



Virtual

2021 IHSI International

4th International Conference on
Intelligent Human Systems Integration:
Integrating People and Intelligent Systems

A vibrant photograph of a coastal town built on a hillside overlooking a harbor. The buildings are multi-story, with warm-toned facades in shades of yellow, orange, and red. The harbor is filled with numerous boats, including large yachts and smaller motorboats, docked at piers. The water is a clear, bright blue. The sky is a clear, light blue with a few wispy clouds. The overall scene is bright and sunny, suggesting a pleasant day in a beautiful coastal location.

Final Program

February 22-24, 2021

Virtual Conference

WWW.IHSINT.ORG

Opening Plenary Session and Keynote Address

Date: February 22 • 13:30-15:00

Virtual Room: All

Speaker: Prof. Dr.-Ing. Frank Ole Flemisch, Germany

Keynote Title: "Human Systems Integration and Intelligence: Past, Present, Future"

On the first glance, Human Systems Integration, which we try to make more intelligent in our conference, is a relatively new discipline, at least compared to Medicine, Physics or Mathematics. At the second glance, the successful integration of humans, technology and organization into meaningful and powerful systems is almost as old as the species of homo sapiens exists. The first part of the keynote will give a couple of striking examples from the dawn of humankind in the savannas of Africa to the first landing of humans on the moon, which underline that HSI is a long standing art craft, and increasingly science. The second part will look at the presence of HSI: Where do we stand in comparison to "pure" engineering? What are the domains where we are already successful, where are we largely unknown or under-utilized? Where do our colleagues in HSI come from, what domains and systems do they address? The third, most important part will look into the future of HSI: What are the major trends which we have to find solutions for? What are the most important, maybe also most challenging tension fields which we have to address?



About the Speaker: Prof. Dr.-Ing. Frank Ole Flemisch started as an aerospace engineer with a specialization in systems engineering and system dynamics. He spent many years in research on assistant systems and automation of aircraft, cars, trucks, helicopters, industrial sites and weapons systems at University of Armed Forces Munich, NASA Langley and DLR, served as the lead of a national standardization group and a technical expert in ISO TC204. He and his team, together with partners from academia and industry, coined the terms highly automated driving, cooperative automation and cooperative control. Since 2011 he is leading a department of Human System Integration at the Fraunhofer FKIE institute in Wachtberg/Bonn, Germany, is Professor for Human Systems Integration at the RWTH Aachen University - one of two Germany's Engineering Universities of Excellence - and is member of the NATO-STO Human Factors and Medicine Panel. He serves an Associate Editor for journals IEEE Transactions on Human-Machine Systems and he guest edited a special issue on "Shared and cooperative control of safety critical systems" for Cognition, Technology & Work, published in 2019.

Access to the Virtual Conference Scientific and Technical Program will be Available through the IHSI Submission System

Detailed Access for all sessions will be sent to Registered Participants

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

Conference Organization

GENERAL CONFERENCE CHAIRS

Waldemar Karwowski and Tareq Ahram

ORGANIZING CONFERENCE CO-CHAIRS

Dario Russo, Italy, Pepetto Di Bucchianico, Italy and Redha Tair, France

TECHNICAL PROGRAM CHAIRS AND BOARDS

IHSI 1: Automotive Design and Transportation Engineering

Co-Chairs:

F. Leali, Italy

A. Vergnano, Italy

E. Macioszek, Poland

R. Philipsen, Germany

G. Sierpi ski, Poland

IHSI 2: Humans and Artificial Cognitive Systems

Chair: T. Ahram, USA

D. Băilă, Romania

Ephraim Suhir, USA

E. Macioszek, Poland

IHSI 3: Intelligence Technology and Analytics

Chair: A. Ebert, Germany

D. Băilă, Romania

G. Sierpiński, Poland

R. Philipsen, Germany

E. Macioszek, Poland

IHSI 4: Computational Modeling and Simulation

Chair: D. Andujar, USA

IHSI 5: Humans and Artificial Systems Complexity

Chair: A. Ebert, Germany

IHSI 6: Smart Materials and Inclusive Human Systems

Co-Chairs:

S. Camplone, Italy

M. Ferrara, Italy

E. Karana, The Netherlands

S. Lucibello, Italy

D. Popov, USA

A. Ratti, Italy

V. Rognoli, Italy

IHSI 7: Human-Autonomy Teaming

Chair: A. Schulte, Germany

H. Blaschke, Germany

J. Chen, USA

G. Coppin, France

M. Draper, USA

M. Hou, Canada

M. Jipp, Germany

A. Kluge, Germany

D. Lange, USA

S. Nazir, Norway

M. Neerincx, The Netherlands

J. Platts, UK

U. Schmid, Germany

N. Stanton, UK

IHSI 8: Applications and Future Trends

Co-Chairs:

D. Russo, Italy

E. Macioszek, Poland

Conference at a Glance

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

Tuesday, February 23

#	TITLE	ROOM	TRACK
Session Time: 8:30 - 10:30			
1	IHSI 1: Automotive Design and Transportation Engineering	Roma	IHSI 1
2	IHSI 2: Humans and Artificial Cognitive Systems I	Milan	IHSI 2
3	IHSI 3: Intelligence, Technology and Analytics I	Palermo	IHSI 3
4	IHSI 4: Computational Modeling and Simulation I	Florence	IHSI 4
5	IHSI 5: Humans and Artificial Systems Complexity I	Verona	IHSI 5
10:30-11:00 • Sessions Break			
Session Time: 11:00 - 13:00			
6	IHSI 6: New Technologies and Inclusive Human Systems I	Roma	IHSI 6
7	IHSI 7: Human-Autonomy Teaming I	Milan	IHSI 7
8	IHSI 8: Applications and Future Trends I	Palermo	IHSI 8
9	IHSI 2: Humans and Artificial Cognitive Systems II	Florence	IHSI 2
10	IHSI 2: Artificial Intelligence and Computing II	Verona	IHSI 2
13:00 - 14:00 • Sessions Break			
Session Time: 14:00 -16:00			
12	IHSI 5: Humans and Artificial Systems Complexity II	Milan	IHSI 5
13	IHSI 6: New Technologies and Inclusive Human Systems II	Palermo	IHSI 6
14	IHSI 7: Human-Autonomy Teaming II	Florence	IHSI 7
15	IHSI 8: Applications and Future Trends II	Verona	IHSI 8
16:00 - 17:00 • Sessions Break			

Conference at a Glance

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

Wednesday, February 24

#	TITLE	ROOM	TRACK
Session Time: 8:30 - 10:30			
16	IHSI 2: Humans and Artificial Cognitive Systems III	Roma	IHSI 2
17	IHSI 3: Intelligence, Technology and Analytics III	Milan	IHSI 3
18	IHSI 5: Humans and Artificial Systems Complexity III	Palermo	IHSI 5
19	IHSI 6: New Technologies and Inclusive Human Systems III	Florence	IHSI 6
10:30-11:00 • Sessions Break			
Session Time: 11:00 - 13:00			
20	IHSI 8: Applications and Future Trends III	Roma	IHSI 8
21	IHSI 2: Humans and Artificial Cognitive Systems IV	Milan	IHSI 2
22	IHSI 8: Applications and Future Trends IV	Palermo	IHSI 8
13:00 - 14:00 • Sessions Break			
Session Time: 14:00 -16:00			
24	IHSI 8: Applications and Future Trends V	Roma	IHSI 8
25	IHSI 8: Applications and Future Trends VI	Milan	IHSI 8
26	IHSI 8: Applications and Future Trends VII	Palermo	IHSI 8

ACRONYM	TRACK
IHSI 1	Automotive Design and Transportation Engineering
IHSI 2	Humans and Artificial Cognitive Systems
IHSI 3	Intelligence Technology and Analytics
IHSI 4	Computational Modeling and Simulation
IHSI 5	Humans and Artificial Systems Complexity
IHSI 6	Smart Materials and Inclusive Human Systems
IHSI 7	Human-Autonomy Teaming
IHSI 8	Applications and Future Trends

1	<p>IHSI 1: Automotive Design and Transportation Engineering Session Chair(s): Marcel Usai and Lorenz Goerne, Germany</p>
8:30 - 10:30 - ROMA	<p>User-centered Design within the Context of Automated Driving in Trucks – GSystem Architecture for Gesture Control of Maneuvers in Automated Driving Marcel Usai, Ronald Meyer, Ralph Baier, Nicolas Daniel Herzberger, Kristian Lebold, Frank Flemisch, Germany</p> <p>Service Oriented Software Architecture for Vehicle Diagnostics Lorenz Görne, Hans-Christian Reuss, Germany</p> <p>Investigation of Personality Traits and Driving Styles for Individualization of Autonomous Vehicles Yvonne Brück, Dario Niermann, Alexander Trende, Andreas Lüdtkke, Germany</p> <p>Predicting Takeover Quality in Conditionally Automated Vehicles using Machine Learning and Genetic Algorithms Emmanuel de Salis, Quentin Meteier, Marine Capallera, Leonardo Angelini, Andreas Sonderegger, Omar Abou Khaled, Elena Mugellini, Marino Widmer, Stefano Carrino, Switzerland</p> <p>Increasing Agility: A Tangible XR for Rapid Prototype Development and Usability Assessment Ronald Meyer, Frank Flemisch, Germany</p> <p>Automated but Not Alone”: How the Possible Forms of Future Human Activity Are Analyzed in the Advent of Automated Vehicles? Daniel Silva, Liliana Cunha, Portugal</p>
2	<p>IHSI 2: Humans and Artificial Cognitive Systems I Session Chair(s): Xiaohan Wang, China and Chiara Lucifora, Italy</p>
8:30 - 10:30 - MILAN	<p>NeuroDesignScience: An fNIRS-based System Designed to Help Pilots Sustain Attention During Transmeridian Flights Amanda Liu, Binbin Li, Xiaohan Wang, Songyang Zhang, Yancong Zhu, Wei Liu, United States</p> <p>Cyber-Therapy: The use of Artificial Intelligence in Psychological Practice Chiara Lucifora, Leonardo Angelini, Quentin Meteier, Carmelo Mario Vicario, Omar Abou Khaled, Elena Mugellini, Giorgio Mario Grasso, Italy</p> <p>The fear of learning statistics in Latin America: computational solutions Carlos Ramos Galarza, Omar Córdor Herrera, Valentina Ramos, Mónica Bolaños, Pamela Acosta Rodas, Janio Jadan-Guerrero, Hugo Arias-Flores, Ecuador</p> <p>An Analytical Framework for Evaluating Complex Human-Machine Tactical Military Decision-making Bonnie Johnson, Julian Jones, Russell Kress, Adam Rahman, William Newmeyer, United States</p> <p>PEST Approach to Managing the Bulgarian Media Ecosystem Lilia Raycheva, Bulgaria</p> <p>Implementation of Augmented Reality into Student Practical Skills Training Dana Dobrovská, David Van ek, Czech Republic</p>
3	<p>IHSI 3: Intelligence, Technology and Analytics I Session Chair(s): Maryna Averkyna, Estonia and Florian Brillowski, Germany</p>
8:30 - 10:30 - PALERMO	<p>Method of Similarity Implementation for the Decision-Making Process in Small Towns Transportation Management Maryna Averkyna, Peeter Lorents, Estonia</p> <p>Know-How Transfer and Production Support Systems to Cultivate the Internet of Production within the Textile Industry Florian Brillowski, Hannah Dammers, Hannah Koch, Kai Müller, Leon Reinsch, Christoph Greb, Germany</p> <p>Health and Activity Monitoring Using Smart Devices to Support the Self-Management of Health Behavior Janet Wesson, George Mujuru, Lester Cowley, South Africa</p> <p>Data-Driven Fault Classification using Support Vector Machines Deepthi Jallepalli, Fatemeh Davoudi Kakhki, United States</p> <p>Cybersafety in the digital educational environment: external and internal risks Oleksandr Burov, Yuliya Krylova-Grek, Evgeniy Lavrov, Olena Orliyk, Svitlana Lytvynova, Olga Pinchuk, Olga Matvienko, Nataliia Koshechko, Ukraine</p> <p>Preliminary Analysis on the Recruitment Process for Domestic Violent Extremist Groups Brendan Reilly, April Edwards, United States</p>

