



# 2025

# **IHIET**

## **International**

**13<sup>th</sup> International Conference on**

**Human Interaction &**

**Emerging Technologies:**

**Artificial Intelligence &**

**Future Applications**

**(IHIET-AI 2025)**

**April 22-24, 2025**

**Universidad de Málaga**  
**Malaga, Spain**

# **Final Program**

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# IHIET-AI 2025

## Conference Reception

**TUESDAY APRIL 22, 2025 - 19:00-22:00**

**RECEPTION LOCATION: GRAN HOTEL MIRAMAR IN MALAGA**  
**P.º REDING, 22, 24, MÁLAGA-ESTE, 29016 MÁLAGA, SPAIN**  
(Dress is business casual, Conference Registered Participants, Photo ID required)

## Conference Organization

### **Honorary Conference Chairs:**

Antonio Lopez Arquillos, UMA, Spain  
Juan M. Gandarias, UMS, Spain

### **Scientific and Technical Session: April 23-24, 2025**

Location: Universidad de Málaga

Address: Arquitecto Francisco Peñalosa, 6, Campanillas, 29071  
Málaga, Spain

### **CONFERENCE ADMINISTRATOR:**

ADMIN@IHIET-AI.ORG

### **CONFERENCE SUPPORT:**

SUPPORT@IHIET.ORG

## Scientific Tracks

IHIET 1	Human-centered Design
IHIET 2	Artificial Intelligence, Computing and Intelligent Design
IHIET 3	Augmented, Virtual and Mixed Reality Simulation
IHIET 4	Wearable Technologies, Social and Affective Computing
IHIET 5	Human–computer Interaction
IHIET 6	Human-Technology and Future of Work
IHIET 7	Emerging Technologies and Business Applications
IHIET 8	Applications in Medicine and Healthcare
IHIET 9	Management, Training and Business Applications



# Conference at a Glance

**Scientific and Technical Session:** April 23-24, 2025

Location: **Universidad de Málaga**

Address: Arquitecto Francisco Peñalosa, 6, Campanillas, 29071  
Málaga, Spain



## Wednesday - Thursday, April 23-24, 2025

#	SESSION TITLE	ROOM	TRACK
<b>Day 1: Wednesday, April 23 - Session Time: 9:00 - 10:00 CEST</b>			
	Opening Session: Physically Interactive Robots: From Collaborative Robots to the New Era of Robotics	Barcelona	All
<b>10:00 - 10:30 • Sessions Break</b>			
<b>Day 1: Wednesday, April 23 - Session Time: 10:30 - 12:00 CET</b>			
1	Human-centered Design	Barcelona	IHIET 1
2	Artificial Intelligence, Computing and Intelligent Design I	Valencia	IHIET 2
3	Wearable Technologies, Social and Affective Computing	Madrid	IHIET 4
<b>12:00 - 12:30 • Sessions Break</b>			
<b>Day 1: Wednesday, April 23 - Session Time: 12:30 - 14:00 CET</b>			
4	Human-computer Interaction Technology Applications	Barcelona	IHIET 5
5	Human-Technology and Future of Work	Valencia	IHIET 6
6	Emerging Technologies and Business Applications	Madrid	IHIET 7
<b>End of Day 1 Sessions</b>			
<b>Day 2: Thursday, April 24, 2025 - Session Time: 9:00 - 10:00 CET</b>			
7	Plenary: Emerging Technologies - The Evolution of AI in Satellite Communication Systems	Barcelona	All
<b>10:00 - 10:30 • Sessions Break</b>			
<b>Day 2: Thursday, April 24, 2025- Session Time: 10:30 - 12:00 CET</b>			
8	Applications in Medicine and Healthcare I	Barcelona	IHIET 8
9	Management, Training and Business Applications	Valencia	IHIET 9
10	Artificial Intelligence, Computing and Intelligent Design II	Madrid	IHIET 2
<b>12:00 - 12:30 • Sessions Break</b>			
<b>Day 2: Thursday, April 24, 2025 - Session Time: 12:30 - 14:00 CET</b>			
11	Applications in Medicine and Healthcare II	Barcelona	IHIET 8
12	Artificial Intelligence, Computing and Intelligent Design III	Valencia	IHIET 2
<b>End of Day 2 Sessions</b>			



