IHSED
International
Human Systems
Engineering and
Design Conference
2019
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2019
IHSED
International

2nd International Conference on
Human Systems Engineering and Design: Future Trends and Applications

September 16-18, 2019
Universität der Bundeswehr München
Munich, Germany

Final Program

WWW.IHSED.ORG

Conference Keynote Opening
Monday, September 16, 2019 at 13:00 - 15:00

Prof. Dr. Oliver Rose - Dean Faculty for Computer Science

Keynote Speaker
Major General Reinhard Wolski

Speech Title: "Digitization in Defence and Security-Command and Control as Comprehensive Approach in Airlift and Rescue Operations"

Location: Universität der Bundeswehr München, Munich, Germany Audimax, Werner-Heisenberg-Weg 39, 85579 Neubiberg, Germany

Conference Reception/Banquet
Monday, September 16, 2019 at 18:30-22:30

Welcome Address
Prof. Dr. Stefan Pickl

Conference Reception with Vernissage 2003 by Petra Thienel

Location: Bavarie by Käfer (BMW Welt), Am Olympiapark 1, 80809 München, Germany
(Dress is business casual, Conference Registered Participants, Photo ID required)

Tutorials

Conference Tutorials

Half-Day tutorials at introductory, intermediate, and advanced levels, covering the entire spectrum of the conference. Tutorial will be offered September 16-18, 2019 at the Universität der Bundeswehr München, Munich, Germany.

MONDAY, SEPTEMBER 16

15:30 -17:30	Room
Tutorial (T-1): Quantum Computing and Intelligence Analysis Leonhard Kunczik, Maximilian Moll, Germany	Audimax

WEDNESDAY, SEPTEMBER 18

16:00 -18:00	Room
Tutorial (T-2): Aviation Safety Management Gonzalo Barbeito, Son Pham, Germany	Audimax

Conference Tracks

Acronym	Track
IHSED 1	Human-Centered Design
IHSED 2	Innovative Materials for Product Development
IHSED 3	Systems Design and Human Diversity
IHSED 4	Safety Engineering and Systems Complexity
IHSED 5	Sports Design and Sports Medicine
IHSED 6	Biomechanics, Health Disease and Rehabilitation
IHSED 7	Human Cyber Physical Systems Interactions
IHSED 8	Business Analytics, Design and Technology

Conference at a Glance

	IHSED2019 Registration Desk	Registration desk open:
		Monday, September 16..............8:00 - 16:00
		Tuesday, September 17..............8:00 - 16:00
		Wednesday, September 18........8:00 - 14:00

Monday, September 16

#	Title	Room
	Time: 13:00 - 15:00	
	Opening: Prof. Dr. Oliver Rose - Dean Faculty for Computer Science Keynote Speaker: Major General Reinhard Wolski	Audimax
	Time: 15:30 - 17:30	
T-1	Tutorial (T-1): Quantum Computing and Intelligence Analysis Leonhard Kunczik, Maximilian Moll, Germany	Audimax
	Time: 18:30 - 22:30	
	Conference Reception Welcome Address Prof. Dr. Stefan Pickl	Bavarie by Käfer (BMW Welt)

Tuesday, September 17

#	Title	Room
	Session Time: 9:00 - 10:00	
	Semi-plenary Session	Audimax
	Session Time: 8:00 - 10:00	
1	IHSED 1: Human-centered Design I	Munich
2	IHSED 3: Systems Design and Human Diversity I	Berlin
3	IHSED 4: Safety Engineering and Systems Complexity I	Frankfurt
4	IHSED 5: Sports Design and Sports Medicine I	Hanover
5	IHSED 6: Biomechanics, Health Management and Rehabilitation I	Cologne
	10:00 - 10:30 • Coffee Break - Refreshments will be provided in Level 1	
	Session Time: 10:30 - 12:30	
6	IHSED 7: Human Cyber Physical Systems Interactions I	Munich
7	IHSED 8: Business Analytics, Design and Technology I	Berlin
8	IHSED 1: Human-centered Design II	Frankfurt
9	IHSED 3: Systems Design and Human Diversity II	Hanover
10	IHSED 4: Safety Engineering and Systems Complexity II	Cologne
	12:30 - 13:30 • Lunch Break	

Conference at a Glance

#	TITLE	ROOM
	Session Time: 13:30 -15:30	
11	IHSED 6: Biomechanics, Health Management and Rehabilitation II	Munich
12	IHSED 8: Business Analytics, Design and Technology II	Berlin
13	IHSED 1: Human-centered Design III	Frankfurt
15	IHSED 4: Safety Engineering and Systems Complexity III	Cologne
	15:30 - 16:00 • Coffee Break - Refreshments will be provided in Level 1	
	Session Time: 16:00 - 18:00	
18	IHSED 8: Business Analytics, Design and Technology III	Frankfurt
19	IHSED 1: Human-centered Design IV	Hanover
20	IHSED 4: Safety Engineering and Systems Complexity IV	Cologne
	16:00 • MAGIC EXCURSION - Munich Security Hub (Organized by COMTESSA)	

#	TITLE	ROOM
	Session Time: 8:00 - 10:00	
22	IHSED 8: Business Analytics, Design and Technology IV	Berlin
23	IHSED 1: Human-centered Design V	Frankfurt
24	IHSED 8: Business Analytics, Design and Technology V	Hanover
25	IHSED 1: Human-centered Design VI	Cologne
	10:00 - 10:30 • Coffee Break - Refreshments will be provided in Level 1	
	Session Time: 10:30 - 12:30	
26	IHSED 8: Business Analytics, Design and Technology VI	Munich
27	IHSED 1: Human-centered Design VII	Berlin
29	IHSED 1: Human-centered Design VIII	Hanover
	12:30 - 13:30 • Lunch Break	
	Session Time: 13:30 -15:30	
31	IHSED 1: Human-centered Design IX	Berlin
32	IHSED 1: Human-centered Design X	Frankfurt
33	IHSED 1: Human-centered Design XI	Hanover
	15:30 - 16:00 • Coffee Break - Refreshments will be provided in Level 1	
	Session Time: 16:00 -18:00	
T-2	Tutorial (T-2): Aviation Safety Management Gonzalo Barbeito, Son Pham, Germany	Audimax