4	<p>IHSI 4: Computational Modeling and Simulation I Session Chair(s): Anthony Palladino, USA and Manuel Sanchez Chero, Peru</p>
8:30 - 10:30 - FLORENCE	<p>AI-augmented Human Performance Evaluation for Automated Training Decision Support Anthony Palladino, Margaret Duff, Alexander Bock, Tracy Parsons, Rody Arantes, Bernard Chartier, Carl Weir, Kendra Moore, United States</p> <p>Program in Visual Basic Language: A Simplified Procedure for Thermal Treatment Evaluation of Packaged Foods William Rolando Miranda Zamora, Manuel Jesus Sanchez Chero, Marcos Timaná-Alvarez, Veronica Seminario-Morales, César Niño-Carmona, Nelly Leyva, Leandro Alonso Vallejos More, Lucio Ticona-Carrizales, Abraham Ygnacio, Peru</p> <p>Monitoring implementation for Spiking Neural Networks architecture on Zynq-7000 All Programmable SoCs Mireya Zapata, Bernardo Vallejo-Mancero, Byron Remache-Vinueza, Jordi Madrenas, Ecuador</p> <p>Increasing competitiveness of economic regions: prospects for innovative development Nazariy Popadynets, Ieh Yakymchuk, Alina Yakymchuk, Rostyslav Bilyk, Inna Irtysheva, Iryna Hryhoruk, Kateryna Blishchuk, Yevheniya Boiko, Nataliya Hryshyna, Yuriy Yakymchuk, Ihor Sirenko, Serhiy Serhiychuk, Ukraine</p> <p>Artificial Neural Networks in Art - Face Colorization and 3D Visualization Lai Man Tin, Hong Kong SAR China</p> <p>The Trojan Horse experiment: fourth phase in the research with City Information Modeling (CIM) and design ethics José Beirão, Gonçalo Falcão, Portugal</p> <p>Analysis and modeling of factor determinants of Ukraine's hotel and tourist sphere Nazariy Popadynets, Iryna Hryhoruk, Mariana Popyk, Olha Bilanyuk, Oleksandr Halachenko, Inna Irtysheva, Natalia Batkovets, Nataliia Lysiak, Yevheniya Boiko, Nataliya Hryshyna, Mariana Bil, Tetiana Nezveshchuk-Kohut, Ukraine</p>
5	<p>IHSI 5: Humans and Artificial Systems Complexity I Session Chair(s): S M Mizanoor Rahman, USA and Keiki Takadama, Japan</p>
8:30 - 10:30 - VERONA	<p>Multimodal Interactions between a Virtual Human and a Social Robot S M Mizanoor Rahman, United States</p> <p>Ambient Assisted Living: Benefits of the technology development Hugo Arias-Flores, Janio Jadan-Guerrero, Omar Córdor Herrera, Carlos Ramos-Galarza, Ecuador</p> <p>Towards Agent Design for Forming a Consensus Remotely Through an Analysis of Declaration of Intent in Barna Game Yoshimiki Maekawa, Tomohiro Yamaguchi, Keiki Takadama, Japan</p> <p>Aspect fusion as design paradigm for legal information retrieval Kurt Englmeier, Pedro Contreras, Germany</p> <p>Economic diagnostics and management of eco-innovations: conceptual model of taxonomic analysis Alina Yakymchuk, Andriy Valyukh, Inna Irtysheva, Valentyna Yakubiv, Nazariy Popadynets, Iryna Hryhoruk, Kostiantyn Pavlov, Olena Pavlova, Yuliia Maksymiv, Yevheniya Boiko, Nataliya Hryshyna, Olena Ishchenko, Ukraine</p>
<p>10:30 - 11:00 • Sessions Break</p>	