# Detailed Program

## DAY 1

**SESSION**      **Opening Session**  
**Room: Barcelona**

**Wednesday, April 23    9:00 - 10:00 CET**

**Plenary Speech:** Physically Interactive Robots: From Collaborative Robots to the New Era of Robotics

**Speaker:** Dr. Juan M. Gandarias, University of Malaga, Spain

**Plenary Summary:** This talk explores the evolution of robotics from collaborative robots (cobots), designed to safely share workspaces with humans, to the next generation of robots with enhanced physical interaction capabilities. The talk highlights groundbreaking research and key innovations driving this transformation, including soft robotics, advanced haptic perception, and AI-driven decision-making. These advancements pave the way for a new era where robots become more responsive, adaptive, and versatile, fostering seamless partnerships with humans. Future developments will lead to a paradigm shift in which robots move beyond merely ensuring safe physical contact to actively leveraging these interactions to expand their capabilities. The talk concludes with a vision for the future, exploring the transformative potential of physically interactive robots in reshaping how humans and robots will coexist to improve the quality of life.



**Speaker Bio:** Juan M. Gandarias, PhD is an Assistant Professor in the Systems Engineering and Automation Department at the University of Malaga, Spain, where he conducts his research at the Institute of Mechatronic Engineering and Cyber-Physical Systems (IMECH). He has authored 40 publications in scientific journals and flagship conferences in the fields of robotics, automation, and artificial intelligence. In 2024, he was a finalist for the best paper award in Human-Robot Interaction at the ICRA 2024 conference, and in mobile manipulation at the IROS 2022 conference. He also participated as a senior researcher in the SOPHIA project, framed within the Horizon 2020 initiative of the European Union. He collaborates as a scientific advisor in the Real-Move start-up project, awarded with Proof-of-Concept funding from the ERC and winner of the SmartCup Liguria Award (industrial category).



**Wednesday, April 23, 2025**  
**10:30 - 12:00 Technical Sessions**

DAY 1	Track	Room
SESSION 1	Human-centered Design	IHIET 1 Barcelona
Wednesday, April 23	Session Chair(s): Sarah Rudder, United States and Robert Marohn, United States	
10:30 - 12:00 CET	Optimizing Resource Allocation and Traceability in Human-Centered Design (HCD) Sarah Rudder, United States	
	Navigating Shared Space: A Preliminary Field Study Analyzing Pedestrian Path Modifications in Response to Autonomous Sidewalk Robots Robert Marohn, United States	
	Child-Friendly Human-AI Interaction: Designing Tangible User Interfaces for Preschool Children to Prompt Generative AI Sedef Süner Pla Cerda, Batuhan Şahin, Ecem Kumbasar, Turkey	
	Privacy Concerns in Recommender Systems for Personalized Learning at the Workplace: The Mediating Role of Perceived Trustworthiness Marina Klostermann, Lina Kluy, Germany	
	Human Interactions with Holocaust Survivor AIs: Current and Future Applications of Visitors' Interactions with Holocaust Survivor "Holograms" Cayo Gamber, United States	
	Integrating Artificial Intelligence into the Human-Centered Design Process: Enhancing Creativity and User-Centricity in Architectural Education Juan Carlos Dall'asta, China	
DAY 1	IHIET 2	Valencia
SESSION 2	Artificial Intelligence, Computing and Intelligent Design I	
Wednesday, April 23	Session Chair(s): Andreas Stöckl, Austria and Joshua Gehlen, Germany	
10:30 - 12:00 CET	Cultural Differences in Perception and Engagement of AI-generated Online Ads Andreas Stöckl, Daniel Diaz, Austria	

