



**2024**  
**AHFE**  
**International**

# BEST PAPERS AWARDS

**45 Best Paper Awards**  
**18 Student Paper Awards**

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**45 CONFERENCE TRACKS**





# AHFE 2024 BEST PAPER AWARDS



Use of virtual reality for crime scene investigation training by security forces

**Marek Bures, Alena Lochmannová, Czech Republic**

Environmental Impact of Video Streaming from Users' Perspectives

**Dam Thi Thien Nhi, Margarita Chuloy, Leonhard Glomann, Germany**

Words about work performance and the company they keep

**Tim Arnold, Helen Fuller, Ruth Reeves, United States**

Development of Neural Networks for Deepfake Recognition

**Alina Latipova, Maria Yadrishnikova, United Kingdom**

Developing college students' creative problem-solving ability: The roles of empathy, prosocial motivation, and cultural differences

**Hye Jeong Park, Yongyeon Cho, Huiwon Lim, United States**

AI-Powered Emotion Recognition for Maritime Safety Enhancement

**Laura Paganì, Paolo Gemelli, Mario Ivan Zignego, Alessandro Bertirotti, Italy**

Colors in Mind: A Comprehensive Study on the Neurological Impact of Saturation

**Ana Teixeira, Sonia Brito-costa, Anabela Gomes, Portugal**

On the manufacturing of potted electrical connectors with 3D printing resin: an unobtrusive workflow

**Andrei Alexandru Popa, Olgierd Nowakowski, Lars Duggen, Denmark**

An Experimental Approach to Measuring Resilience Potential: Interactions in a Breakfast Cooking Task

**Haruka Yoshida, Taiki Ikeda, Taro Kanno, Daisuke Karikawa, Kohei Nonose, Satoru Inoue, Takashi Toriizuka, Japan**

Elderly and digital health technologies: the relationship between Gerontechnology and Design for active and healthy ageing.

**Francesca Tosi, Mattia Pistoletti, Claudia Becchimanzi, Italy**

Advancing the Development of Intelligent Wearable Robots for Elderly Assistance: An Innovative User-Centric Co-Creation (UC3) Framework

**Vivian Lou, Yuen Man Cheng, Ning Xi, Hong Kong SAR China**

Retired independent women adjusting to co-living

**Marie J Myers, Canada**

Bidirectional Human-AI/Machine Collaborative and Autonomous Teams: Risk, Trust and Safety

**William Lawless, United States**

Green Software Engineering Practices: Familiarity, Skills and Understandability among Mid-Bachelor ICT students

**Kimmo Tarkkanen, Finland**

Approach to Member Checking Support for Characterizing Team Processes with Discrepant Information about Team Roles

**Ellen Bass, Ya Xuan Wu, Nathaniel Barnett, United States**

Semantic Decision Support for Action Forces with Risk Stratification from Estimated Physiological Strain, Cognitive-Emotional Stress and Situation Awareness

**Florian Haid, Michael Schneeberger, Belén Carballo-Leyenda, Jose A. Rodríguez-Marroyo, Stefan Ladstätter, Anna Weber, Alexander Almer, Jochen Mosbacher, Lucas Paletta, Austria**

Using Cardiac and Electrodermal Activity as Cognitive Markers for Interruptions and Distraction in a Surveillance Simulation

**Alexandre Marois, Damien Mouratille, Yvan Pratiel, Cindy Chamberland, Sébastien Tremblay, Canada**

Comparing different ergonomic interventions to influence shelving practices in libraries

**Nerilee Watts, Nektarios Karanikas, Australia**

Feasibility of Integrating Electromyography and Computer Vision for Occupational Safety during Tractor Ingress and Egress

**Bethany Lowndes, Ana Laura Pineda Gutierrez, Santosh Pitla, Salem Rumuri, Joseph Siu, Aaron Yoder, United States**

Information ergonomics and factors related to sociotechnical environments of work among Ghanaian HE faculty members

**Jussi Okkonen, Reetta Oksa, Edward White, Mia Laine, Finland**

The use of protective hearing devices and perceived noise disturbance and social climate in open office environments

**Emilie Stroh, Roger Persson, Jonas Borell, Sweden**

Matter by Design. How can circular economy play a role in building green efficient and sustainable through innovative use of Mediterranean materials.