6	IHSI 6: New Technologies and Inclusive Human Systems I Session Chair(s): Ahmed Farooq, Finland and Mona Mohamed, USA
11:00 - 13:00 - ROMA	<p>Creating Embedded Haptic Waveguides in a 3D-Printed Surface to Improve Haptic Mediation for Surface-based Interaction Ahmed Farooq, Hong Tan, Roope Raisamo, Finland</p> <p>Preliminary Investigations on Subcutaneous Implantable Microchip Health and Security Risks Mona Mohamed, Beenish Chaudhry, United States</p> <p>An Interdisciplinary and Participatory Research for Co-creating a Relaxed Performance in one theater environment in Montreal Zakia Hammouni, Walter Wittich, Eva Kehayia, Ingrid Verduyck, Natalina Martiniello, Émilie Hervieux, Tiiu Poldma, Canada</p> <p>Development of a methodology for the learning-teaching process through virtual and augmented reality Stalyn Ávila-Herrera, Cesar Guevara, Ecuador</p> <p>Electric circuit simulator applying augmented reality and gamification Cesar Guevara, Vinicio Burgos, Lorena Espinosa, Ecuador</p>
7	IHSI 7: Human-Autonomy Teaming I Session Chair(s): Jurriaan van Diggelen, Netherlands and Paul Dommel, Germany
11:00 - 13:00 - MILAN	<p>Delegation in Human-agent Teaming: Progress, Challenges and Prospects Jurriaan van Diggelen, Jonathan Barnhoorn, Ruben Post, Joris Sijs, Nanda van der Stap, Jasper van der Waa, Netherlands</p> <p>Comparison of a Logistic and Support Vector Machine Model to Detect Discomfort in Automated Driving Paul Dommel, Alois Pichler, Matthias Beggiato, Germany</p> <p>Human-Centered Design in an Automated World Claire Blackett, Norway</p> <p>Evaluation of Swarm Supervision Complexity Sebastian Lindner, Axel Schulte, Germany</p> <p>Sensor Fusion-Based Supervised Learning Approach to Collaborative Manipulation with Variable Autonomy S M Mizanoor Rahman, United States</p>
8	IHSI 8: Applications and Future Trends I Session Chair(s): Afnan Zafar, Finland and Merylin Monaro, Italy
11:00 - 13:00 - PALERMO	<p>The openness of open innovation in the product development process Afnan Zafar, Sweden</p> <p>Mouse Tracking IAT in Customer Research: An Investigation of Users' Implicit Attitudes towards Social Networks Merylin Monaro, Paolo Negri, Francesca Zecchinato, Luciano Gamberini, Giuseppe Sartori, Italy</p> <p>Uncanny Valley in 3D Emoji: Investigating User Perceptions of Realistic Representations Juhee Chung, Soojin Jun, South Korea</p> <p>Blended Design strategies to plan again the new territorial networking and its interconnections Irene Fiesoli, Italy</p> <p>A Study on the Attitude and Practice of Chinese Teachers and Students towards VR Teaching for Foreign Language Learning Weihua Du, Zhongli Hu, China</p> <p>Lean Manufacturing for Production Management and Strategic Planning to Increase Productivity in SMEs Engaged in Manufacturing Chemicals Carlos Raymundo-Ibañez, Hernan Zegarra-Mendez, Víctor Nuñez, Peru</p>

<p>9</p>	<p>IHSI 2: Humans and Artificial Cognitive Systems II Session Chair(s): Patrick Rupprecht, Austria and Sonia Grigor, Romania</p>
<p>11:00 - 13:00 - FLORENCE</p>	<p>Taxonomy for Individualized and Adaptive Human-Centered Workplace Design in Industrial Site Assembly Patrick Rupprecht, Sebastian Schlund, Austria</p> <p>Integrating Voice based Interaction with Massive Data Process Description and Execution Constantin Nandra, Sonia Grigor, Dorian Gorgan, Romania</p> <p>Reading multiple EEG frequency-band networks in developmental dyslexia Tihomir Taskov, Juliana Dushanova, Bulgaria</p> <p>Social activity of student youth: experience of Pavlo Tychyna Uman State Pedagogical University Oksana Kravchenko, Natalia Koliada, Viktoria Isachenko, Inna Honchar, Ukraine</p> <p>Gamification teaching for an active learning Omar Córdor Herrera, Pamela Acosta Rodas, Carlos Ramos Galarza, Ecuador</p>
<p>10</p>	<p>IHSI 2: Artificial Intelligence and Computing II Session Chair(s): Anastasia Kalugina, Switzerland and Iryna Hryhoruk, Ukraine</p>
<p>11:00 - 13:00 - VERONA</p>	<p>Semi-quantitative model for risk assessment in University laboratories Anastasia Kalugina, Thierry Meyer, Switzerland</p> <p>Human centred Design in a new hospital in Canada: The lived experience of healthcare professionals Zakia Hammouni, Tiiu Poldma, Canada</p> <p>Evaluation of domestic market development in Ukraine Nazariy Popadynets, Inna Irtysheva, Lyudmila Shymanovska-Dianych, Olesia Diugowanets, Iryna Hryhoruk, Iryna Kramarenko, Tetiana Husakovska, Yevheniya Boiko, Nataliya Hryshyna, Olena Ishchenko, Nataliya Tubaltseva, Dariya Archybisova, Ukraine</p> <p>Challenges in Smart Healthcare for physical rehabilitation Jorge-Luis Pérez-Medina, Karina Jimenes-Vargas, Patricia Acosta-Vargas, Mario Gonzalez, Wilmer Esparza, Ecuador</p> <p>Using a video camera to obtain quantitative measurements for distance flexibility training Oksana Isaeva, Anna Konurina, Yura Boronenko, Vladimir Zelensky, Yelena Gudoshnik, Russia</p>
<p>13:00 - 14:00 • Sessions Break</p>	
<p>12</p>	<p>IHSI 5: Humans and Artificial Systems Complexity II Session Chair(s): Francesca de Rosa, Italy and Marja Ahola, Finland</p>
<p>14:00 - 16:00 - MILAN</p>	<p>The Knowledge Acquisition Analytical Game framework for cognitive systems design Francesca De Rosa, Anne-Laure Jusselme, Alessandro De Gloria, Italy</p> <p>Human-Artificial Systems Collaboration in Service Innovation and Social Inclusion Afnan Zafar, Marja Ahola, Sweden</p> <p>User Cognitive Abilities-Human Computer Interaction Tasks Model Jinshou Shi, Wenzhe Tang, Ning Li, Yingwei Zhou, Tuoyang Zhou, Ziang Chen, Kaili Yin, China</p> <p>Interactive Human-Computer Theoretical Model of Editorial Design with Augmented Reality Carlos Borja, Cesar Guevara, Ecuador</p>

