



2022

IHSI

International

5th International Conference on

Intelligent Human Systems Integration



Final Program

22-24 February, 2022

Venice, Italy

www.ih sint.org

VIRTUAL CONFERENCE SCHEDULE

Tuesday, February 22, 2022	Wednesday, February 23, 2022	Thursday, February 24, 2022
13:30-15:00 (EST) Plenary Session and Keynote	9:00-10:30 (EST) <u>Technical Sessions</u> 11:00-12:3 (EST) <u>Technical Sessions</u> 13:30 – 15:00 (EST) <u>Technical Sessions</u> 10:30-17:00 (EST) <u>Poster Sessions</u>	9:00-10:30 (EST) <u>Technical Sessions</u> 11:00-12:30 (EST) <u>Technical Sessions</u> 13:30 – 15:00 (EST) <u>Technical Sessions</u> 10:30-12:30 (EST) <u>Poster Sessions</u>

PLENARY SESSION	Track	Room
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Tuesday, Feb 22	ALL	All
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Plenary Session and Keynote Address:

13:30-15:00 (EST)	Critical Steps for Data Analytics and Artificial Intelligence Keynote Speaker: Dr. Ben Amaba, Chief Technology Officer, IBM Data Analytics and Artificial Intelligence, USA	Live Stream Access + (13:30-15:00 EST)
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① Virtual conference program schedule is listed in Eastern Standard Time (EST) - New York Timezone

DAY 1	Track	Room 1
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SESSION 1	Automotive Design and Transportation Engineering	IHSI 1 Room Access +
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Wednesday, Feb 23	<p>Session Chair(s): Lutz Fischer, Germany and Daniel Eisele, Germany</p> <p>Factors influencing the perception of safety in automated vehicles interiors Lutz Fischer, Daniel Holder, Benedikt Weiss, Jonathan Kiessling, Florian Reichelt, Thomas Maier, Germany</p> <p>External Human-Machine-Interfaces on Automated Vehicles: Which message and perspective do pedestrians in crossing situations understand best? Sebastian Ludwig Weiß, Daniel Eisele, Tibor Petzoldt, Germany</p> <p>Biologically Inspired Automotive User Interfaces for Partially and Highly Automated Maneuver Gestures: Final Results and Outlook Nicolas Daniel Herzberger, Marcel Usai, Michael Preutenborbeck, Ronald Meyer, Gina Wessel, Frank Flemisch, Germany</p> <p>Human Driver's Reasoning on Moral Dilemma of Autonomous Vehicles: Values and Themes Gibbeum Lee, Namwoo Kang, Ji-Hyun Lee, South Korea</p>	
9:00 - 10:30 (EST)		

Predicting Takeover Quality in Conditionally Autonomous Vehicles based on Takeover Request Modalities, Driver Physiological State and the Environment

Emmanuel De Salis, Quentin Meteier, Marine Capallera, Colin Pelletier, Leonardo Angelini, Omar Abou Khaled, Elena Mugellini, Marino Widmer, Stefano Carrino, Switzerland

Making wireless charging a reality: A real-world mixed methods evaluation of vehicle alignment

Arun Ulahannan, Katie Zdanowicz, Cameron Bowie, Stewart Birrell, United Kingdom

DAY 1		Track	Room 2
SESSION 2	Humans and Artificial Cognitive Systems I	IHSI 2	Room Access +
Wednesday, Feb 23	Session Chair(s): Sergio Staab, Germany and Francesco Burlando, Italy		
9:00 - 10:30 (EST)	<p>Movement Recognition to Analyze Disease-Related Changes in Motor Skills of Dementia Patients Sergio Staab, Ludger Martin, Germany SiRobotics – an assistive experimental robot Niccolò Casiddu, Francesco Burlando, Claudia Porfirione, Annapaola Vacanti, Italy</p> <p>Enhancing the Computation of Barrier-free Routes via Crowdsourcing Bettina Harriehausen-Mühlbauer, Germany</p> <p>A Business Process Model Driven Chatbot Architecture Toni Starčić, Srđan Daniel Simić, Aldo Ferlatti, Darko Etinger, Nikola Tankovic, Croatia</p> <p>Examining the Mechanism of Concentration on Intellectual Works by Simulation Using Cognitive Architecture Kimi Ueda, Ryuhei Sakamoto, Hirotake Ishii, Hiroshi Shimoda, Fumiaki Obayashi, Junya Morita, Japan</p> <p>The Recovery Effect in Work Efficiency by Temporary Stimulative Airflow Kyoko Ito, Yuta Tsuji, Hirotake Ishii, Hiroshi Shimoda, Kazuhiro Taniguchi, Fumiaki Obayashi, Japan</p> <p>Neurodidactics technological tools Patricio Pérez-Silva, Kleber Pazos-Espinoza, Marco Pérez-Andrade, Carlos Ramos Galarza, Ecuador</p>		