**Ana Cardoso, Raquel Salomé, Portugal**

Co-Creation of "Value-in-Context" in High-Quality Service: A Case Study

**Miwa Nishinaka, Hisashi Masuda, Japan**

Assessing Creativity in Higher Education: An Action Research Approach to Developing Effective Assessment Methods in Creative Education

**Amic Ho, Hong Kong SAR China**





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Why Do or Don't You Provide Your Knowledge to an AI?

Philipp Renggli, Toni Waefler, Switzerland

Towards a framework for digital work engagement of enabling technologies

Andreas Bergqvist, Jonathan Källbäck, Rebecca Cort, Åsa Cajander, Jessica Lindblom, Sweden

Enhancing Canine Musculoskeletal Diagnoses: Leveraging Synthetic Image Data for Pre-Training AI-Models on Visual Documentations

Martin Thissen, Thi Ngoc Diep Tran, Ben Joel Schönbein, Ute Trapp, Barbara Esteve Ratsch, Beate Egner, Romana Piat, Elke Hergenröther, Germany

Technical and Socio-Technical Success Factors of AI-Based Knowledge Management Projects

Christian Cost Reyes, Nicole Ottersböck, Christian Prange, Adrian Discher, Sven Peters, Holger Dander, Germany

WeMoveVirtual: Results from a Brief Virtual Movement Intervention for Musculoskeletal Pain and Well-being in Knowledge Workers

Andrea Martina Aegerter, Corina Schneider, Markus Melloh, Achim Elfering, Switzerland

An Update on International Robotic Wheelchair Development

Jesse Leaman, Hung La, Bing Li, United States

3D Numerical Simulation for Thermal Protection of Phase Change Material-Integrated Firefighters' Turnout Gear

Susan Xu, Jonisha Pollard, Weihuan Zhao, United States

Human factors and pedagogic principles to design a fire-safety pedagogic game

David Oliva, Kimmo Tarkkanen, Timo Haavisto, Brita Somerkoski, Axel Lindberg, Mika Luimula, Finland

Random Gazes, Telling Eyes: Exploring Gaze Transition Entropy as a Performance Indicator in Evaluating Instructional Designs

Jonas De Bruyne, Laetitia De Leersnijder, Durk Talsma, Jelle Demanet, Jelle Saldien, Klaas Bombeke, Belgium

Designing hybrid intelligence: understanding the impact of human decision-making on AI

Melanie Kessler, Oliver Antons, Julia Arlinghaus, Germany

Interdependency Matrix to Evaluate Influence Factors in Circular Value Creation Systems

Nada Ruzicic, Anja Braun, Peter Ohlhausen, Germany

Human Factors implication in innovative strategies for containership fires prevention and management

Vittorio Sangermano, Mario Ciaburri, Raffaella Russo, Daniele Palma Esposito, Italy

Evaluation of the Usability and Intuitiveness of a Teleoperated Forklift

Leonhard Feiner, Florian Canzek, Johannes Fottner, Germany

Early-stage user experience design of the remote operation concept of the harbour's reachstacker by exploiting eXtended Reality

Kaj Helin, Andrea Alesani, Timo Kuula, Vladimir Goriachev, Finland

Dyadic Interactions and Interpersonal Perception: An Exploration of Behavioral Cues for Technology-Assisted Mediation

Hifza Javed, Nina Moorman, Thomas Weisswange, Nawid Jamali, United States

Who is Responsible for What? Combining HTA and RACI for Modelling Cooperation in Remote Operation Center of Trains in Future Railway Sector

Marcel Saager, Jörn Kruse, Anja Naumann, Germany

Human Factors Design for Particle Accelerator Control Room Interfaces

Rachael Hill, Zachary Spielman, Casey Kovesdi, Katya Le blanc, Madelyn Polzin, United States

Using Multi-Modal Physiological Markers and Latent States to Understand Team Performance and Collaboration

Ashley Rabin, Catherine Neubauer, Stephen Gordon, Kevin King, United States

Symbolism in Extended Reality

Yang Cai, United States

Validation of Vigilance Decline Capability in A Simulated Test Environment: A Preliminary Step Towards Neuroadaptive Control

Andra Mahu, Amandeep Singh, Florian Tambon, Benoit Ouellette, Jean-françois Delisle, Tanya Paul, Foutse Khomh, Alexandre Marois, Philippe Doyon-poulin, Canada