13	<p>IHSI 6: New Technologies and Inclusive Human Systems II Session Chair(s): Stefania Camplone, Italy and Patricia Acosta-Vargas, Ecuador</p>
14:00 - 16:00 - PALERMO	<p>Health emergency and digital shopping experience: a new era of retail design Stefania Camplone, Emidio Antonio Villani, Italy</p> <p>Combined Method for Accessibility Evaluation in Tele-rehabilitation Platforms for Low Vision Users Patricia Acosta-Vargas, Jorge-Luis Pérez-Medina, Gloria Acosta-Vargas, Belén Salvador-Acosta, Wilmer Esparza, Karina Jimenes-Vargas, Mario Gonzalez, Ecuador</p> <p>Gamification for Teaching - Learning Mathematics in Students of Basic Education Cesar Guevara, Roilys Jorge Suarez Abrahante, Jean Paul Molina Villarroel, Ecuador</p> <p>Co-Design of Inclusive Assistive Technology for Movement Disorders Reem Almeahmadi, Alanoud Alsharidah, Leen Almutlaq, Bakur Madani, Ruba Alfadhel, Shiroq Almegren, Areej Al-Wabil, Saudi Arabia</p> <p>Co-Creation of Pediatric Physical Therapy Environments: The Humanistic Co-Design Process Hadeel Alomrani, Abdullah Alsinan, Rneem Almansoury, Rana Aljabr, Saudi Arabia</p>
14	<p>IHSI 7: Human-Autonomy Teaming II Session Chair(s): Frank Flemisch, Germany and Axel Schulte, Germany</p>
14:00 - 16:00 - FLORENCE	<p>Towards a Balanced Analysis for a more intelligent Human Systems Integration Frank Flemisch, Michael Preutenborbeck, Marcel Baltzer, Joscha Wasser, Ronald Meyer, Nicolas Daniel Herzberger, Marten Bloch, Marcel Usai, Daniel Lopez, Germany</p> <p>Anticipating Human Decision for an Optimal Teaming between Manned and Unmanned Systems Jane Jean Kiam, Marius Dudek, Axel Schulte, Germany</p> <p>Psychophysics-Based Cognitive Reinforcement Learning to Optimize Human-Robot Interaction in Power-Assisted Object Manipulation S M Mizanoor Rahman, United States</p> <p>Paper-based electronics for brain-machine interface home supercomputer Nicolas Lori, Miguel Pais-Vieira, Manuel Curado, José Machado, Portugal</p> <p>Multi-Agent Collaboration in an Adversarial Turret Reconnaissance Task Rolando Fernandez, Anjon Basak, Bryson Howell, Christopher Hsu, Erin Zaroukian Zaroukian, Jake Perret, James Humann, Michael Dorothy, Piyush Sharma, Scott Nivison, Zachary Bell, Derrik Asher, United States</p>
15	<p>IHSI 8: Applications and Future Trends II Session Chair(s): Cesar Guevara, Ecuador and Young Ae Kim, USA</p>
14:00 - 16:00 - VERONA	<p>Gestalt Prototyping Framework - Evaluation Tool Daniel Ripalda, Cesar Guevara, Alejandra Garrido, Ecuador</p> <p>Social Media Happiness expression through the Virtual Reality: Cultural Differences on Instagram Young Kim, Qiuwen Li, United States</p> <p>Flexible Manufacturing Systems: A Methods Engineering and Operations Management Approach Claudia Yohana Arias Portela, María-Cristina Herrera-García, Mexico</p> <p>Supporting Collective Intelligence of Human-Machine Teams in Decision-Making Scenarios Alexander Smirnov, Andrew Ponomarev, Russia</p> <p>Lean Manufacturing Production Management Model under a Change Management Approach to Enhance Production Efficiency of Textile and Clothing SMEs Carlos Raymundo-Ibañez, Reddy Heredia-Mercado, Shaly Flores-Piñas, Pedro Chavez, Peru</p> <p>Calculation of the level of service in the gondola in supermarkets Carlos Raymundo-Ibañez, Juan Ñaupari, Anghela Urbina, Grimaldo Quispe, Peru</p>
16:00 - 17:00 • Sessions Break	