DAY 1		Track	Room 3
SESSION 3	Intelligence, Technology and Analytics I	IHSI 3	Room Access +
Wednesday, Feb 23	Session Chair(s): Leon Reinsch, Germany and John Keith Wilson, United States		
9:00 - 10:30 (EST)	<p>Ontologies - Introduction and practical approach to textile engineering Leon Reinsch, Christoph Greb, Thomas Gries, Germany</p> <p>Predictive Data Analytics in Aviation Maintenance: A Cultural Perspective Bettina Mrusek, John K. Wilson, Jim Solti, Mark Reimann, Ken Witcher, United States</p> <p>Smart Cities Strategies in Developing Countries: The Case of Lusail City, Qatar</p>		

Mohamed Adalbi, M Salim Ferwati, Ahmad Mohammad Ahmad,
Yong Cheol Lee, Qatar

Data-based quality analysis in machining production: A case study on
sequencing time series for classification

Amina Ziegenbein, Joachim Metternich, Germany

A Topic Modeling Approach for Exploring Attraction of Dark Souls
Series Reviews on Steam

Yang Yu, Ba Hung Nguyen, Duy Tai Dinh, Fangyu Yu, Tsutomu
Fujinami, Van Nam Huynh, Japan

Probabilistic Approach to Modeling Human Behavior Based on
Pupillary Response Control

Oksana Isaeva, Victoria Moshkina, Marina Boronenko, Yura
Boronenko, Russia

Feasibility Study of the Implementation of IR Technology for the
Recognition of Covid-19 Carriers in Public Places

Miguel Angel Quiroz Martinez, Daniela Claudett Villalba, Monica
Daniela Gomez Rios, Maikel Leyva, Ecuador

DAY 1		Track	Room 4
SESSION 4	Computational Modeling and Simulation I	IHSI 4	Room Access +
Wednesday, Feb 23	Session Chair(s): Dandan Kowarsch, United States and Marcel Caspar Baltzer, Germany		
9:00 - 10:30 (EST)	<p>A System Dynamics Approach on Modeling Homeless Prevention Strategy: A Case Study of LA County Dandan Kowarsch, Zining Yang, United States</p> <p>Balanced HSI for Energy – A System Dynamics Model for Energy Systems Marcel Baltzer, Marcel Usai, Frank Flemisch, Germany</p> <p>Industrial Perspectives on Government Open Data Strategy Effectiveness Mona Mohamed, United States</p> <p>From Emotion to Geometry: The Analysis of Tone in Written Communication as a Computational Design Tool Jorge Camba, Manuel Contero, David Pérez-López, United States</p> <p>Dynamic Multi-Criteria Decision-Making for Identifying Vulnerable Communities for Emergency Planning Justine Caylor, Robert Hammell, United States</p> <p>A CAD toolset for modeling and synthesis of technosphere safety systems using blockchain technology Georgii Kupriianov, Remir Solnitsev, Russia</p> <p>Unsupervised Machine Learning for Pattern Identification in Occupational Accidents Fatemeh Davoudi Kakhki, Steven A Freeman, Gretchen A Mosher, United States</p>		

10:30 - 11:00 • Sessions Break

DAY 1		Track	Room 1
SESSION 5	Humans and Artificial Systems Complexity I	IHSI 5	Room Access +
Wednesday, Feb 23	Session Chair(s): Debora Di Caprio, Italy and Norbert L. Brodtmann, Germany		
11:00 - 12:30 (EST)	<p>Dynamic Bézier Curves, New Findings on Reparameterization by Arc length Norbert L. Brodtmann, Daniel Schilberg, Germany</p> <p>AI-based component management system for structured content creation, annotation, and publication Annalisa Barla, Marina Cuneo, Simone Roberto Nunzi, Giorgia Paniati, Andrea Vian, Italy</p> <p>Gait Analysis for Rehabilitation using Rigid and Flexible Exoskeletons Robert Dizor, S M Mizanoor Rahman, Anil Raj, United States</p> <p>Data Sources and the Uncertainty of Information (UoI) Experimental Research Adrienne Raglin, Aleah Emlet, Justine Caylor, John Richardson, Mark Mittrick, Somiya Metu, United States</p> <p>The Construction of the Evaluation Index System of Children's Educational Game Learning Accessibility Xueying Yao, Tianyu Zhou, Yafeng Niu, China</p> <p>Identifying Complex Patterns in Online Information Retrieval Processes Debora Di Caprio, Francisco Javier Santos Arteaga, Italy</p>		

DAY 1		Track	Room 2
SESSION 6	New Technologies and Inclusive Human Systems I	IHSI 6	Room Access +
Wednesday, Feb 23	Session Chair(s): Martina Motta, Italy and Giulia Lo Scocco, Italy		
11:00 - 12:30 (EST)	<p>Translating the creative process of knitwear design: going from manual to digital practices in a material-driven approach Martina Motta, Italy</p> <p>The Digitalization of Knitwear: Towards a redefinition of the conventional design boundaries Giulia Lo Scocco, Giovanni Maria Conti, Martina Motta, Italy</p> <p>Bio-Augmented Materiality. Towards the Next Biomimicry Carmen Rotondi, Italy</p> <p>Design through the layers: Smart textiles for contemporary design solutions and sustainable consumption processes Rossana Gaddi, Giovanni Maria Conti, Italy</p> <p>The near (bio)future in design Sabrina Lucibello, Italy</p>		