Tuesday, September 17

	9:00 - 10:00 - Semi-Plenary Session - Room: Audimax
	Challenges in using methods of artificial intelligence in engineering design Prof. Kristin Paetzold, Germany

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IHSED 1: Human-centered Design I
Session Chair(s): Evangelos Markopoulos, UK and Cristian Rusu, Chile

8:00 - 10:00 - MUNICH

Comparison of different Assembly Assistance Systems under Ergonomic and Economic Aspects
    Sven Bendzioch, Dominic Bläsing, Sven Hinrichsen, Germany

Green ocean strategy: Democratizing business knowledge for sustainable growth.
    Evangelos Markopoulos, Ines Selma Kirane, Clarissa Piper, Hannu Vanharanta, United Kingdom

Identifying and classifying human-centered design methods for product development
    Gabriela Unruh, Osíris Canciglieri Junior, Brazil

Customer experience: A bridge between service science and human-computer interaction
    Virginica Rusu, Cristian Rusu, Federico Botella, Daniela Quiñones, Camila Bascur, Virginia Zaraza Rusu, Chile

Analysis of correlation between surface roughness of aluminum alloy and human psychological perception
    Wenqing Fu, Xiaozhou Zhou, Chengqi Xue, China

Forming customer eXperience professionals: A comparative study on students' perception
    Cristian Rusu, Virginica Rusu, Federico Botella, Daniela Quiñones, Camila Bascur, Bogdan Alexandru Urs, Ilie Urs, Ion Mierlus Mazilu, Dorian Gorgan, Stefan Oniga, Chile

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IHSED 3: Systems Design and Human Diversity I
Session Chair(s): Maria Goncalves, Portugal and Tsung-nan Wang, Taiwan

8:00 - 10:00 - BERLIN

Artificial intelligence and blockchain technology adaptation for human resources democratic ergonomization on team management.
    Evangelos Markopoulos, Ines Selma Kirane, Dea Balaj, Hannu Vanharanta, United Kingdom

Lean application: the design process and effectiveness
    Tsung-Nan Wang, Yu-Hsiu Hung, Taiwan

Topological properties of inequality and deprivation in an educational system: unveiling the key-drivers through complex network analysis
    Harvey Spencer Sanchez Restrepo, Jorge Louçã, Mexico

The anthropometry in service of the school furniture - case study applied to the Portuguese primary schools
    Maria Antónia Gonçalves, Marlene Brito, Portugal

Public opinion divergence based on multi-agent communication topology interconnection
    Hui Zhao, Lidong Wang, Xue-bo Chen, China

Systemic approach in the strategic planning of tourism in the cantonal capital of Bahía de Caráquez, Sucre, Ecuador
    Milton Zambrano, Jesús Hechavarría, Ecuador

Detailed Technical Program

3	**IHSED 4: Safety Engineering and Systems Complexity I** Session Chair(s): Juan Sepulveda, Chile and Maximilian Moll, Germany

8:00 - 10:00 - FRANKFURT	Maturity analysis of safety performance measurement
	    Aki Jääskeläinen, Sari Tappura, Julius Pirhonen, Finland
	A systemic approach for early warning in crisis prevention and management
	    Achim Kuwertz, Maximilian Moll, Jennifer Sander, Stefan Pickl, Germany
	A model-driven decision support system for aid in a natural disaster
	    Juan Sepúlveda, Jessica Bull, Chile
	Smart sensor technology and infrastructure safety
	    Mohamed Elhakeem, Thanos Papanicolaou, Walaa Gabr, United Arab Emirates
	Safety evaluation of steering wheel LCD screen based on ergonomic principles and FEA
	    Zhi Cheng, Wenyu Wu, Chengqi Xue, Hongxiang Shan, China
	Prevalence and risk factors associated with upper limb disorders and low back pain among informal workers of hand-operated rebar benders
	    Sunisa Chaiklieng, Thailand
	Pest analysis based on fuzzy decision maps for the ordering of risk factors in territorial planning of the Vinces Canton, Ecuador
	    Carlos Valero, Jesús Hechavarría, Ecuador

4	**IHSED 5: Sports Design and Sports Medicine I** Session Chair(s): Alessandro Silacci, Switzerland and Arzu Vuruskan, Turkey

8:00 - 10:00 - HANOVER	Designing an e-coach to tailor training plans for road cyclists
	    Alessandro Silacci, Omar Abou Khaled, Elena Mugellini, Maurizio Caon, Switzerland
	Half scale dress forms from 3D body scans in active poses
	    Arzu Vuruskan, Susan Ashdown, Turkey
	The impact of ergonomic design on smart garments
	    Rachel Boldt, Luisa M. Arruda, Yao Yu, Helder Carvalho, Miguel Carvalho, Fernando Batista Nunes Ferreira, Portugal
	A comparison of heart rate in normal physical activity vs. immersive virtual reality exergames
	    José Varela-Aldás, Esteban M. Fuentes, Guillermo Palacios-Navarro, Iván García-Magariño, Ecuador