AI-Powered Auditory Control and Augmented Reality Interfaces for UAVs - A Contactless Control and Situation Awareness Concept

Joshua Gehlen, Alina Schmitz-hübsch, Sebastian Handke, Wolfgang Koch, Germany

Construal Level Theory (CLT) for designing operational explainability for Human-AI Teaming interfaces in aviation contexts

Roberto Venditti, Narek Minaskan, Evmorfia Biliri, Miguel Villegas, Barry Kirwan, Carl Westin, Jekaterina Basjuka, Simone Pozzi, Italy

Security in Information Systems with Artificial Intelligence: Development of AI - based threat detection systems to protect information integrity

Nelson Salgado Reyes, Ecuador

Enhancing Android Security Through Artificial Intelligence: A Hyperparameter-Tuned Deep Learning Approach for Robust Software Vulnerability Detection

Mohammed Assiri, Saudi Arabia

Technology Innovation of Artificial Intelligence in Building Sector: Present Status and Challenges

Lingyue Li, China

**DAY 1**

**IHIET 4**

**Madrid**

**SESSION 3**

**Wearable Technologies, Social and Affective Computing**

**Wednesday,  
April 23**

Session Chair(s): Sergio Staab, United States and Claudio Loconsole, Italy

**10:30 - 12:00  
CET**

Comparison of Two Smartwatch-Based Approaches for Real-Time Activity Classification in the Care Context

Sergio Staab, Nadia Günter, Ludger Martin, Johannes Luderschmidt, Germany

Algorithmic Journalism and Ideological Polarization: An Experimental Work Around ChatGPT and the Production of Politically Oriented Information

Claudio Loconsole, Massimiliano Panarari, Italy

Design of a programming workshop to update gender bias in engineering among adults

Reika Abe, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Japan

Hospital Kitchen Ergonomics: Analysis of Manual Operations in a Hospital Kitchen Using Jack Software

Lawrence Al-Fandi, Kawther Jamal, Fatma Jamal, Ruqaya Safar, Ghadeer Al-Neama, Fatma Al-Sarraf, Jordan

**12:00 - 12:30 • Sessions Break**



**Wednesday, April 23, 2025**  
**12:30 - 14:00 Technical Sessions**

<b>DAY 1</b>		<b>IHIET 5</b>	<b>Barcelona</b>
<b>SESSION 4</b>	<b>Human-computer Interaction Technology Applications</b>		
<b>Wednesday, April 23</b>	Session Chair(s): Caterina Battaglia, Italy and Jussi Okkonen, Finland		
<b>12:30 - 14:00 CET</b>	<p>Bridging the gap: workshop results on the interaction between human creativity and artificial intelligence  Isabella Nevoso, Elena Polleri, Caterina Battaglia, Italy</p>		
	<p>The Impact of Human Implication for AI-Supported Decisions over Perception of Trust, Agency and Dignity  Camille Zinopoulos, Adam Fahmi, Sophie Boudreault, Alexandre Marois, Canada</p>		
	<p>Interplay of capability and personality when cooperating with autonomy  Jussi Okkonen, Mia Laine, Christian Andersson, Finland</p>		
	<p>Casualty evacuation process comparison of single patient evacuation with unmanned ground vehicles to multiple carrier evacuation from conflict zones  Mia Laine, Jussi Okkonen, Svante Laine, Christian Andersson, Finland</p>		
	<p>Defining autonomous functionalities of narrow artificial intelligences for a defensive unmanned ground vehicle to enhance human-UGV teaming performance for defending forces  Christian Andersson, Mia Laine, Jussi Okkonen, Finland</p>		
	<p>Dark and green nudges in online shopping: case examples and legal challenges  Sonja Anna Mangold , Germany</p>		
<b>DAY 1</b>		<b>IHIET 6</b>	<b>Valencia</b>
<b>SESSION 5</b>	<b>Human-Technology and Future of Work</b>		
<b>Wednesday, April 23</b>	Session Chair(s): Dimitrios Ziakkas, United States and Silvia Albano, China		
<b>12:30 - 14:00 CET</b>	<p>The Role of Artificial Intelligence (AI) &amp; Future Applications in the Implementation of Aviation Fatigue Risk Management System  Dimitrios Ziakkas, Debra Henneberry, United States</p>		
	<p>Diversity of Perception in Human-AI Collaboration  Mohamed Quafafou, France</p>		