<p>16</p>	<p>IHSI 2: Humans and Artificial Cognitive Systems III Session Chair(s): Oleksandr Burov, Ukraine and Carlos Ramos-Galarza, Ecuador</p>
<p>8:30 - 10:30 - ROMA</p>	<p>Mental Rotation Ability and Preferences in Vocational Education Oleksandr Burov, Evgeniy Lavrov, Olga Lavrova, Olena Hlazunova, Oleksii Tkachenko, Svitlana Shevchenko, Svitlana Ahadzhanova, Karen Ahadzhanov-Honsales, Oleksandr Viunenko, Ukraine</p> <p>Technological resources for neuropsychological rehabilitation Carlos Ramos Galarza, Paula Silva Barragán, Omar Córdor Herrera, Mónica Bolaños, Valentina Ramos, Jorge Cruz Cárdenas, Ecuador</p> <p>A Modeling Method to Evaluate the Finger-click Interactive Task in the Virtual Environment Jiarui Li, Xiaozhou Zhou, Lesong Jia, Weiye Xiao, Yu Jin, Chengqi Xue, China</p> <p>Technological Innovations for Executive Functions Stimulation María Judith López, Carlos Ramos Galarza, Ecuador</p> <p>Influence of Size and Depth Perception on Ray-casting Interaction in Virtual Reality Xiaolei Lv, Chengqi Xue, Weiye Xiao, China</p>
<p>17</p>	<p>IHSI 3: Intelligence, Technology and Analytics III Session Chair(s): Rui Magalhães Belfort, Brazil and Eija Kaasinen, Finland</p>
<p>8:30 - 10:30 - MILAN</p>	<p>Combining Objective Key Results, Net Promoter Score and Social Return of Investment to Measure Design Impact Rui Belfort, Farley Millano, Fabio Campos, Brazil</p> <p>User experience goals for cognitive systems in smart business buildings Eija Kaasinen, Susanna Aromaa, Maarit Halttunen, Susanne Jacobson, Inka Lappalainen, Marja Liinasuo, Maarja Nuutinen, Reetta Turtiainen, Finland</p> <p>Performance Evaluation of the Nvidia Jetson Nano Through a Real-time Machine Learning Application Sebastián Valladares, Mayerly Toscano, Rodrigo Tufiño, Paulina Morillo, Diego Vallejo-Huanga, Ecuador</p> <p>Public-Private Partnerships (PPPs) in Energy: Co-Citation Analysis using Network and Cluster Visualization Giovanna Andrea Pinilla De La Cruz, Rodrigo Rabetino Sabugo, Jussi Kantola, Finland</p> <p>The impact of connected and autonomous trucks on freeway traffic flow Yue Qiao, Hu Yongju, China</p> <p>Low-Cost Cyber-Physical Production Systems Based on IEC 61499 for Analog Process Marcelo Garcia, Spain</p>
<p>18</p>	<p>IHSI 5: Humans and Artificial Systems Complexity III Session Chair(s): Thierry Nsabimana, Italy and Fabio Campos, Brazil</p>
<p>8:30 - 10:30 - PALERMO</p>	<p>Learning Vector Quantization and Radial Basis Function Performance Comparison Based on Intrusion Detection System Joël T. Hounsou, Pamela Bélice Ciza Niyomukiza, Thierry Nsabimana, Ghislain Vlavonou, Fulvio Frati, Ernesto Damiani, Benin</p> <p>User Experience in Virtual Environments: Relationship Between Cybersickness Issues and the Optical Aspects of the Image by Contrast Levels Fabio Campos, Marcia Campos, Tulio Luiz Rodrigues Da Silva, Marnix Van Gisbergen, Brazil</p> <p>Human Error Related to the Design of Fire Protection Control System in Civil Aircraft Cockpit Kun Han, Hongyu Zhu, China</p> <p>Benefit of developing assistive technology for writing Galo Molina-Vargas, Hugo Arias-Flores, Janio Jadan-Guerrero, Ecuador</p>

<p>19</p>	<p>IHSI 6: New Technologies and Inclusive Human Systems III Session Chair(s): Noemí Suárez, Ecuador and Edison Javier Guaña Moya, Ecuador</p>
<p>8:30 - 10:30 - FLORENCE</p>	<p>Digital Transformation of Education: Technology strengthens creative methodological productions in mas-ter's programs in education Noemí Suárez-Monzón, Janio Jadan-Guerrero, Maritza Librada Cáceres Mesa, Verónica Andrade Andrade, Ecuador</p> <p>Method for Assessing Accessibility in Videoconference Systems Patricia Acosta-Vargas, Javier Guaña-Moya, Gloria Acosta-Vargas, William Villegas-Ch1, Luis Salvador, Ecuador</p> <p>Teaching E-learning for Students with Visual Impairments Theresa Lobo, Portugal</p> <p>Co-Creation of Pediatric Physical Therapy Environments: The Humanistic Co-Design Process Hadeel Alomrani, Abdullah Alsinan, Rneem Almansoury, Rana Aljabr, Saudi Arabia</p> <p>Analysis of the activation volume and the pressure resistance for handling kinetic of processing food William Rolando Miranda Zamora, Nelly Leyva, Manuel Jesus Sanchez Chero, Marcos Timaná-Alvarez, Leandro Vallejos More, Priscila Estelita Luján Vera, Marlon Martín Mogollón Taboada, Peru</p>
<p>10:30 - 11:00 • Sessions Break</p>	
<p>20</p>	<p>IHSI 8: Applications and Future Trends III Session Chair(s): Janio Jadan-Guerrero, Ecuador and Zhiyuan Ye, China</p>
<p>11:00 - 13:00 - ROMA</p>	<p>Using Drones for Tourism: Exploring exciting places of Ecuador Santiago Uribe-Montesdeoca, Janio Jadan-Guerrero, Hugo Arias-Flores, Carlos Ramos-Galarza, Ecuador</p> <p>Visual perception based on Gestalt theory Zhiyuan Ye, Chengqi Xue, Yun Lin, China</p> <p>Construction Method of User Mental Model in Interaction Design Bingqing Yang, Haiyan Wang, Junkai Shao, China</p> <p>Design of Travel Auxiliary Products and APP for People with Mobility Impairments Wen Shao, Jiong Fu, Yingjue Dai, China</p> <p>Design of VR games safety criteria's based on ergonomics and behavior Simulation in family Wei Lu, Xiacheng Song, Hanjie Cao, Binhong Zhai, China</p> <p>Ergonomic Method for Redesigning Workstations to Reduce Musculoskeletal Disorders Among Workers in Textile SMEs Carlos Raymundo-Ibañez, Brenda Miranda-Rodriguez, Luis Saenz-Julcamoro, Edgardo Carvallo-Munar, Claudia Leon-Chavarri, Peru</p> <p>Design of a semi-automatic machine for processing ecological and antibacterial bricks to save concrete based on polyethylene and copper terephthalate residues in Huancayo Carlos Raymundo-Ibañez, Antony Ibarra, Grimaldo Quispe, Peru</p>
<p>21</p>	<p>IHSI 2: Humans and Artificial Cognitive Systems IV Session Chair(s): Carlos Ramos-Galarza</p>
<p>11:00 - 13:00 - MILAN</p>	<p>Technological resources to stimulate multiple intelligences: verbal-linguistic and logical-mathematical Mónica Bolaños, Micaela Silva Barragán, Pamela Acosta Rodas, Omar Córdor Herrera, Jorge Cruz Cárdenas, Carlos Ramos Galarza, Ecuador</p> <p>Proposal of an educational technological game for children's education Omar Córdor Herrera, Carlos Ramos Galarza, Ecuador</p> <p>Frequency Weighting of Student Categories in Quadrants for Remote Higher Education Under COVID 19 Pandemic Era Ernesto Hernández Martínez, Zury Mabell Sócola Juarez, Tania Jakeline Choque Rivera, Abraham Guillermo Ygnacio Santa Cruz, Walter Hernández Martinez, Peru</p>