5	**IHSED 6: Biomechanics, Health Management and Rehabilitation I** Session Chair(s): Frode Sandnes, Norway and Fausto Medola, Brazil

8:00 - 10:00 - COLOGNE	Satisfaction of aged users with mobility assistive devices: A preliminary study of conventional walkers
	    Josieli Boiani, Fausto Medola, Frode Sandnes, Luis Carlos Paschoarelli, Brazil
	Effect of added mass location on manual wheelchair propulsion forces
	    Vitor Alcolea, Fausto Medola, Guilherme Bertolaccini, Frode Sandnes, Brazil
	Exploration of TCM health service mode in the context of the aging society
	    Hongwei Zhou, Qi Xie, Ruifan Lin, Ninan Zhang, China
	Standardized research of clinical diagnosis and treatment data of epilepsy
	    Ninan Zhang, Xinyu Cao, Liangliang Liu, Bin Wang, Huaxin Shi, Ruifan Lin, Yufeng Guo, Wenxiang Meng, Hongwei Zhou, Qi Xie, China
	User centered design of a pill dispenser for the elderly
	    Florian Reichelt, Peter Schmid, Thomas Maier, Nada Sahlab, Nasser Jazdi-Motlagh, Michael Weyrich, Gerd Meyer-Philippi, Günther Kalka, Manfred Matschke, Germany
	Experience design: A tool to improve a child's experience in the use of vesical catheters
	    Natalia Santacruz-González, Mariana Uribe-Fernández, Gabriela Duran-Aguilar, Mexico

10:00 - 10:30 • Coffee Break - Refreshments will be provided in Level 1

Detailed Technical Program

6	**IHSED 7: Human Cyber Physical Systems Interactions I** Session Chair(s): Darko Etinger, Croatia and Amer Beharic, Slovenia

10:30 - 12:30 - MUNICH	Potential of industrial image processing in manual assembly
	    Alexander Nikolenko, Sven Hinrichsen, Germany
	Relationship between facebook fan page and trust of fans
	    Chia Hui Feng, Chia Hui Feng, Yu-Hsiu Hung, Chung-Jen Chen, Taiwan
	Automated decision modeling with DMN and BPMN: A model ensemble approach
	    Srđan Daniel Simić, Nikola Tanković, Darko Etinger, Croatia
	Effects of the use of smart glasses on eyesight
	    Amer Beharic, Natasa Vujica, Slovenia
	Visual representation strategy of flow line in flow maps visualization
	    Linzheng Shang, Chengqi Xue, Yun Linin, Jiang Shao, China

7	**IHSED 8: Business Analytics, Design and Technology I** Session Chair(s): Jenny Valery Stein, Germany and Evangelos Markopoulos , UK

10:30 - 12:30 - BERLIN	Enterprise capacity in the area of disability management
	    Aleksandra Polak-Sopinska, Poland
	Democratizing new product development through an industry-society entrepreneurial partnership
	    Evangelos Markopoulos, Emma Luisa Gann, Hannu Vanharanta, United Kingdom
	Development of a concept for the use of humanoid robot system: The example of a logistic support process at the Mercedes-Benz plant Duesseldorf
	    Tim Straßmann, Anna-Lena Wurm, Daniel Schilberg, Germany
	Production management model based on lean manufacturing focused on the human factor to improve productivity of small businesses in the metalworking sector
	    Jonathan Huaman, Jose Llontop, Carlos Raymundo, Francisco Dominguez, Peru
	Plant layout model for improving footwear process times in micro and small enterprises
	    Nataly Gutierrez, Wendy Jaimes, Fernando Sotelo, Carlos Raymundo, Francisco Dominguez, Peru
	Intelligent and innovative solutions in supply chains
	    Sylwia Konecka, Anna Maryniak, Poland

8	**IHSED 1: Human-centered Design II** Session Chair(s): Florian Reichelt, Germany and Philip Joisten, Germany

10:30 - 12:30 - FRANKFURT	Influence of the vehicle exterior design on the individual driving style
	    Florian Reichelt, Daniel Holder, Thomas Maier, Germany
	Displaying vehicle driving mode – effects on pedestrian behavior and perceived safety
	    Philip Joisten, Emanuel Alexandi, Robin Drews, Liane Klassen, Patrick Petersohn, Alexander Pick, Sarah Schwindt, Bettina Abendroth, Germany
	Providing peripheral trajectory information to avoid motion sickness during the in-car reading tasks
	    Yi-Ting Mu, Wei-Chi Chien, Fong Gong Wu, Taiwan
	Is virtual Ferrari as good as the real one? Children initial reactions to virtual reality experiences.
	    Zbigniew Bohdanowicz, Jarosław Kowalski, Katarzyna Abramczuk, Grzegorz Banerski, Daniel Cnotowski, Agata Kopacz, Paweł Kobyliński, Aldona Zdrodowska, Cezary Biele, Poland
	HUD layout adaptive method for fighter based on flight mission
	    Xiaoyue Tian, Yafeng Niu, Chengqi Xue, Yi Xie, Bingzheng Shi, Lingcun Qiu, Bo Li, China
	Digital human modelling, occupant packaging and autonomous vehicle interior
	    Sibashis Parida, Sylvester Abanteriba, Matthias Franz, Germany
	Interaction at the bottleneck – A traffic observation
	    Michael Rettenmaier, Camilo Requena Witzig, Klaus Bengler, Germany

Detailed Technical Program

9	**IHSED 3: Systems Design and Human Diversity II** Session Chair(s): Justin Brunelle, USA and Luisa Aruda, Portugal

10:30 - 12:30 - HANOVER

Exploring the intersections of web science and accessibility
> Trevor Bostic, Jeff Stanley, John Higgins, Daniel Chudnov,
> Rachael Bradley Montgomery, Justin Brunelle, United States

