction in the Era of the Fourth Industrial Revolution
2nd International Symposium on Creative Technology and Digital Media
2nd International Conference on Human-Centered Aerospace Systems and Sustainability Applications
3rd International Conference on Human Dynamics and Design for the Development of Contemporary Societies
4rd International Conference on Creativity, Innovation and Entrepreneurship
5th International Conference on Industrial Cognitive Ergonomics and Engineering Psychology
5th International Conference on Human Factors for Apparel and Textile Engineering
6th International Conference on Human Factors in Artificial Intelligence and Social Computing
6th International Conference on Kansei Engineering
6th International Conference on Additive Manufacturing, Modeling Systems and 3D Prototyping
6th International Conference on Advanced Production Management and Process Control
6th International Conference on Interdisciplinary Practice in Industrial Design
6th International Conference on Human Factors in Aging and Special Needs
6th International Conference on Human Factors in Accessibility and Assistive Technology
7th International Conference on Human Factors and Wearable Technologies
7th International Conference on Human Error, Reliability, Resilience, and Performance
7th International Conference on Human Factors in Communication of Design
7th International Conference on Human Factors in Virtual Environments and Game Design
8th International Conference on Design for Inclusion
8th International Conference on Cognitive Computing and Internet of Things
8th International Conference on Human Factors and Simulation
8th International Conference on Human Factors in Management and Leadership
9th International Conference on Human Factors in Cybersecurity
9th International Conference on Human Factors and Systems Interaction
9th International Conference on Human Factors in Robots, Drones and Unmanned Systems
9th International Conference on Human Factors in Sports, Injury Prevention and Outdoor Recreation
9th International Conference on Human Factors, Business Management and Society
9th International Conference on Human Factors in Energy
9th International Conference on Human Factors in Training, Education, and Learning Sciences
10th International Conference on The Human Side of Service Engineering
10th International Conference on Human Factors, Software and Systems Engineering
10th International Conference on Architecture, Sustainable Urban Planning and Infrastructure
10th International Conference on Safety Management and Human Factors
11th International Conference on Affective and Pleasurable Design
11th International Conference on Human Factors in Transportation
11th International Conference on Ergonomics in Design
12th International Conference on Cross-Cultural Decision Making
12th International Conference on Human Factors and Ergonomics in Healthcare and Medical Devices
12th International Conference on Digital Human Modeling and Applied Optimization
14th International Conference on Physical Ergonomics and Human Factors
14th International Conference on Usability & User Experience
14th International Conference on Neuroergonomics and Cognitive Engineering
14th International Conference on Social & Occupational Ergonomics
24th International Conference on The Human Aspects of Advanced Manufacturing: Managing Enterprise of the Future

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