<p>22</p>	<p>IHSI 8: Applications and Future Trends IV Session Chair(s): Joscha Wasser, Germany and Yongkang Chen, China</p>
<p>11:00 - 13:00 - PALERMO</p>	<p>Gaze based interaction for object classification in recon-naissance missions using highly automated platforms. Joscha Wasser, Marten Bloch, Konrad Bielecki, Daria Vorst, Daniel Lopez, Marcel Baltzer, Frank Flemisch, Germany</p> <p>Comparative Analysis of Emotional design based on Web of Science and CNKI Yongkang Chen, Yuhao Jiang, Xingting Wu, Renke He, China</p> <p>Design of a ventilation system for the Uchucchacua-Buenaventura Oyón-Lima mine Carlos Raymundo-Ibañez, Luis Espinoza, Grimaldo Quispe, Peru</p> <p>Maintenance Management Model for Cost Reduction by Applying TPM Through a DMAIC Approach in SMEs in Service Sector Carlos Raymundo-Ibañez, Hugo Bazan-Torres, Fernando Maradiegue-Tuesta, Peru</p> <p>Smart Retail and Phygital Customer Journey in The Kids and Toys Stores Benedetta Terenzi, Arianna Vignati, Italy</p>
<p>13:00 - 14:00 • Sessions Break</p>	
<p>24</p>	<p>IHSI 8: Applications and Future Trends V Session Chair(s): Layan Alabdullatef, Saudi Arabia and Nicoletta Adamo, USA</p>
<p>14:00 - 16:00 - ROMA</p>	<p>Co-Design of Gesture-based Arabic Sign Language (ArSL) Recognition Abeer Alnafjan, Layan Al-Abdullatef, Mayar Al-Ghamdi, Nada Al-Khalaf, Wejdan Al-Zahrani, Saudi Arabia</p> <p>Multimodal Affective Pedagogical Agents for Different Types of Learners Nicoletta Adamo, Bedrich Benes, Richard Mayer, Xingyu Lei, Zhiquan Wang, Zachary Meyer, Alyssa Lawson, United States</p> <p>Designed for Designer: An Online Co-design Workshop Di Zhu, Anni Li, Nan Wang, Jiazhen Wu, Wei Liu, China</p> <p>Application of the algorithm for the recognition of pedestrian disturbance patterns by Lucas-Kanade method in real time Carlos Raymundo-Ibañez, Abelardo Limaymanta, Carlos Cantalicio, Grimaldo Quispe, Peru</p> <p>Design of equipment for a forage and agricultural waste processor to improve livestock feed Carlos Raymundo-Ibañez, Abelardo Limaymanta, Carlos Cantalicio, Grimaldo Quispe, Peru</p> <p>Design and construction of a prototype for measuring the thermal conductivity of insulating materials, plastics and metals according to ASTM C177 with staged heating Carlos Raymundo-Ibañez, Alex Meza, Grimaldo Quispe, Peru</p> <p>Computer Vision Based Rehabilitation Assistant System Nudpakun Leechaikul, Siam Charoenseang, Thailand</p>