Somatic senses required for the emotional design of upper limb prosthesis
> Luisa M. Arruda, Helder Carvalho, Luís Fernando Sousa Ferreira Silva,
> Miguel Carvalho, Fernando Batista Nunes Ferreira, Brazil

Development of behavior profile of users with visual impairment
> Hugo Arias, Cesar Guevara, José Varela-Aldás, David Castillo, Carlos Borja,
> Richard Rivera, Jairo Vladimir Hidalgo Guijarro, Ecuador

Product information coding in the context of universal design
> Hongxiang Shan, China

Facilitating storytelling and preservation of mementos for the elderly through tangible interface
> Cun Li, Jun Hu, Bart Hengeveld, Caroline Hummels, Netherlands

Proposed Representation for Arabic Text Segmentation based on syntactic roles categorization
> Yasser Yahiaoui, Salah Boudjenane, Rafik Bendebiche, Algeria

Systemic approach to the territorial planning of the urban parish La Aurora, Daule, Ecuador
> Cyntia Alava, Jesús Hechavarría, Milagros Fois, Ecuador

10	**IHSED 4: Safety Engineering and Systems Complexity II** Session Chair(s): Jessica Bull, Chile and David Castillo, Ecuador

10:30 - 12:30 - COLOGNE

Digital human modelling in research and development – A state of the art review
> David Pal Boros, Karoly Hercegfi, Hungary

Detection and classification of facial features through the use of convolutional neural networks in Alzheimer patients
> David Castillo, Laura Lanzarini, Hector Gomez, Cesar Guevara,
> José Varela-Aldás, Carlos Borja, Hugo Arias, Washington Fierro-Saltos,
> Richard Rivera, Jairo Vladimir Hidalgo Guijarro,
> Marco Antonio Yandún Velasteguí, Ecuador

Considerations for the strategic design of the humanitarian supply chain: towards a reference model
> Jessica Bull, Juan Sepúlveda, Chile

The cost of ensuring the safety of technical systems and their service life
> Yulia Salnikova, Evgeny Kolbachev, Marina Perederiy, Russia

Healthy office by well building standard: Polish examples
> Anna Taczalska-Ryniak, Poland

Diffusing the myth around environmental sustainable development delivery in South Aafrican construction industry
> Olawale Babatunde Idebi, Timothy Laseinde, Ifetayo oluwafemi, South Africa

12:30 - 13:30 • Lunch Break

Detailed Technical Program

11	**IHSED 6: Biomechanics, Health Management and Rehabilitation II** Session Chair(s): Pedro Sobreiro, Portugal and Yu Ting Lin, Taiwan

13:30 -15:30 - MUNICH	Ergonomic design process of the shape of a diagnostic ultrasound probe
	    Ramona De Luca, Leonardo Forzoni, Fabrizio Spezia, Fabio Rezzonico,
	    Carlo Emilio Standoli, Giuseppe Andreoni, Italy
	Discussion on the effect of bedding on sleep postures
	    Lin Yu-Ting, Chien-Hsu Chen, Fong Gong Wu, Taiwan
	Design culture within the B2B needs roadmap
	    Leonardo Forzoni, Ramona De Luca, Maria Terraroli, Francesco Spelta,
	    Carlo Emilio Standoli, Italy
	Masticatory evaluation in non-contact measurement of chewing movement
	    Chika Sugimoto, Japan
	The importance of ICT and wearable devices in monitoring the health status of coronary patients
	    Pedro Sobreiro, Abílio Oliveira, Portugal
	Improvement of a monitoring system for preventing elderly fall down from a bed
	    Hironobu Satoh, Kyoko Shibata, Japan
	An assistive application for developing the functional vision and visuomotor skills of children with cortical visual impairment
	    Rabia Jafri, Saudi Arabia

12	**IHSED 8: Business Analytics, Design and Technology II** Session Chair(s): Carlos Raymundo, Peru and Evangelos Markopoulos , UK

13:30 -15:30 - BERLIN	Proposal for process standardization for continuous improvement in a Peruvian textile sector company
	    Miguel Arevalo, Jose Montenegro, Gino Viacava, Carlos Raymundo,
	    Francisco Dominguez, Peru
	Public sector transformation via democratic governmental entrepreneurship and intrapreneurship
	    Evangelos Markopoulos, Hannu Vanharanta, United Kingdom
	An order fulfillment model based on lean supply chain: Coffee's case study in Cusco, Peru
	    Jorginho Gomez, Gino Alburqueque, Edgar Ramos, Carlos Raymundo, Peru
	Strategic sourcing toward a sustainable organic coffee supply chain:
	A research applied in Cuzco
	    Elizabeth Carbajal, Jordy Rivera, Edgar Ramos, Carlos Raymundo, Peru
	Narrative perception in the exhibition space-Studying of multimedia technical device design
	    Ming Zhong, China

13	**IHSED 1: Human-centered Design III** Session Chair(s): Alexander Feierle, Germany and Stefanie Faas, Germany

13:30 -15:30 - FRANKFURT	Evaluation of display concepts for the instrument cluster in urban automated driving
	    Alexander Feierle, Fabian Bücherl, Tobias Hecht, Klaus Bengler, Germany
	Yielding light signal evaluation for self-driving vehicle and pedestrian interaction
	    Stefanie Faas, Martin Baumann, Germany
	Reclined posture for enabling autonomous driving
	    Dominique Bohrmann, Klaus Bengler, Germany
	Feasibility analysis and investigation of the user acceptance of a preventive information system to increase the road safety of cyclists
	    Oliver Michael Winzer, Andre Dietrich, Michael Tondera, Christoph Hera,
	    Peter Eliseenkov, Klaus Bengler, Germany
	Non-driving related activities in automated driving – an online survey investigating user needs
	    Tobias Hecht, Emilia Darlagiannis, Klaus Bengler, Germany
	Implicit communication of automated vehicles in urban scenarios: Effects of pitch and deceleration on pedestrian crossing behavior
	    Andre Dietrich, Philipp Maruhn, Lasse Schwarze, Klaus Bengler, Germany