Integrating Generative AI in Design Education: A Structured Approach to Client-Centered Interior Design Visualization  
Silvia Albano, Gianmarco Longo, China

Impact of Generative AI on the Acquisition of Competencies in Educational Institutions of the Vienna Chamber of Commerce and Industry: GenAI in Future Education  
Patrick Rupperecht, Isabel Rodenas, Tilia Stingl De Vasconcelos Guedes, Austria

Traditional vs. Personalised Teaching: An experimental study on AI's role in education  
Ana Marques, Maria Inês Pires, Jo Dias, Portugal

**DAY 1**

**IHIET 7**

**Madrid**

**SESSION 6**

**Emerging Technologies and Business Applications**

**Wednesday,  
April 23**

Session Chair(s): Massilva Dekkal, Canada and Erik Schönwälder, Germany

**12:30 - 14:00  
CET**

Behind the AI-Scenes: How FinTech Professionals Navigate Regulations and Privacy Concerns to Enhance User Experience  
Massilva Dekkal, Sandrine Prom Tep, Manon Arcand, Maya Cachecho, Canada

Using compact Retrieval-Augmented Generation for knowledge preservation in SMBs  
Erik Schönwälder, Martin Hahmann, Gritt Ott, Germany

On the Lack of Phishing Misuse Prevention in Public Artificial Intelligence Tools  
Alvaro Winkels, Marko Schuba, Tim Höner, Sacha Hack, Georg Neugebauer, Germany

Another AI - Analog Intelligence  
Shuichi Fukuda, Japan

Cost-Effectiveness of the "Digital Air Traffic Controller"  
Martin Jung, Germany

Human Resource Information System and Operational Efficiency among the Professional ICT Providers in Nigeria.  
Kabiru Genty, Namibia

*End of Day 1 Sessions*

**NOTES:**





## Thursday, April 24, 2025 Technical Sessions

DAY 2	Track	Room
SESSION 7	All	Barcelona
<b>Thursday, April 24</b>  <b>9:00 - 10:00 CET</b>	<b>Plenary II: Emerging Technologies - The Evolution of AI in Satellite Communication Systems</b> <b>Speaker:</b> Tomas Navarro, European Space Agency, UK  <b>Plenary Summary:</b> The coming years will see a heightened focus on furthering the development of Artificial Intelligence for satellite communications. Not only because improved communication and data transmission will be vital for the implementation of the future higher-efficiency satcom networks, but because new satcom systems will need to be designed, operated and maintained in a complete different way to cope with the demands of future seamless, ubiquitous and integrated satellite-terrestrial communications. Additionally, as AI technology advances, the future satcom systems are bound to inevitably evolve into more autonomous, reliable, and more efficient systems. This speech will discuss specific trends in Artificial Intelligence that are to be explored in the upcoming years for enhancing or enabling new SatCom applications. More specifically the presentation will focus on bio-inspired Machine Learning algorithms, Deep learning-assisted Generative Design, advanced Reinforcement Learning algorithms and on-board Continual Learning. The presentation will finally give a broader view on the potential benefits of using these emerging AI technologies for a selected number of SatCom applications.  <b>10:00 - 10:30 • Sessions Break</b>	
DAY 2	IHIET 8	Barcelona
SESSION 8	<b>Applications in Medicine and Healthcare I</b>	
<b>Thursday, April 24</b>  <b>10:30 - 12:00 CET</b>	<b>Session Chair(s):</b> Miguel De Andrés Herrero, Spain and Mateus Toledo Gomes, Brazil  <b>Design of a video game adapted to the study of motivation in young people with emotional disorders</b> Miguel De Andrés Herrero, Victoria Lopez, Matilde Santos, Diego Urgelés, Manuel Faraco Favieres, Spain  <b>AI-Generated Clinical Case Studies In Physiotherapy: Enhancing Education Through Integrated Artificial Intelligence</b> Manuela Couto De Azevedo, Mateus Toledo Gomes, Cassiano Portela Da Fonseca, Letícia Lima Pires, Christiano Bittencourt Machado, Brazil	