Technology Affinity in the Nuclear Domain: An Initial Assessment of Operator Attitudes Towards Technology

Kelly Dickerson, Michael Hildebrandt, Niav Hughes, Heather Watkins, John Grasso, Isaac Wang, Peter Gerhardstein, United States

Evaluation of different HMIs to improve operator hazard perception and user experience in teleoperation of automated shuttles

Shanmuga Priya Srinivasan, Paul Tribulowski, Alisa Lindner, Germany

# AHFE 2024 BEST STUDENT PAPER AWARDS



Deep learning based Human Activity Recognition in first responders wearing a sensorized garment  
**Edoardo Spairani, Rita Paradiso, Giovanni Magenes, Italy**

The Effects of Short-term Meditation on the Creativity of Novice Designers: A Pilot Design Task Study using TTCT-Figural Assessment

**Yaning Li, Yu Zhang, Yumeng Yang, Tang Zihan, Zhenxian Hu, Chengxi Xie, Ziao Pan, Chengye Chen, Tuoda Qi, Zhixian Zhu, Qian He, Shumin Li, Yuan Yin, Ji Han, Peter Childs, Gaetano Cascini, Meng Li, China**

Crossing the East Asian cultural bridge: Comparison between Chinese and Japanese aesthetic education

**Zhuyun Yuan, China**

High-Frequency Gripping Area for One-Handed Smartphone Rear Interactions

**Xinyue Zhang, Wei Wang, Xiaopeng Wang, Guanhua Sun, Yikai Zhong, China**

Using ChatGPT to Support Criminal Investigations: A Comparative Study of AI and Human Query

**Ahad Alotaibi, Chris Baber, United Kingdom**

Patient Centered Care: Medical Error Disclosure Guidelines Across Canada

**Jay Kalra, Zoher Rafid-Hamed, Bryan Johnston, Patrick Seitzinger, Canada**

An Interaction Engine and Question Refactor Method in Question Answering for Knowledge-Driven Process Planning

**Tianzong Yu, Yan Ma, Peihan Wen, China**

Mixed Reality Handheld Displays for Robot Control: A Comparative Study

**Vera Marie Memmesheimer, Ian Thomas Chuang, Bahram Ravani, Achim Ebert, Germany**

Investigation of Potential fNIRS-based Biomarkers in Multi-Domain Virtual Reality Tasks for MCI Assessment

**Yanjie Zhang, Fan Li, Su Han, Donglin Li, China**

Exploring AI Smart Home Aging-in-Place: Use Cases to Empower Individuals with MCI and Their Carepartners

**Adviti Atluri, Brenna Phelps, Yi Qin, Corinne Cutts, Brian Jones, United States**

Sociotechnical Aspects of Decentralized Wastewater Treatment Systems

**Rachel Chai, Bhushan Lohar, Kaushik Venkiteshwaran, Sean Walker, Kevin White, United States**

Combining AR and ball-shape input interface to control remotely a robot-arm

**Harutaka Abe, Víctor Blanco Bataller, Henrik Terävä, Mika Luimula, Guillaume Lopez, Japan**

Assessing Self-disclosure Willingness in Metaverse-Based Structured Group Encounter

**Teru Kawakita, Hideaki Kanai, Japan**

Evaluating the Accuracy of the MOST Predetermined Motion Time System through Lab Experiments.

**Farhad Mazareinezhad, Firdaous Sekkay, Daniel Imbeau, Canada**

Gender Disparities in Wrist Movement Patterns Among Collegiate Amateur Golfers: A Biomechanical Case Study

**Ka Hin Kevin Lee, Yueqing Li, United Kingdom**

VibroTactile Feedback application for correcting and guiding posterior knee flexion during the loading phase of a baseball swing.

**Harold Langezaal, Guido De Bruyne, Stijn Verwulgen, Belgium**

Optimal Calorie Intake for Undergraduate Students During University Hours

**Atef Ghaleb, Karim Qawasmi, Sultan Alowedi, Saudi Arabia**

Exploring the optimal proportion range of gesture input keyboard in virtual reality based on human factors engineering

**Furui Sun, Wanzheng Liu, Huiran Sun, Yun Chen, China**

