IHSED
International
Human Systems
Engineering and
Design Conference
2024
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2024
IHSED
International

6th International Conference on

Human Systems Engineering and Design: Future Trends and Applications (IHSED 2024)

September 24-26, 2024
University of Split
Split, Croatia

Final Program

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IHSED 2024
Conference Reception

Tuesday, Sep 24, 2024 - 18:30 - 22:00 (CEST)

Reception Location: Restaurant Zrno Soli
Uvala Baluni 8, 21000, Split, Croatia
(Dress is business casual, Registered participants, Photo ID required)

Conference Organization

Scientific and Technical Session: Wednesday - Thursday, Sep 25-26
Location: University of Split Faculty of Economics, Business and Tourism
Location: Cvite Fiskovića 5, 21000, Split, Croatia

Conference Administrator:
admin[at]ihsed.org

Scientific Tracks

Acronym	Track
IHSED 1	Human-Centered Design
IHSED 2	Innovative Materials for Product Development
IHSED 3	Engineering, Design and Human Diversity
IHSED 4	Safety Engineering and Systems Complexity
IHSED 5	Fashion & Textile Design for Sustainability and Better Life
IHSED 6	Biomechanics, Health Management & Medicine
IHSED 7	Human Computer and System Interactions
IHSED 8	Business Analytics and Technology
IHSED 9	HFE in Construction, Mining and Fabrication
IHSED 10	Education, Distance Learning and Training

Conference at a Glance

Wednesday - Thursday, September 25-26, 2024

#	SESSION TITLE	ROOM	TRACK
	Day 1: Wednesday, Sep 25 - Session Time: 9:00 - 10:00 CEST		
1	Human-centered Design: Healthcare Applications I	Dubrovnik	IHSED 1
2	Applications in Transportation: Autonomous and Automated Vehicles	Split	IHSED 2
3	Human-centered Design: Holographic, Virtual and Augmented Reality	Pula	IHSED 3
	10:00 - 10:30 • Sessions Break		
	Day 1: Wednesday, Sep 25 - Session Time: 10:30 - 11:30 (CEST)		
4	Applications in Intelligent Human Computer and System Interaction	Dubrovnik	IHSED 4
5	Design Applications for Sustainability, Fashion and Better Life I	Split	IHSED 5
6	Work Safety: Cognitive and Physical Ergonomics Applications	Pula	IHSED 6
	11:30 - 12:00 • Sessions Break		
	Day 1: Wednesday, Sep 25 - Session Time: 12:00 -13:00 (CEST)		
7	Applications for Education, Distance Learning and Training	Dubrovnik	IHSED 7
8	Business Applications and Emerging Technology I	Split	IHSED 8
9	Human-centered Design and User Experience	Pula	IHSED 1
	End of Day 1 Sessions		
	Wednesday, Sep 25 - 13:30 - 15:00 IHSED Group Lunch - Social Event Please arrive to the location by: 13:15 Location: Restoran Gusara Address: Spinutska ul. 69, 21000, Split, Croatia		
	Day 2: Thursday, Sep 26 - Session Time: 9:00 - 10:00 CEST		
11	Business Applications and Emerging Technology II	Dubrovnik	IHSED 8
	10:00 - 10:30 • Sessions Break		
	Day 2: Thursday, Sep 26 - Session Time: 10:30 - 12:00 (CEST)		
15	Human Computer Interaction: Artificial Intelligence and Automation	Dubrovnik	IHSED 1
	End of Day 2 Sessions		

Scientific Program

Conference Technical Sessions:
Wednesday - Thursday, Sep 25-26, 9:00 - 14:00 (CEST)
Location: University of Split Faculty of Economics, Business and Tourism
Address: Cvite Fiskovića 5, 21000, Split, Croatia