DAY 1		Track	Room 3
SESSION 8	Applications and Future Trends I	IHSI 8	Room Access +
Wednesday, Feb 23	Session Chair(s): H. Patricia McKenna, Canada and Zih-Ling He, Taiwan		
11:00 - 12:30 (EST)	<p>Ambient Theory for Smart Cities: Is It a Good Theory? H. Patricia Mckenna, Canada</p> <p>Improvement of Robot Service Route Zih-Ling He, Jui-Hung Cheng, Jia-Hong Shen, Yu-Xuan Hsueh, Taiwan</p> <p>Design and the appropriation of 3D printing techniques in the management of an innovative product system in the field of wind musical instruments Liliana Soares, Ermanno Aparo, Rita Almendra, Portugal</p> <p>Occupational Safety and Health Affected by Climate Change: Future Challenges and Research Agenda Sari Tappura, Maria Linsholm, Finland</p> <p>Health and occupational risks analysis in custom border offices Irina Severin, Gabriela Nalbitoru, Mihai Caramihai, Romania</p> <p>Consumer acceptance of shared e-scooter services for short-distance mobility Fei-Hui Huang, Taiwan</p> <p>The narrative design of the city spaces Peian Yao, Stefano Follesa, Italy</p>		
DAY 1		Track	Room 4
SESSION 9	Automotive Design and Transportation Engineering II	IHSI 1	Room Access +
Wednesday, Feb 23	Session Chair(s): Waldemar Titov, Germany and Fabian Schmiel, Germany		
11:00 - 12:30 (EST)	<p>Data-based usage analysis of shared e-scooters in the context of public transport Rafael Oehme, Waldemar Titov, Konstantin Krauss, Till Gnann, Thomas Schlegel, Germany</p> <p>User-Centered Development and Evaluation of a Physical Ultrafast Charging Interface Fabian Schmiel, Simon Buck, Lampros Tsolakidis, Alexander Müller, Germany</p> <p>Usability design of concrete grouting equipment Yuchen Xi, Xue Chen, China</p> <p>Creating Tactile Interaction Surfaces for the Origo Steering Wheel Concept using CWI and EHWs Ahmed Farooq, Hasse Sinivaara, Mikko Laaksonen, Hanna Virtainen, Arto Hippula, Veikko Surakka, Roope Raisamo, Finland</p> <p>Evaluation of Liquefied Petroleum Gas as a Fuel Input in a Mechanical Injection Diesel Internal Combustion Engine Fabian Sarmiento, Andrés Moran, Pablo Ron, Ecuador</p>		
12:30 - 13:30 • Sessions Break			

DAY 1		Track	Room 1
SESSION 10	Humans and Artificial Cognitive Systems II	IHSI 2	Room Access +
Wednesday, Feb 23	Session Chair(s): Nicoletta Adamo, United States and Shuichi Fukuda, Japan		
13:30 -15:00 (EST)	<p>Micro-expressions in Animated Agents Tianyu Hou, Nicoletta Adamo, Nicholas Villani, United States</p> <p>Instinct-Driven Engineering Shuichi Fukuda, Japan</p> <p>Comparative Analysis of RGB-based Eye-Tracking for Large-Scale Human-Machine Applications Nicholas Caporusso, Trung Cao, Brett Thaman, United States</p> <p>The personal development of teachers and pupils within the context of health and safety in education Cestmir Serafin, Jana Depesova, Czech Republic</p> <p>Parallelising 2D-CNNs and transformers: A Cognitive-based approach for Automatic Recognition of Learners' English Proficiency Meishu Song, Emilia Parada-Cabaleiro, Zijiang Yang, Xin Jing, Kazumasa Togami, Kun Qian, Björn Schuller, Yamamoto Yoshiharu, Germany</p> <p>Demonstrator for a Collaborative Human-Robot Picking System Mathias Rieder, Norbert Bartneck, Germany</p> <p>Virtual Environments in Learning the Biology of High School Students Marco Páez-Andrade, Kleber Pazos-Espinoza, Patricio Pérez-Silva, Carlos Ramos Galarza, Ecuador</p>		