Detailed Technical Program

15	**IHSED 4: Safety Engineering and Systems Complexity III** Session Chair(s): Alberto Vergnano, Italy and Johanna Pulkkinen, Finland

13:30 -15:30 - COLOGNE

Sensor matrix robustness for monitoring the interface pressure between car driver and seat
> Alberto Vergnano, Alberto Muscio, Francesco Leali, Italy

Development needs of the OSH-related risk management process:
A companies' viewpoint
> Noora Nenonen, Johanna Pulkkinen, Sanna Anttila, Jouni Kivistö-Rahnasto, Finland

Process operator students' abilities to assess OSH risks
> Noora Nenonen, Sanna Nenonen, Sari Tappura, Finland

A review of the risk perception of construction workers in construction safety
> Siu Shing Man, Jacky Yu Ki Ng, Alan Hoi Shou Chan, Hong Kong Sar China

RecogApp - Web and mobile application to recognition support
> André Esteves, João Jesus, Ângela Oliveira, Filipe Fidalgo, Portugal

Posture estimation for riding motorcycles using imus
> Yiming Yang, Takako Nonaka, Japan

15:30 - 16:00 • Coffee Break - Refreshments will be provided in Level 1

18	**IHSED 8: Business Analytics, Design and Technology III** Session Chair(s): Daniel Aderhold, Peru and Christian Balcazar, Peru

16:00 - 18:00 - FRANKFURT

Designing a procurement management model to reduce project delays in a hydraulic and automation systems company
> Melanie Vereau, Jose Rojas, Daniel Aderhold, Carlos Raymundo, Francisco Dominguez, Peru

On-demand warehousing model for open space event development services:
A case study in Lima, Peru
> Christian Balcazar, Christian Chavez, Gino Viacava, Edgar Ramos, Carlos Raymundo, Peru

Descriptive review of carbon footprint
> Ifetayo Oluwafemi, Omoniyi Durojaye, Timothy Laseinde, South Africa

Debunking limitations hindering continuing professional development imperatives in South African con-struction industry
> Olawale Babatunde Idebi, Timothy Laseinde, Ifetayo Oluwafemi, South Africa

S-FES: A Structure-driven modeling strategy for product innovation design
> Jin Lin, Wenyu Wu, Chengqi Xue, China

Perception of quality in higher education institutions: A logical view from the Literature
> Ifetayo Oluwafemi, Timothy Laseinde, South Africa

19	**IHSED 1: Human-centered Design IV** Session Chair(s): David Abreu, Spain and Ana Pelayo, Mexico

16:00 - 18:00 - HANOVER

Visually impaired interaction with the mobile enhanced travel aid eBAT
> David Abreu, Benito Codina, Jonay Toledo, Arminda Suárez, Spain

Improvement in the quality of life of patients with end-stage renal failure who live without replacement therapy in Mexico
> Ana Paula Pelayo, Montserrat Pelayo, Gabriela Duran-Aguilar, Mexico

Proposal of a dialogue system for elderly living alone based on psychological findings
> Hiroshi Yajima, Manabu Kurosawa, Japan

Fit and comfort perception on hearing aids: A pilot study
> Fang Fu, Yan Luximon, Hong Kong Sar China

Palletising support in intralogistics: The effect of a passive exoskeleton on workload and task difficulty considering handling and comfort
> Semhar Kinne, Veronika Kretschmer, Nicole Bednorz, Germany

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20	**IHSED 4: Safety Engineering and Systems Complexity IV** Session Chair(s): Beata Mrugalska, Poland and Sunisa Chaiklieng, Thailand
16:00 - 18:00 - COLOGNE	A systematic review of healthcare-associated infectious organisms in medical radiation science departments: Preliminary findings D'Arcy Picton-Barnes, Manikam Pillay, David Lyall, Australia Lean and ergonomics competencies: Knowledge and applications Beata Mrugalska, Poland Detection of student behavior profiles applying neural networks and decision trees Cesar Guevara, Sandra Sanchez Gordon, José Varela-Aldás, David Castillo-Salazar, Carlos Borja, Hugo Arias, Richard Rivera, Jairo Vladimir Hidalgo Guijarro, Marco Antonio Yandún Velasteguí, Ecuador Preprocessing information from a data network for the detection of user behavior patterns Jairo Vladimir Hidalgo Guijarro, Cesar Guevara, Marco Antonio Yandún Velasteguí, Dennys Andrés Bolaños Tobar, Carlos Borja, José Varela-Aldás, David Castillo, Hugo Arias, Washington Fierro Saltos, Richard Rivera, Ecuador Prediction of failure candidates of technical products in the field based on a multivariate usage profile regarding customer operating data Sebastian Sochacki, Germany
	16:00 • MAGIC EXCURSION - Munich Security Hub (Organized by COMTESSA)