Image-based mandrel detection during stent production in an industrial environment

Yuna Haas, Eric Sax, Germany

Digital Health at IBV: How clinical and biomedical knowledge merge to tackle problems in the healthcare field through the use of technology

Cristina Herrera Ligerio, Adrian Morales-Casas, Ainhoa Rodríguez- De Luis, Alejandra Gómez- De Cádiz, Ana De La Torre- García, Arturo Gómez - Pellín, Marc Escrig - Villalonga, Úrsula Martínez - Iranzo, Spain

Mixed Reality as a tool for enhancing precision in surgery planning

Alejandra Gomez De Cadiz, Ainhoa Rodríguez- De Luis, Iván Martín González, María Carmen Juan Lizandra, Cristina Herrera Ligerio, Spain

**DAY 2**

**IHIET 9**

**Valencia**

**SESSION 9**

**Management, Training and Business Applications**

**Thursday,  
April 24**

Session Chair(s): Marko Schuba, Germany and Dimitrios Ziakkas, United States

**10:30 - 12:00  
CET**

The role of Artificial Intelligence (AI) applications in Aviation Risk Management

Debra Henneberry, Dimitrios Ziakkas, United States

AI Support for Establishing and Operating an Information Security Management System (ISMS)

Florian Großimlinghaus, Marko Schuba, Tim Höner, Sacha Hack, Georg Neugebauer, Germany

The Digital Trust Radar – A structured collection and analysis of global AI guidelines

Janine Jäger, Jona Karg, Petra Maria Asprion, Ilya Misyura, Switzerland

GoodMaps Indoor Navigation: Leveraging Computer Vision to Foster Indoor Navigation

Jennifer Palilonis, Charlie Meredith, United States

Wi-Fi Signal Analysis via Smartphones for Estimating Passenger Counts

Mohammed Alatiyyah, Saudi Arabia

Evaluating Training Acceleration through Selective Workload Skipping: Methods and Benchmarks

Kareem Ibrahim, Milos Nikolic, Nicholas Giamblanco, Ali Hadi Zadeh, Enrique Torres Sanchez, Andreas Moshovos, Canada

DAY 2		IHIET 2	Madrid
SESSION 10		Artificial Intelligence, Computing and Intelligent Design II	
Thursday, April 24		Session Chair(s): Nelson Bances Purizaca , Germany and Thimo Florian Schindler, Germany	
10:30 - 12:00 CET		Deploying a Transformer-based Model in Microservices Architecture: An Approach for Real-Time Body Pose Classification Enrique Bances P, Vedant Dalvi, Urs Schneider, Thomas Bauernhansl, Germany	
		Effects of uncertain knowledge in water level prediction using an LSTM Neural Network Thimo Florian Schindler, Germany	
		CRNSim: A New Similarity Index Capturing Global and Local Spectral Differences in Hyperspectral Data Jungkwon Kim, Sangmin Kim, Jungi Lee, Kwangsun Yoo, Seokjoo Byun, South Korea	
12:00 - 12:30 • Sessions Break			
		Thursday, April 24, 2025 12:30 - 14:00 Technical Sessions	
DAY 2		IHIET 8	Barcelona
SESSION 11		Applications in Medicine and Healthcare II	
Thursday, April 24		Session Chair(s): Mehmet Erçin Okursoy , Turkey and Alejandra Gomez De Cadiz, Spain	
12:30 - 14:00 CET		Specific conditions of home use medical devices: A study on CPAP devices Mehmet Erçin Okursoy, Naz Börekçi, Turkey	
		Connecting Image and Reality: The Role of 3D Printing in Surgical Planning Alejandra Gomez De Cadiz, Adrian Morales-casas, Claudia Marissa Aguirre Ramón, Ignacio Espíritu-garcía-molina, Cristina Herrera Ligeró, Spain	
		Exploring the Nexus Between Physical and Mental Health: Assessing Stress Through Heart Rate Variability Ana De La Torre García, Úrsula Martínez - Iranzo, Gema Prats Boluda, Miguel Ángel Serrano Rosa, José Luis Martínez De Juan, Cristina Herrera Ligeró, Spain	