DAY 1		Track	Room 2
SESSION 11	Intelligence, Technology and Analytics II	IHSI 3	Room Access +
Wednesday, Feb 23	Session Chair(s): Fatemeh Davoudikakhki, United States		
13:30 -15:00 (EST)	<p>Comparative Study of Decision Tree Models for Bearing Fault Detection and Classification Armin Moghadam, Fatemeh Davoudi Kakhki, United States</p> <p>Design of a VR-based training system for the evacuation of an engineering laboratory building Yulyana Rodríguez Bautista, Juan Fernando Castro Medina, Diego Andrés Quintero Ardila, Carol Natalia Rangel Santamaría, Sebastian Alberto Peláez Gómez, Colombia</p> <p>Automation of the wastewater reception process for fish protein production Blanca Topon-Visarrea, Andrés Moran, Mauricio Valle, Ecuador</p> <p>Effective Application of Cloud Platform in Classroom Online Teaching Xuan Meng, Shiwen Hu, China</p> <p>Building fire risk assessment based on machine learning Aiming Xu, Beibei Sun, China</p> <p>Emotion recognition – Validation of a measurement environment based on psychophysiological parameters Ramona Schmid, Linn Braunmiller, Lena Hansen, Christopher Schonert, Knut Möller, Verena Wagner-Hartl, Germany</p>		

DAY 1		Track	Room 3
SESSION 12	Computational Modeling and Simulation II	IHSI 4	Room Access +
Wednesday, Feb 23	Session Chair(s): Naryn Samuel, United States and Dobrinka Peicheva, Bulgaria		
13:30 -15:00 (EST)	<p>A Peer-to-Peer Psychological Support Corpus for Developing Conversational Agents in the context of Long-Distance Relationships Nicholas Caporusso, Naryn Samuel, Devyn Ferman, United States</p> <p>Virtuality and Reality: The Digitalization of Societies and Possible Consequences Dobrinka Peicheva, Valentina Milenkova, Dilyana Keranova, Vladislava Lendzhova, Violeta Nikolova, Bulgaria</p> <p>Generative Adversarial Network Algorithms in Art: Data Video Lai Man Tin, Hong Kong SAR China</p> <p>Stress Analysis and Test of the Inner Drum of Cylinder Washing Machine Connected by Flanging Riveting Ying Liu, Yunfei Chen, China</p> <p>Numerical simulation and impact test of hand-held vacuum cleaner dust collector Hao Song, Yan Zhang, China</p> <p>Design and digital modeling of a blackberry pulp production plant. Eduardo Teneda Ramos, Lorena Cáceres Miranda, Leonardo Cuenca, José Varela-Aldás, Ecuador</p>		

DAY 1		Track	Room 4
SESSION 13	Humans and Artificial Systems Complexity II	IHSI 5	Room Access +
Wednesday, Feb 23	Session Chair(s): Johanna Silvennoinen, Finland and Frank Flemisch, Germany		
13:30 -15:00 (EST)	<p>Are Rider-Horse or Centaurs intelligent Human Systems Integration? First Sketch of reversible and non-reversible human technology/machine/AI Symbiosis Frank Flemisch, Marcel Baltzer, Germany</p> <p>The future of skills in mining automation control rooms Peta Chirgwin, Australia</p> <p>Emotional Information Space in Designing AI Technologies Johanna Silvennoinen, Pertti Saariluoma, Finland</p> <p>Hybrid Territorial-Artificial Systems. Opportunities in Design for Territories Benedetta Terenzi, Italy</p> <p>A Physical User Interface Description Language for Interface Digital Twins Nicholas Caporusso, Aryan Tandon, Samuel Sungmin Cho, Tewodros Amare, Sarah Neace, United States</p> <p>The role of the AI availability and perceived risks on AI adoption and organizational values Maryam Alzaabi, Ahmed Shuhaiber, United Arab Emirates</p> <p>Directive Management In Complex Systems to Promote the Level of Use of Techniques In Operations Lloyd Morris, Olga Jasmin Salazar De Morris, Hernán Espejo Viñán, Colombia</p>		

DAY 2		Track	Room 1
SESSION 14	New Technologies and Inclusive Human Systems II	IHSI 6	Room Access +
Thursday, Feb 24	Session Chair(s): Andrea Marinelli, Italy and Katherine Hernández, Republic Ecuador		
9:00 - 10:30 (EST)	<p>HOYO – Shape Memory Alloys enable a new way to approach the treatment of the Autism Spectrum Disorder Alice De Nardi, Andrea Marinelli, Flavia Papile, Andrea Cadelli, Andrea Conte, Barbara Del Curto, Italy</p> <p>Hybrid Sensory Surfaces: Biological meets Digital Lorena Trebbi, Chiara Del Gesso, Italy</p> <p>Dematerialized meeting places and digital design for interaction and participation Raffaella Massacesi, Italy</p> <p>High performance micromixers by 3D printing based on split-and-recombine modules and twisted-architecture microchannel Yuan Jiang, Yan Zhang, China</p> <p>Pleasure and Suffering at Work in the Technical Act: A Case Study From a Garment Factory in a Context of Technological Transformation Liliana Cunha, Daniel Silva, Sarah Maggioli, Ana Correia De Barros, Catarina Correia, Fernando Ricaldoni, Susana Amorim Brito, Portugal</p> <p>Assistive Technology: Design and Implementation of an Eye Tracking Based Electric Wheelchair Control System for Children with Cerebral Palsy Katherine Hernandez, Veronica Salinas, Hugo Torres, Fernando Estevez, Diego Almeida- Galárraga, Omar Alvarado Cando, Ecuador</p>		