DAY 1		Track	Room
SESSION 1	**Human-centered Design: Healthcare Applications I**	IHSED 1	Dubrovnik
Wednesday, Sep 25	**Session Chair(s): Masayuki Ihara, Japan and André Cardoso, Portugal**		
9:00 - 10:00 (CEST)	Towards narrative-based technology to assist people with dementia when going out Masayuki Ihara, Hiroko Tokunaga, Tomomi Nakashima, Hiroki Goto, Yuuki Umezaki, Takashi Minato, Yutaka Nakamura, Shinpei Saruwatari, Japan		
	Enhancing Worker Well-Being: A Study on Assistive Assembly to Mitigate Work-Related Musculoskeletal Disorders and Modulate Cobot Assistive Behavior André Cardoso, Ana Colim, Estela Bicho, Ana Braga, D Pereira, Sergio Monteiro, Paula Carneiro, Nélson Costa, Pedro Arezes, Portugal		
	Ostrich Locomotion-Inspired Walking Cane for Senior Adventurers Amaraporn Boonpratatong, Supatcha Charoensiri, Saowalak Manakitpaiboon, Kornnapa Noiklay, Sineenart Rungarun, Suphakij Khaonetr, Thailand		

DAY 1		Track	Room
SESSION 2	**Applications in Transportation: Autonomous and Automated Vehicles**	IHSED 2	Split
Wednesday, Sep 25	**Session Chair(s): Hatice Kirkici Gonçalves, Portugal and Franziska Braun, Germany**		
9:00 - 10:00 (CEST)	User experience assessment with high level autonomous vehicle console – a pilot test Hatice Kirkici , Paulo Pedrosa, Paula Carneiro, Sandra Melo, Ana Colim, Portugal		

	Enhancing the user experience of children in family vehicles Franziska Braun, Sebastian Stegmüller, Antonino Ardilio, Germany		
	From Driving to Quality Time: Deriving User Requirements for Interiors of Highly Automated Vehicles Matthis Hoetter, Claus Bertram Bonerz, Marco Lohrey, Germany		
	Drowsiness Detection in Monotonous Driving: Insights from Cross-Cultural Studies in China and Spain Francesco Deiana, Elena Castro Gonzales, James Jackson, Cristina Periago, Spain		
DAY 1		**Track**	**Room**
SESSION 3	**Human-centered Design: Holographic, Virtual and Augmented Reality**	**IHSED 3**	**Pula**
Wednesday, Sep 25	**Session Chair(s): Long Cheng, Switzerland and Aaron Häusler, Switzerland**		
9:00 - 10:00 (CEST)	Evaluation of Human Adaptation in a Monoscopic Video See-Through Headset Long Cheng, Valentin Holzwarth, Andreas Kunz, Switzerland		
	Geospatial Positioning Using a Smartphone and the MS HoloLens Jonas Stehlin, Aaron Häusler, Kordian Caplazi, Andreas Kunz, Switzerland		
	10:00 - 10:30 • Sessions Break		
DAY 1		**Track**	**Room**
SESSION 4	**Applications in Intelligent Human Computer and System Interaction**	**IHSED 4**	**Dubrovnik**
Wednesday, Sep 25	**Session Chair(s): Chijing Wang, Japan and Ala Sarah Alaqra, Sweden**		
10:30 - 11:30 (CEST)	Constructing a Transformer-based Model to Infer Daytime Productivity from Biometric Information During Sleep Chijing Wang, Ryota Nitto, Takuo Kuroki, Yuki Ban, Miki Nakai, Jun'Ichi Shimizu, Tomoyoshi Ashikaga, Shin'Ichi Warisawa, Japan		

How to Facilitate Interaction in Remote Focus Groups: a Practical Guide
    Ala Sarah Alaqra, John Sören Pettersson, Sweden

6   Making Artificial Intelligence Intelligent - Solving the Control Problem for Artificial Neural Networks by Empirical Methods
    Thomas Fehlmann, Eberhard Kranich, Switzerland

Importance of Ontologies for Systems Engineering (SE) and Human Factors Engineering (HFE) Integration
    Sarah Rudder, Daniel Herber, United States

DAY 1		Track	Room
SESSION 5	**Design Applications for Sustainability, Fashion and Better Life I**	IHSED 5	Split
Wednesday, Sep 25	**Session Chair(s): Cristina Caramelo Gomes and Cristina Carvalho, Portugal**		
10:30 - 11:30 (CEST)	The Role of Colour in Urban Place-Making: A Study of Public Art in Lisbon Cristina Caramelo Gomes, Portugal		
	Bio dyes and Bio pigments: the sustainable approach in industrial textile dyeing and printing processes Cristina Carvalho, Marlene Couceiro, Gianni Montagna, Carla Costa Pereira, Figueiredo Carlos, Portugal		
	Textiles:Text and Tiles - Design of a set of letters for ceramic tiles. Marlene Couceiro, Cristina Carvalho, Portugal		
	Colouring Kombucha Biofilm Carla Costa Pereira, Isabella Carvalho, Cristina Carvalho, Portugal		