22	**IHSED 8: Business Analytics, Design and Technology IV** Session Chair(s): Joel Heredia, Peru and Katia Lavado, Peru
8:00 - 10:00 - BERLIN	Results-based process management model applied to NGOs to promote sustainability and reliability in social projects Joel Heredia, Luis Quispe, Fernando Sotelo, Carlos Raymundo, Francisco Dominguez, Peru Telecommunications tower kits manufacturing model based on ikea's approach to minimize the return due to missing parts in a metalworking enterprise kit Katia Lavado, William Ramos, Edgardo Carvallo, Carlos Raymundo, Francisco Dominguez, Peru Model for improving post-sales processes applying lean thinking to reduce vehicle delivery times at an automotive company Osben Vizcarra, Fernando Sotelo, Carlos Raymundo, Francisco Dominguez, Peru An analysis of critical success factors affecting implementation of green supply chain management in Indian tube manufacturing industries Abhyuday Thakur, India Construction of a simple management method in production using a digital twin model Masahiro Shibuya, Japan The shopping centre - architectural characterization and evolution Helen Morais, Amílcar Gil Pires, Rui Barreiros Duarte, Portugal

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23	**IHSED 1: Human-centered Design V** Session Chair(s): Katherine Elizabeth Thiry, USA and Alan Taylor-Arthur, Mexico

8:00 - 10:00 - FRANKFURT

Designing federated architectures for multimodal interface design and human computer interaction in virtual environments
> Katherine Elizabeth Thiry, Arthur Wolloko, Caroline Kingsley, Adrian Flowers, Les Bird, Michael Jenkins, United States

Redesigning the common NICU incubator: an approach through the emulation of factors resembling the mother's womb.
> Alan Taylor Arthur Jimenez, Denisse Chavez-Maron, Ana Sofia Olivares Jiménez, Gabriela Duran-Aguilar, Alberto Rossa-Sierra, Mexico

Human factors engineering physical workspace dimensions
> Thuraiya Al Aamri, Oman

Human aspects in product and service development
> Gabriela Unruh, Osíris Canciglieri Junior, Thiago Augusto Aniceski Cezar, Kássia Renata Da Silva Zanão, Ana Maria Kaiser Cardoso, Roberta Ferrari De Sá, Brazil

Adequacy of game scenarios for an object with playware technology to promote emotion recognition in children with autism spectrum disorder
> Vinicius Silva, Filomena Soares, Joao Sena-Esteves, Ana Paula Pereira, Demétrio Matos, Portugal

24	**IHSED 8: Business Analytics, Design and Technology V** Session Chair(s): Evangelos Markopoulos , UK and Jiaxin Zhang, Hong Kong

8:00 - 10:00 - HANOVER

Agile start-up business planning and lean implementation management on democratic innovation and creativity.
> Evangelos Markopoulos, Onur Umar, Hannu Vanharanta, Finland

Privacy concerns in mobile payment: A diary study on users' perception of information disclosure
> Jiaxin Zhang, Yan Luximon, Hong Kong Sar China

Democratization of intrapreneurship and corporate entrepreneurship within the McKinsey's Three Horizons innovation space.
> Evangelos Markopoulos, Vasu Aggarwal, Hannu Vanharanta, United Kingdom

Research on enterprise monopoly based on Lotka-Volterra model
> Honghao liu, Jian He, Xue-bo Chen, China

The adoption of mHealth apps testing the UTAUT model with gamification impact
> Haseena Alkatheeri, United Arab Emirates

Quality management model focusing on good agricultural practices to increase productivity of pomegranate producing SMEs in Peru
> Mayra Cardenas, Mayra Rodriguez, Edgar Ramos, Edgardo Carvallo, Carlos Raymundo, Peru

25	**IHSED 1: Human-centered Design VI** Session Chair(s): Tanja Heuer, Germany and Adrian Couvent, France

8:00 - 10:00 - COLOGNE

From HCI to HRI- about users, acceptance and emotions
> Tanja Heuer, Jenny Stein, Germany

Human-robot cooperation: Link between acceptance and modes of cooperation chosen by operator with the robot
> Adrian Couvent, Christophe Debain, Nicolas Tricot, Fabien Coutarel, France

Mechanical design of a spatial mechanism for the robot head movements in social robotics for the evaluation of human-robot Interaction
> Jorge Alvarez Tello, Mireya Zapata Rodríguez, Dennys Paillacho, Ecuador

Are we ready for human-robot collaboration at work and in our everyday lives? - An exploratory approach
> Verena Wagner-Hartl, Katharina Gleichauf, Ramona Schmid, Germany

Control of an arm-hand prosthesis by mental commands and blinking
> José Varela-Aldás, David Castillo-Salazar, Carlos Borja, Cesar Guevara, Hugo Arias, Washington Fierro-Saltos, Richard Rivera, Jairo Vladimir Hidalgo Guijarro, Marco Antonio Yandún Velasteguí, Ecuador

	10:00 - 10:30 • Coffee Break - Refreshments will be provided in Level 1
26	**IHSED 8: Business Analytics, Design and Technology VI** Session Chair(s): Richard Rivera, Ecuador and Tihomir Dovramadjiev , Bulgaria

10:30 -12:30 - MUNICH

Twitter mining for multiclass classification events of traffic and pollution
> Veronica Chamorro, Richard Rivera, José Varela-Aldás, David Castillo, Carlos Borja, Cesar Guevara, Hugo Arias, Washington Fierro-Saltos, Jairo Vladimir Hidalgo Guijarro, Marco Antonio Yandún Velasteguí, Spain

Three dimensional visualization and interactive representation of carbon structures and compounds to illustrate learning content
> Tihomir Dovramadjiev, Bulgaria

Impressions of Japanese character Katakana strings
> Yuta Hiraide, Masashi Yamada, Japan

Self-cleaning smart city street lighting design research based on internet of things technology
> Jian Xu, Jianli Wang, China

Empirical assessment of cyber -physical systems influence on Industrial service sector: The manufacturing industry as a case study.
> Ifetayo Oluwafemi, Timothy Laseinde, Omoniyi Durojaye, South Africa