DAY 2		Track	Room 2
SESSION 15	Applications and Future Trends II	IHSI 8	Room Access +
Thursday, Feb 24	Session Chair(s): Anil Raj, United States and Masahiro Miki, Japan		
9:00 - 10:30 (EST)	<p>Exoskeleton Design Considerations based on the Lower Extremity Musculoskeletal Anatomy Robert Dizor, S M Mizanoor Rahman, Anil Raj, United States</p> <p>Smartphone based accurate touch operations on an AR desktop Masahiro Miki, Munehiro Takimoto, Yasushi Kambayashi, Japan</p> <p>Cognitive Mimetics for Designing Intelligent Industrial Systems: Case Next-Generation Diary Antero Karvonen, Olli Kuusisto, Pertti Saariluoma, Finland</p> <p>Investigation of experimental methods for clarifying the mechanism of consensus building Mizuki Yamawaki, Yoshiki Sakamoto, Rieko Yamamoto, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Kyoto Ito, Japan</p>		

Credit classification using regulation techniques on the Credit German database

Sebastian Sosa, Priscila Rivera, Cristhian Nicolas Aldana Yarleque, Yesenia Saavedra Navarro, Luis Ramón Trelles Pozo, Gustavo Mendoza, Peru

A Framework for Usability Testing using EEG Signals with Emotion Recognition

Arwa Aledaily, Soffien Gannoun, Hatim Aboalsamh, Kais Belwafi, Saudi Arabia

The Automatic Recommendation and Color Testing Method for Lip Gloss Based on Image Recognition

Jin Liu, Yafeng Niu, Hongrui Zuo, Jiahao Wang, Lang Xiao, China

DAY 2		Track	Room 3
SESSION 16	Humans and Artificial Cognitive Systems III	IHSI 2	Room Access +
Thursday, Feb 24	Session Chair(s): Shrikant Pawar, USA		
9:00 - 10:30 (EST)	<p>Naturality and non-transparency of technology in the age of intelligent voice assistants</p> <p>Jaroslav Kowalski, Cezary Biele, Kazimierz Krzysztofek, Poland</p> <p>Investigating users' color perception in optical see-through augmented reality: The Effect of ambient light on interface color</p> <p>Yuan Cao, Xiaozhou Zhou, China</p> <p>Investigating the effect of targets' spatial distribution on the performance of gesture interaction in virtual reality environment</p> <p>Kai Chen, Xiaozhou Zhou, Chengqi Xue, China</p> <p>The Differences between Eye Control and Touch Games in Children's Learning</p> <p>Lang Xiao, Yafeng Niu, Tianyu Zhou, Wenjun Yang, China</p> <p>The mapping relationship between PERCLOS and work fatigue: a correlation verification experiment based on radial basis function neural network</p> <p>Ziyu Yao, Xiaozhou Zhou, Jichen Han, Hao Qin, Hanyang Xu, China</p> <p>Hearing loss, mobile applications and inclusive social environments: Approach to learning sign language for children without disabilities</p> <p>Jose Oleas Orozco, Angel Mena, Daniel Ripalda, Ecuador</p>		

DAY 2		Track	Room 4
SESSION 17	Intelligence, Technology and Analytics III	IHSI 3	Room Access +
Thursday, Feb 24	Session Chair(s): Galia Kondova, Switzerland and Daniel Silva, Portugal		
9:00 - 10:30 (EST)	<p>Distributed Ledger Technology in Autonomous Driving: A Security Protection Layer</p> <p>Nicola Raemy, Galia Kondova, Switzerland</p> <p>Who really wants automated vehicles? Determinant factors of acceptability profiles in Portugal</p> <p>Liliana Cunha, Daniel Silva, Daniela Monteiro, Sara Ferreira, António Lobo, António Couto, Anabela Simões, Catarina Neto, Portugal</p>		

Intelligent RAN Slicing Orchestration Framework For Healthcare Application in 5G

Srikanth Sailada, Anil Gupta, Suresh V, Vineeth Aitipamula, India

Benchmarking of activation functions for breast cancer detection

Miguel Angel Quiroz Martinez, Ronald Darío Montoya Guillén,

Galo Enrique Valverde Landivar, Maikel Leyva, Ecuador

Psychophysiological parameters for emotion recognition – Conception and first evaluation of a measurement environment

Ruben Weber, Jonas Birkle, Knut Möller, Verena Wagner-Hartl, Germany

10:30 - 11:00 • Sessions Break

DAY 2		Track	Room 1
SESSION 18	Computational Modeling and Simulation III	IHSI 4	<u>Room Access +</u>
Thursday, Feb 24	Session Chair(s): Yulia Morozova, Russia and Junhui Fei, China		
11:00 - 12:30 (EST)	<p>Cognitive Mapping of Strategic Development in the Agricultural Sector Yulia Morozova, Russia</p> <p>Quantitative evaluation method of small and medium-sized residential layout Junhui Fei, Beibei Sun, China</p> <p>Noise pattern definition methodology for noise cancellation in coughs signals using an adaptive filter Santiago Felipe Luna Romero, Christian Salamea Palacios, Ecuador</p> <p>Thermo-mechanical Coupling Analysis of T/R Module Based on HTCC Substrate Bi Zhang, Guoqing Yong, Changming Hu, Yan Zhang, Yunfei Chen, China</p> <p>Simulation and Experiment of Hand-held Vacuum Cleaner Host Drop Peng Lu, Hao Song, Bi Zhang, Jie Wang, Qingmei Zhu, Yan Zhang, China</p>		