DAY 1		Track	Room
SESSION 6	**Work Safety: Cognitive and Physical Ergonomics Applications**	IHSED 6	Pula
Wednesday, Sep 25	Session Chair(s): Mari Myllylä, Finland and Vasja Plesec, Slovenia		
10:30 - 11:30 (CEST)	Problems of content-based cognitive ergonomics Pertti Saariluoma, José Juan Cañas Delgado, Mari Myllylä, Finland		
	Revolutionizing Workplace Safety: An Analysis of IR4.0 Technology Implementation in the Manufacturing Sector Mazlina Zaira Mohammad, Muhammad Iman Sufi Suliman, Nurul Ain Mohd Rizal, Alias Mohd Saman, Malaysia		
	Evaluating the influence of various forearm positions on the grip strength of young adults Abdulelah Ali, Saudi Arabia		
	Development of a Metamaterial Numerical Model for Improving 3D-Printed Lower-Limb Prosthetic Liners Vasja Plesec, Blaž Hanželič, Gregor Harih, Slovenia		

11:30 - 12:00 • Sessions Break

DAY 1		Track	Room
SESSION 7	**Applications for Education, Distance Learning and Training**	IHSED 7	Dubrovnik
Wednesday, Sep 25	Session Chair(s): Alena Tušek, Germany and Benedikt Grewe, Germany		
12:00 - 13:00 (CEST)	Case study on the software-supported development of competences in Scenario-Technique Iris Gräßler, Alena Tušek, Germany		
	Importance of cultural change in Systems Engineering Transformation: A model for cultural assessment Iris Graessler, Benedikt Grewe, Germany		

SkillDrill – A Modular Training System for Preparing Civilian Experts for Peace Missions
    Elisabeth Broneder, Daniela Weismeier-Sammer, Monika Psenner, Astrid Holzinger, Sebastian Egger-Lampl, Markus Karlseder, Jaison Puthenkalam, Youssef Ibrahim, Austria

Insights Gained from Integrating Self-Paced Learning into Digital Learning Environments
    Kurt Englmeier, Germany

DAY 1

SESSION 8	**Business Applications and Emerging Technology I**	**IHSED 8**	**Split**

Wednesday, Sep 25	**Session Chair(s): Philipp Klotz, Germany and Roland Rodenbeck, Germany**
12:00 - 13:00 (CEST)	From System High to Zero Trust: The Impact of Security Requirements on a Multinational Standard with Technical Specifications for Data Dissemination Lorraine Hagemann, Philipp Klotz, Germany
	Interoperable Data Distribution Through Coalition Shared Data by Means of Standardization Roland Rodenbeck, Daniel Haferkorn, Barbara Essendorfer, Germany
	Multilevel Information Delivery Strategy (MIDS): A strategic design based model and method for equitable access to environmental information. Katherine Mollenhauer, Cala Del Rio, Javiera Rodriguez, Kay Bergamini, Vanessa Rugiero, José Ignacio Medina, Chile
	Participatory approach for specifying user requirements for maritime border surveillance system Laura Salmela, Sirra Toivonen, Jari Laarni, Jaana Keränen, Antti Väätänen, Finland

	Human-centered Design and User Experience	Track	Room
SESSION 9			
Wednesday, Sep 25	**Session Chair(s): Juan Jimenez Garcia, Canada and Başak Süller Zor, Turkey**	IHSED 1	Pula

12:00 - 13:00 (CEST)	Culturally Sensitive Mobile App for Female Sanitation and Hygiene in Low-income Countries Juan Jimenez Garcia, Niyousha Saeidi, Onita Basu, Canada
	Use Of Assistive Technologies For People With Visual Impairment: Smart Glove Design For Clothing Field Başak Süller Zor, Arzu Vuruskan, Turkey
	Reflexivity for experiential learning and a tool to transform digital practices: Two examples of didactic devices Dubois Caroline, Foucault Béatrice, France
	Solid-enabled personal online data stores: uncovering UX implications for online data management Tim Theys, Tom Haegemans, Peter Mechant, August Bourgeus, Jelle Saldien, Belgium
	Embracing AI and User-Centered Design in Modern Technological Systems: The Case of Non-Destructive Testing Marija Bertovic, Iikka Virkkunen, Germany