Useful total quality management critical success fundamentals in higher education institution
> Ifetayo oluwafemi, Timothy Laseinde, Omoniyi Durojaye, South Africa

Total quality management fundamentals and evolving outcomes in higher education institutions
> Ifetayo Oluwafemi, Timothy Laseinde, South Africa

27	**IHSED 1: Human-centered Design VII** Session Chair(s): Lulu Wu, China and Yitong Pei, China

10:30 -12:30 - BERLIN

Research on color, luminance and line width of HUD symbols
> Yitian Li, Haiyan Wang, Yafeng Niu, Yi Xie, Bingzheng Shi, Ruoyu Hu, China

Experimental study on color identifiable area threshold based on visual perception
> Yitong Pei, Haiyan Wang, Chengqi Xue, Xiaozhou Zhou, China

Symbolic similarity of traffic signals based on human visual perception
> Huang Yaping, Haiyan Wang, Chengqi Xue, Xiaozhou Zhou, China

The color design of driverless bus based on kansei engineering
> Wu Lulu, Yin Guodong, China

The VITO: Novel training kit to limit down the learning curve of the upper GI endoscopy operations
> Konstantinos Mammas, Adamantia S. Mamma, Greece

29	**IHSED 1: Human-centered Design VIII** Session Chair(s): Daniela Schmid, Germany and Nada Sahlab, Germany

10:30 -12:30 - HANOVER

Interaction design for the dissemination and sharing of knowledge
> Elisabetta Cianfanelli, Margherita Tufarelli, Italy

Development of an intelligent pill dispenser based on an IoT-approach
> Nada Sahlab, Nasser Jazdi-Motlagh, Michael Weyrich, Peter Schmid, Florian Reichelt, Thomas Maier, Gerd Meyer-Philippi, Günther Kalka, Manfred Matschke, Germany

Types of mimetics for the design of intelligent technologies
> Antero Karvonen, Pertti Saariluoma, Tuomo Kujala, Finland

Design process: The importance of its implementation
> Leticia Castillo, David Cortés, Cesar Omar Balderrama, Mexico

Autonomous learning mediated by digital technology processes in higher education: a systematic review
> Washington Fierro, Cecilia Sanz, Alejandra Zangara, Cesar Guevara, Hugo Arias, David Castillo, José Varela-Aldás, Carlos Borja, Richard Rivera, Jairo Vladimir Hidalgo Guijarro, Marco Antonio Yandún Velasteguí, Ecuador

An airliner's possible future single-pilot operations: Applying systems thinking methods at early design stages
> Daniela Schmid, Germany

12:30 - 13:30 • Lunch Break

Detailed Technical Program

31	**IHSED 1: Human-centered Design IX** Session Chair(s): Anne Wallisch, Germany and Cindy Mayas, Germany

13:30 -15:30 - BERLIN

Implications of mobility service diaries on adaptive mobility platforms
  Cindy Mayas, Germany
Walkability in the modern arab cities: An assessment of public space along Al-Qasba Canal and Lake Khaled in Sharjah
  Mohamed Elhakeem, Mohamed El Amrousi, United Arab Emirates
Kaleidoscope of user involvement – product development methods in an interdisciplinary context
  Anne Wallisch, Olga Sankowski, Dieter Krause, Kristin Paetzold, Germany
A deep learning application for detecting facade tile degradation
  Po-Hsiang Shih, Kuang-Hui Chi, Taiwan
Strategies for accessibility in the Teodoro Maldonado Hospital in Guayaquil: A design proposal focused on the human being
  Josefina Avila, Milagros Fois, Jesús Hechavarría, Ecuador
Proposal of vernacular architectural design for the decision making of a low-income dwelling design for the urban parishes of Babahoyo Canton, Ecuador
  Bryan Colorado, Julio Franco, Jesús Hechavarría, Ecuador
Model for the urban consolidation of informal human settlements based on systems of cooperation and human participation in Guayaquil, Ecuador
  Milagros Fois, Karen Sellan, Karla Moscoso, Isabella Castro, Ecuador

32	**IHSED 1: Human-centered Design X** Session Chair(s): Dara Gruber, USA and Carlos Marcelo Borja, Ecuador

13:30 -15:30 - FRANKFURT

Why should i trust your opinion? Understanding online reviewer credibility for user generated content
  Dara Gruber, Alastair Tse, Miwa Namba, United States
Editorial design based on user experience design
  Carlos Borja, Cesar Guevara, José Varela-Aldás, David Castillo, Hugo Arias, Washington Fierro-Saltos, Richard Rivera, Jairo Vladimir Hidalgo Guijarro, Marco Antonio Yandún Velasteguí, Ecuador
A cloud based augmented reality framework - enabling user-centered interactive systems development
  Anas Abdelrazeq, Christian Kohlschein, Frank Hees, Germany
Understanding the influence of cognitive biases in production planning and control
  Melanie Zahner, Germany
Priority order of single gaze gestures in eye control system
  Yating Zhang, Yafeng Niu, Chengqi Xue, Yi Xie, Bingzheng Shi, Bo Li, Lingcun Qiu, China
The influence of the threshold of the size of the graphic element on the general dynamic gesture behavior
  Hao Ming, Xiaozhou Zhou, Chengqi Xue, China

33	**IHSED 1: Human-centered Design XI** Session Chair(s): Krystallia Savvaki, Greece and Dariusz Mikulowski, Poland