DAY 2		Track	Room 2
SESSION 19	Humans and Artificial Systems Complexity III	IHSI 5	<u>Room Access +</u>
Thursday, Feb 24	Session Chair(s): Lorena Olmos Pineda, Mexico and Lorena Olmos Pineda, Mexico		
11:00 - 12:30 (EST)	<p>Relationship of Emotional Responses with the Activation of Sensory Mechanisms during Interaction Processes with Virtual Products of Mass Distribution Lorena Olmos Pineda, Jorge Gil Tejeda, Mexico</p> <p>The Effects of Visual or Auditory Interruption on Task Performance - Combination of Behavior Data and Eye Movement Analysis Huimei Jing, Xiaoxi Du, Xiaozhou Zhou, ChengQi Xue, China</p> <p>Ergonomic Evaluation Index System for Fighter Planes Cockpit Touch Screens</p>		

Fei Wang, Wenzhe Tang, Ruoyu Hu, Zhiman Zhu, Xiuhang Xu,
Chengqi Xue, China

Speech + Posture: A Method for Interaction with Multiple and Large
Interactive Displays

Xiaoxi Du, Lesong Jia, Weiye Xiao, Xiaozhou Zhou, Mu Tong,
Jinchun Wu, Chengqi Xue, China

Cognitive Model for Probability Density Distribution Uncertainty
Visualization

Ruoyu Hu, Xinyue Wang, Haiyan Wang, Chengqi Xue, China
Transfer of Information Derived from the Content of Virtual Products of
Mass Distribution

Lorena Olmos Pineda, Jorge Gil Tejada, Mexico

DAY 2		Track	Room 3
SESSION 21	Applications and Future Trends III	IHSI 8	Room Access +
Thursday, Feb 24	Session Chair(s): Mārtiņš Danusēvičs, Latvia and Grzegorz Banerski, Poland		
11:00 - 12:30 (EST)	<p>Modular construction cost forecasting design to support continuous construction system improvements Martins Danusevics, Liga Braslina, Daine Skiltere, Anda Batraga, Girts Braslins, Latvia</p> <p>Ready, Steady, Go: professionally designed virtual reality physical training sessions during the COVID-19 pandemic Grzegorz Banerski, Katarzyna Abramczuk, Poland</p> <p>Digital Environments for Biology Learning in High School Wilmer Quishpe, Mireya Zapata, Ecuador</p> <p>Comparison of Arima and Holt-Winters forecasting models for time series of cereal production in Peru Humberto Saul Sernaque Herrera, Moly Dayana Meca Barreto, Eduardo Daniel Zapata Tavera, Berenise Nicol Marchan Domador, Junior Eduardo Medina Peña, Denis Alexis Nole Villalobos, Cristhian Nicolas Aldana Yarleque, Yesenia Saavedra Navarro, Luis Ramón Trelles Pozo, Nelson Chuquihuanca Yacsahuanca, Gustavo Mendoza, Peru</p> <p>Determinants of renewable and non-renewable energy demand and new trends in Peru Angie Gianella Valdiviezo Curipuma, Sarai Elizabeth Leon Vera, Santos Ebert Yanayaco Culquicondor, Yesenia Saavedra Navarro, Cristhian Nicolas Aldana Yarleque, Luis Ramón Trelles Pozo, Nelson Chuquihuanca Yacsahuanca, Gustavo Mendoza, Peru</p> <p>Agile Methodologies in the Fashion Industry Maritzol Tenemaza, Carlos Sarzosa, Ecuador</p> <p>An exploration on stimulating game developers' engagement using sandbox game development environment in higher education design courses Tengfei Xian, China</p>		