<p>25</p>	<p>IHSI 8: Applications and Future Trends VI Session Chair(s): Mireya Zapata, Ecuador and Jie Zhou, China</p>
<p>14:00 - 16:00 - MILAN</p>	<p>Implementation of lean manufacturing tools to improve the flow of productivity in a craft shoe workshop Nicol Manrique, Stephanie Nuñez, Grimaldo Quispe, Carlos Raymundo-Ibañez, Peruique, Stephanie Nuñez, Grimaldo Quispe, Peru</p> <p>Concept of Poverty Alleviation Design under the Cultural Viewpoint of East Asia and Its Development Evolvement and Practice Jie Zhou, China</p> <p>CAD/CAE tools and additive manufacturing to reduce the impacts of critical equipment shutdown on production planning Byron Remache-Vinueza, Kevin Davila, Mireya Zapata, Ecuador</p> <p>Comparison of Accessibility Tools for the Evaluation of E-Commerce Websites Freddy Paz, Freddy Paz, Arturo Moquillaza, Luis Collantes, Juan Arenas, Daniela Villanueva, Peru</p> <p>Mining students’ topics of interest and innermost feelings through confession pages Hoang Huu Son, Thi Ngoc Lan Dong, Ngo Thanh Hoang, Minh Tam Dao, Phan Thi Phuc, Tran Thi Huong, Vietnam</p> <p>Digital model for monitoring SME architecture design projects Gianpierre Zapata, Peru</p>
<p>26</p>	<p>IHSI 8: Applications and Future Trends VII Session Chair(s): Xiang Wu, China and Yunqing Xu, China</p>
<p>14:00 - 16:00 - PALERMO</p>	<p>Active methodologies for teaching Physics through Virtual Learning Environments Juan Carlos Polo-Mantuano, Mireya Zapata, Ecuador</p> <p>Inheritance and Innovation of Bamboo Weaving Technology in Zhejiang Province Based on Cultural Gene Extraction and Transformation Yixiang Wu, China</p> <p>Automation design for the dispersion of pigments and homogenization of water-based paint Mireya Zapata, Blanca Topon-Visarrea, Estefano Arias-Ponce, Ecuador</p> <p>Intelligent Painting Education Mode based on Individualized Learning under the Internet Vision Yunqing Xu, Yi Ji, Peng Tan Tan, Qiaoling Zhong, Ming Ma, China</p> <p>Analyzing Selfie Opportunities and Trends in a Chinese Context Ruilin Wang, Dawei Wang, Ziwei Zhang, Di Zhu, Wei Liu, China</p> <p>Influence of environmental information on users’ purchase intentions for electric two-wheelers Fei-Hui Huang, Taiwan</p>

Interactive Poster Demonstrations

Posters will be displayed Tuesday, February 23, 2021 till Wednesday, February 24, 2021.
Poster demonstration sessions will be at the times shown below.

POSTER/DEMONSTRATION SESSIONS

TUESDAY, FEBRUARY 23

Session Time: 10:30 - 17:00

- A1. **Characteristics of lower limb position perception in response to environmental information in individuals with low-vision**
Tadashi Uno, Japan
- A2. **Co-Creative Social Media Features on Video Platforms, and their Impact on Customer Relationships**
Akane Matsumae, Yumeng Zhang, Japan
- A3. **An Evaluation of Tools for Identifying Vulnerabilities in Open Source Dependencies for NodeJS Applications**
Kevin Holmes, Amir Schur, United States
- A4. **Autonomous robot for plastic waste classification**
Janusz Bobulski, Mariusz Kubanek, Poland
- A5. **Using the Social Autopsy Tool to Understand Why Neonates Die In the Builsa North District, Ghana**
Aurelia Abapali, Ghana
- B1. **Hackathon-Edu: A global competitiveness perspective**
Gabriela Tapia, Rodolfo Martinez, Fabiola Tapia, Mexico
- B2. **Developing an Application for Walking in Nature: Post COVID-19 Tourism**
Yuko Hiramatsu, Jinshan Luo, Madoka Hasegawa, Akira Sasaki, Atsushi Ito, Japan
- B3. **An approach to determine short- and long-term work ability in SmartWork system**
Otilia Kocsis, George Papoulias, Nikos Fakotakis, Konstantinos Moustakas, Greece
- B4. **Bio-plastic, the challenge of a perpetual material**
Stefania Camplone, Italy
- B5. **Analysis of employee unsafe behavior based on cellular automata model**
Wang Yan-Mei, Yunqi Dong, Xue-Bo Chen, China
- B6. **Modernization and Optimization of Drug Discovery using AI Algorithms**
Aleksandr Baghramyan, Armenia

POSTER/DEMONSTRATION SESSIONS

WEDNESDAY, FEBRUARY 24

Session Time: 10:30 - 17:00

- C1. **Comparison the ultrasonic distance sensor with the lidar in different conditions**
Lukasz Karbowski, Mariusz Kubanek, Janusz Bobulski, Poland
- C2. **Competitiveness and innovation on the frontier of knowledge: 25th Anniversary Postgraduate in Administration TecNM Tijuana**
Rodolfo Martinez Gutierrez, Carmen Esther Carey Raygoza, Carlos Hurtado Sánchez, Mexico
- C3. **Innovation in Value Chain in the Medical Tourism Industry in Tijuana, Baja California**
Alma Laura Bonilla, Rodolfo Martinez, Mexico
- D1. **Cognitive Ergonomics Applied to the Analysis of Work on Offshore Platforms**
Selma Saraiva Da Costa Moreira, Brazil
- D2. **Challenges for an Observatory of the SDG Agenda 2030 Goals from NODESS in Tijuana, Baja California**
Rodolfo Martinez, Maria Marcela Solis Quinteros, Mexico
- D3. **Competitiveness and innovation on the frontier of knowledge: 25th anniversary Postgraduate in Administration TecNM Tijuana**
Rodolfo Martinez, Carmen Esther Carey Raygoza, Carlos Hurtado Sánchez, Mexico



2022 IHSI International

5th International Conference on
Intelligent Human Systems Integration:
Integrating People and Intelligent Systems



February 22-24, 2022
Venice, Italy

WWW.IHSINT.ORG