13:30 -15:30 - HANOVER

Complete block-level visual debugger for blockly
  Anthony Savidis, Crystalia Savaki, Greece
An approach of supporting access to educational graphic of the blind students using sound and speech
  Dariusz Mikulowski, Andrzej Salamonczyk, Poland
Blueprint for a priming study to identify customer needs in social media reviews
  Kristof Briele, Alexander Krause, Max Ellerich, Robert H. Schmitt, Germany
Redesign of a questionnaire to assess the usability of websites
  Freddy Paz, Toni Granollers, Peru
Edge detection method for the graphic user interface of complex information system
  Song Yukun, Chengqi Xue, Wang Xinyue, Zhang Peiqi, China
Inclusive design for recycling facilities: Public participation equity for the visually impaired
  Kin Wai Michael Siu, Chi Hang Lo, Yi Lin Wong, Hong Kong Sar China

15:30 - 16:00 • Coffee Break - Refreshments will be provided in Level 1

Tutorial (T-2): Aviation safety management 16:00 -18:00   Room: Audimax
  Gonzalo Barbeito, Son Pham, Germany

Interactive Poster Demonstrations

Posters will be displayed Tuesday, September 17, 2019 and Wednesday, September 18, 2019. Posters must be removed by the end of each day/session they are scheduled to be demonstrated. Posters can be positioned starting on Tuesday, September 17, 10:00 a.m. and removed by the last poster session on Wednesday, September 18, after 16:30. Poster demonstration sessions will be at the times shown below.

TUESDAY, SEPTEMBER 17
Poster Demonstration: 10:00 - 12:30
Room: Level 1

A1. Risk Avoidance through Reliable Attention Management at Control Room Workstations
   Rico Ganßauge, Annette Hoppe, Anna-Sophia Henke, Norman Ressut, Germany
A2. Bluetooth tracking approach for user assistance based in sequential patterns analysis.
   Aitor Arribas Velasco, John McGrory, Damon Berry, Ireland
A3. Study on the effect of electronic map color scheme on operation performance
   Bei zhang, Tuoyang zhou, YingWei Zhou, China
A4. Configuration and Use of Pervasive Augmented Reality Interfaces in a Smart Home Context: a prototype
   Bernardo Marques, Paulo Dias, João Alves, Emanuel Fonseca, Beatriz Sousa Santos, Portugal
A5. How Should an Automated Vehicle Communicate Its Intention to a Pedestrian? – A Virtual Reality Study
   Tanja Fuest, Anna Sophia Maier, Hanna Bellem, Klaus Bengler, Germany
A6. The Effects of Switching Posture and Task Discretion on Performance and Subjective Fatigue
   Nozomi Sato, Kazuki Shigematsu, Japan

TUESDAY, SEPTEMBER 17
Poster Demonstration: 14:00 - 17:00
Room: Level 1

B1. Secure Visualization when using Mobile Applications for Dementia Scenarios
   Joana Muchagata, Pedro Vieira-Marques, Soraia Teles, Diogo Abrantes, Ana Ferreira, Portugal
B2. A Study on the Improvement Procedure for Navigation Equipment
   JunHyuk Jang, Younghoon Yang, Jin Hyoung Park, South Korea
B3. Rapid design elicitation and iteration using Q-methodology
   Eric Vorm, United States
B4. Prediction of indirect costs in the construction industry
   Lina Satizabal, Estefany Rey-Becerra, Maria Alejandra Arcila, Sofia Torres, Nathalia Moreno, Kathleen Salazar, Colombia
B5. Green Light Optimum Speed Advisory (GLOSA) System with Signal Timing Variations – Traffic Simulator Study –
   Hironori Suzuki, Yoshitaka Marumo, Japan
B6. ErgoSMED: a methodology to reduce setup times and improve ergonomic conditions
   Marlene Brito, Maria Antónia Gonçalves, Portugal

WEDNESDAY, SEPTEMBER 18
Poster Demonstration: 10:00 - 12:30
Room: Level 1

C1. Quantitative nondestructive assessment of Paenibacillus larvae in Apis mellifera (European Honeybee) hives
      David Lyall, Phil Hansbro, Jay Horvat, Peter Stanwell, Australia

C2. Structural Analysis of Spinal Column to Estimate Intervertebral Disk Load for a Mobile Posture Improvement Support System
      Kyoko Shibata, Yu Suzuki, Hironobu Satoh, Yoshio Inoue, Japan

C3. Distributed Data and Information Management for Crisis Forecasting and Management
      Barbara Essendorfer, Jennifer Sander, Marian Sorin Nistor, Almuth Hoffmann, Stefan Pickl, Germany

C4. Study on the interactive mode of eye control mode in human-computer interface
      YingWei Zhou, Ning Li, Bei zhang, Tuoyang zhou, KailLi Yin, Jinshou Shi, China

C5. Study on eye movement behavior of interface complexity
      KailLi Yin, YingWei Zhou, Ning Li, ZiAng Chen, Jinshou Shi, China

WEDNESDAY, SEPTEMBER 18
Poster Demonstration: 14:00 - 17:00
Room: Level 1

D1. Adaptive Augmented Reality User Interfaces using Face Recognition for Smart Home Control
      Bernardo Marques, Paulo Dias, João Alves, Beatriz Sousa Santos, Portugal

D2. Simulating Social Cycling Experience in Design Research
      Nan Yang, Gerbrand van Hout, Loe Feijs, Wei Chen, Jun Hu, Netherlands

D3. A Study on the Development of Korea e-Navigation based The Pilot and Tug Support Service
      Younghoon Yang, Jin Hyoung Park, JunHyuk Jang, South Korea

D4. Psychological Interpretation of Human Behavior to the Atypical Architectural Shape
      Young Lim Lee, Yun Gil Lee, South Korea

Conference
Administration

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Notes

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