DAY 2		Track	Room 4
SESSION 22	Humans and Artificial Cognitive Systems IV	IHSI 2	Room Access +
Thursday, Feb 24	Session Chair(s): Ana Alvarez , Ecuador and Zhen Zhang, China		
11:00 - 12:30 (EST)	<p>Cognitive Computing potential for single-pilot operations for commercial planes Charles Dormoy, Jean-Marc Andre, Turkan Hentati, France</p> <p>Ergonomic evaluation of aircraft maintenance based on VACP model Xiao Chen, Zhen Zhang, Xin Song, Xiang Xu, Jianwei Niu, China</p> <p>Modeling of the laminating machine based on ergonomic studies for the manufacture of marzipan handicrafts Ana Alvarez Sanchez, Alexis Suárez Del Villar Labastida, Anthony René Ango Venegas, Eric Martinez Tocoronte, Ecuador</p> <p>Implementation of a Low-Cost Electroencephalography System for the Analysis of Neurological Biosignals for Neuropsychological Studies David Bermeo , Daniel Urgilés, Génesis Vásquez, Omar Alvarado Cando, Diego Almeida- Galárraga, Ecuador</p> <p>Developing a software for the affective image tests using eye tracking technology Juan Uguña, Juan Pablo Zúñiga, Andrea Barrera, Andrea Argudo, Omar Alvarado Cando, Alexandra Bermeo, Ecuador</p> <p>Evaluation of the Readability and Legibility of Fonts on the Cockpit Interface Xia Shuang, Huang Shan, Haiyan Wang, China</p> <p>A Hybrid Approach to MCDM Entropy - TOPSIS for the Selection of Machine Learning Classifiers for Software Defect Prediction Miguel Angel Quiroz Martinez, Eduardo Xavier Moreira Bermello, Wilmer Paul Carrillo Leon, Luis Briones, Ecuador</p>		

12:30 - 13:30 • Sessions Break

DAY 2		Track	Room 1
SESSION 23	Applications and Future Trends IV	IHSI 8	Room Access +
Thursday, Feb 24	Session Chair(s): Luis Trelles, Peru and Donglin Wang, Same as country		
13:30 -15:00 (EST)	<p>Detection of Outliers in The Peruvian Fruit Production Time Series Using Arima Models Manuel Chávez, Israel Chavez, Eduardo Torres, Sandro Atoche, Stefano Palacios, Luis Ramón Trelles Pozo, Yesenia Saavedra Navarro, Cristhian Nicolas Aldana Yarleque, Gustavo Mendoza, Nelson Chuquihuanca Yacsahuanca, Peru</p> <p>Designing and Evaluating of an iPad-based Reading Mode for Enhancing the Efficiency of Non-native Immersive Reading Donglin Wang, Yuning Qian, Jiong Fu, Hongli Jia, China</p> <p>Design of Smart Household Beauty Apparatus Targeting the Young Consumers Xinhui Li, Jiong Fu, China</p>		

Comparing design behaviours between teams with the same design background and teams with different design backgrounds during brainstorming

Yi Teng Shih, Hong Kong Sar China

Production of educational videogame from the design document

Miguel Cobos, Daniel Ripalda, Ecuador

Art-technology: contributions to the future intertwining of creative actions

Silvia Laurentiz, Brazil

The interface design of Chinese input keyboard applied to eye movement control system

Lei Tang, Yunfei Chen, Ziyue Huang, Qian Chen, China

DAY 2		Track	Room 2
SESSION 25	Applications and Future Trends V	IHSI 8	Room Access +
Thursday, Feb 24	Session Chair(s): Liwei Chen, China and Lin Zhu, China		
13:30 -15:00 (EST)	<p>Layout Evaluation of Luban Banner Interface Elements Based on Aesthetic Calculation Liwei Chen, Ning Zhang, China</p> <p>Future Footprint: Explore the Unexpected Future from the Existing Signals Through the Prototype Inspiration Lin Zhu, Wentong Huang, Fu Zhiyong, China</p> <p>Design of Point Pop-ups with Visual Representation based on Weather Map Interface Junkai Shao, Wenzhe tang, Bingqing Yang, ChengQi Xue, China</p> <p>The Application of the Aesthetic Measures of Interface Layout in Drawing 2.5D Graphic Zhiman Zhu, Fei Wang, Ruoyu Hu, Ningyue Peng, Chengqi Xue, China</p> <p>Are answers more important than questions? Planning an empathy design innovation course for elementary school students Jing Qiu, Jingyang Li, Zhao Xu, Ruonan Huang, Ruikang Wang, Lingjie Wu, Xiaojian Wu, Fan Yang, Zhejun Zhang, Vafa Asgarova, Wei Liu, China</p> <p>Effect of color brightness change on interface balance Xia Liu, Yan Zhang, China</p> <p>Optimal Design of Operating Interface in Slidform Paver's Remote Controller Ziyue Huang, Yunfei Chen, Lei Tang, Qian Chen, China</p>		

DAY 2		Track	Room 3
SESSION 26	Applications and Future Trends VI	IHSI 8	Room Access +
Thursday, Feb 24	Session Chair(s): Yibo Wang, China and Xiang Xu, China		
13:30 -15:00 (EST)	<p>Design of Smart Portable Sunshade for Thermal Comfort Improvement Yibo Wang, Jiao Xue, Xinyu Zhao, Xiao Hu, Chen Ze, Wen Shikang, China</p> <p>Parametric modeling of digital human based on Unity Xiao Chen, Xiang Xu, Xin Song, Zhen Zhang, Jianwei Niu, China</p>		

Functional diversity: The need for technological accessibility in learning
Karina Delgado , Janio Jadan-Guerrero, Ecuador

Augmented Reality in Robotics Learning
Fabian Noriega, Mireya Zapata, Ecuador

Design of interfaces for Dyslexia and Dyscalculia Applications
Daniel Ripalda, Miguel Cobos, Mario Piedra, Yamirlis Gallar Perez,
Ecuador