End of Day 1 Technical Sessions

IHSED Group Lunch – Social Event

(Registered Participants only)

Wednesday, Sep 25, 13:30 - 15:00

Please arrive to the location by: 13:15
   Location: Restoran Gusar
   Address: Spinutska ul. 69, 21000, Split, Croatia

(Registered participants only, Dress is Business Casual)

DAY 2			
 SESSION 11	**Business Applications and Emerging Technology II**	**Track**	**Room**
Thursday, Sep 26	**Session Chair(s): Deniz Oezcan and Martin Jung, Germany**	**IHSED 8**	**Dubrovnik**
9:00 - 10:00 (CEST)	Quality Key Figures for Developing Future Scenarios Iris Graessler, Deniz Oezcan, Germany		
	Coupled passenger simulation to optimise the turnaround process and passenger flow. Martin Jung, Florian Rudolph, Axel Classen, Germany		
	Climate Threats and Resilience Assessment of Road and Railway Networks: Scenario Analysis for 2025, 2030, 2050 Ching Pong Poo, Leila Kamalian, Zaili Yang, Yui-yip Lau, United Kingdom		

10:00 - 10:30 • Sessions Break

DAY 2		**Track**	**Room**
 SESSION 15	**Human Computer Interaction: Artificial Intelligence and Automation**	**IHSED 1**	**Dubrovnik**
Thursday, Sep 26	**Session Chair(s): Susanna Aromaa, Finland and Sven Hinrichsen, Germany**		
10:30 - 12:00 (CEST)	Exploring the Potential of Generative Artificial Intelligence in Human-Centred Design Susanna Aromaa, Hanna Lammi, Finland		
	A Structured Method for the Selection of Business Processes Suitable for Robotic Process Automation Frederic Meyer, Sven Hinrichsen, Elio Padoano, Germany		
	Building a Multicamera and Multimodal 3D Skeleton-based Pose Estimation Dataset to Enhanced Human-Robot Collaboration Carla Sofia Alves, Luís Louro, Ana Colim, André Cardoso, Débora Pereira, Duarte Fernandes, Mohammadamin Salimi, João Oliveira, Estela Bicho, Portugal		
	Does it Feel Safer? A Pilot Study on the Stress Levels of Humans for Varied Robot Control Strategies and Collaboration Scenarios Heiko Renz, Khazar Dargahi Nobari, Mohammed Faizan, Torsten Bertram, Germany		

Poster Demonstrations

Poster Demonstration Sessions:

SESSION A	Poster Demonstration Session	Level 1
	Wednesday - Thursday, September 25-26 [10:00 - 12:00]	
A-1	Correlation of Grid-Based Cluster Analysis for HQ Placement between Military and Non-Military Participants when providing a Fictional Geographical Map Justin Nelson, Jenna Cotter, Samuel Johnston, Justin Morgan, Timothy Heggedahl, United States	
A-2	Securing Worker and Heavy Equipment Safety in Shipyards: A Study on Collision Prevention AI Systems Ji-yeon Kim, Ki-hwan Kim, Young Jin Kang, Seok Chan Jeong, South Korea	
A-3	SDG 9: Digital Innovation in Foreign Trade through Industry 5.0 Rodolfo Martinez Gutierrez, Jorge Vicente Villa Garcia, Carmen Carey-Raygoza, Artemio Lara Chavez, Mexico	
A-4	Elderly-oriented design of smart TV based on multi-modal information interaction Chang Yu, Kaiyi Ye , Lai Feiyun, China	
A-5	Conceptualization of Rule- and Machine Learning-based High Level Building Blocks for Design Task Complexity Assessment Kutay Can Yinanc, Kathrin Konkol, Germany	

Call for Papers

Please join us for the

7th International Conference on

Human Systems Engineering and Design: Future Trends and Applications

(IHSED 2025)

28 Sep – 3 Oct, 2025

Cruise Line
Mediterranean Sea, Italy

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