An overview of the development of cloud-based CAE software in the
context of industrial Internet
Shichao Meng, China

Interactive Learning: Numbers Application Based on Augmented
Reality
Nigar Tuğbagül Altan, Oğuzkaan Sarıkaya, Turkey

DAY 2		Track	Room 4
SESSION 27	Applications and Future Trends VII	IHSI 8	Room Access +
Thursday, Feb 24	Session Chair(s): Shuang Liang, Italy and Min Zhou, Italy		
13:30 -15:00 (EST)	Smart Healthcare Service System for Elderly Based on AIoMT Shuang Liang, Min Zhou, Peian Yao, Francesca Tosi, China		
	New craft design in the digital age Min Zhou, Shuang Liang, Peian Yao, Stefano Follesa, China		
	Layout of Direct Input Interface Based on Virtual Space Helu Li, Xiaozhou Zhou, China		
	Application of Genetic Algorithm in data Visualization color matching realized by front-end Chuyu You, Beibei Sun, China		
	Research on Key Elements of UI Design of Image Editing System Based on CSCW Qian Chen, Yunfei Chen, Ziyue Huang, Lei Tang, China		
	Interactive Application with Motion Comics In The School Bullying Awareness Process Eduardo Navas, Sebastian Armendariz, Ecuador		
	Pleasurable emotions of product design Xinying Wu, Ming-Gang Yang, Zishun Su, China		
	Design of Smart Curtain Based on Affordance Mi Tian, Jie Zhang, Ming Li, Xiaori Dong, China		
15:00 - 15:30 • Sessions Break			

Poster Demonstration Sessions:

SESSION A Poster Demonstration Session

Wednesday Feb 23 and Thursday, Feb 24 [10:30 - 16:00] (EST)

[Click here to Access Poser Session Streaming](#)

- A-1** How do younger vs. older cyclists assess a cyclist warning system?
Sabine Springer, Isabel Kreißig, Josef F. Krems, Germany
- A-2** A user-centred terminology for existing and upcoming ICT devices, services and applications
Martin Boecker, Omar Qawasmeh, Emmanuel Darmois, Germany
- A-3** The use of smart glasses in the assembly industry can lead to an increase in the local maximum values of the forehead temperatures.
Martin Laun, Daniel Friemert, Christian Czech, Ulrich Hartmann, Germany
- A-4** Machine Learning improves use of Haptic Glove for engineers in Virtual Reality
Kathrin Konkol, Andreas Geiger, Tim Ginzler, Germany
- A-5** Icon Style Transformation Based on Generative Adversarial Networks
Hongyi Yang, Xinyue Wang, ChengQi Xue, Xiaoying Yang, China
- A-6** Efficient KD tree collision detection based on linear motion
Tan Koinuma, Munehiro Takimoto, Japan

SESSION B Poster Demonstration Session

Wednesday Feb 23 and Thursday, Feb 24 [10:30 - 16:00] (EST)

[Click here to Access Poser Session Streaming](#)

- B-1** Quantum Based Brain-Computer Interface Performance Analysis for Next-Generation Metaverse
Janne heilala, Finland
- B-2** Artificial intelligence solutions in Parkinson therapy
Anika Thurmann, Kerstin Prof. Dr. Bilda, Fiona Dörr, Germany
- B-3** Correlational Analysis Between Work Absenteeism and Aspects of Human Behavior
Luis Gabriel Gutiérrez, María Alexandra Malagón Torrez, Jaime Alonso Tobón Gaviria, Colombia
- B-4** Human-computer collaboration in a high precision environment: exceeding performance and reciprocal learning
Toni Waefler, Philipp Renggli, Stefan Suessmaier, Lukas Weiss, Switzerland
- B-5** Clustering Analysis of Visited Places in the City based on Social media data: The Case of Daejeon in South Korea
Mi Chang, Gibbeum Lee, Sueun Jung, Ji-Hyun Lee, South Korea

SESSION C Poster Demonstration Session

Wednesday Feb 23 and Thursday, Feb 24 [10:30 - 16:00] (EST)

[Click here to Access Poser Session Streaming](#)

- C-1** User-Centered Design to Improve Usability of e-Learning System
 Gibbeum Lee, Mi Chang, Juhyun Lee, Joosun Yum , Ji-Hyun Lee,
 South Korea
- C-2** Improving User-centered Interface for Smart Mirror as a Product-Service
 System Design
 Joosun Yum , Juhyun Lee, Po Yan Lai, Ji-Hyun Lee, South Korea
- C-3** Simulation of Three-person Cooperation - Effect of Mutual Beliefs on
 Team Performance
 Sumie Cho, Taro Kanno, Kazuo Furuta, Japan
- C-4** Comparative color analysis of icons and logos
 Xiaoying Yang, Hongyi Yang, Xingsong Wang, China
- C-5** Comparative Study on Implicit Guidance in Game Design
 Ziyi Yu, Fang Liu, China