Bidirectional Long Short-Term Memory (Bi-LSTM) with Convolutional Neural Networks (cNN) Based Obstructive Sleep Apnea Detection Using ECG Signals  
Yinxian He, Amy M Kwon, Kyungtae Kang, South Korea

Advances in Pulse Rate Variability (PRV) Monitoring with rPPG: Insights from Unsupervised Methods  
Marc Escrig Villalonga, Úrsula Martínez - Iranzo, Cristina Herrera Ligeró, Alberto Albiol Colomer, Ana De La Torre - García, Spain

Certificates and the security of digital health information  
Christoph Jungbauer, Christian Luidold, Austria

**DAY 2**

**IHIET 2**

**Valencia**

**SESSION 12**      **Artificial Intelligence, Computing and Intelligent Design III**

**Thursday, April 24**      Session Chair(s): Peter Van Eck, Netherlands and Cecilia Delgado Solorzano, United States

**12:30 - 14:00 CET**      Securing Generative AI in Healthcare: Challenges, Risks, and Recommendations for Cybersecurity  
Rick Van Der Kleij, Peter Van Eck, Netherlands

Can We Trust Them? Examining the Ethical Consistency of Large Language Models to Perturbations  
Manuel Delaflor Rodriguez, Cecilia Delgado Solorzano, Carlos Toxtli, United States

An AI-driven Ukrainian History web platform  
Valentyna Kolomiets, Pedro Oliveira, Paulo Matos, Portugal

Generating Realistic Traffic Scenarios: A Deep Learning Approach Using Generative Adversarial Networks (GANs)  
Md Shadab Alam, Marieke Martens, Pavlo Bazilinskyy, Netherlands

*End of Day 2 Sessions*

**NOTES:**



# Poster Demonstrations

## SESSION A

### Poster Demonstration Session

Wednesday-Thursday, April 23-24 [10:30 - 13:00]

**A-1**

Managing anticholinergic polypharmacy in older adults with intellectual disabilities and epilepsy

Hossein Ahmadi, Lance Watkins, United Kingdom

**A-2**

Automation of Phonological Skills Assessment with Machine Learning

Pawan Lingras, Kanngi Mahajan, Nghia Phan, Melinda Cameron, Canada

**A-3**

Leveraging Collaborative Filtering and Content-Based Analysis for Predicting Social Media Users Vulnerability to Cyber-Attacks

Kiran Kumar Y, India

**A-4**

Development of initial data for AI Models for the Improvement of Computer Workers Health Status

Piia Tint, Viiru Tuulik, Ada Traumann, Viive Pille, Estonia

**A-5**

An Alternative Approach to Distributed Data Communication Systems

Zhanna Gabbassova, Kazakhstan

**A-6**

Transitioning to Circularity in the Wood-Furniture Sector: A Case Study on Sustainable Material Selection for Disassemblable Components

Stefania Camplone, Giuseppe Di Bucchianico, Italy

**A-7**

Enhancing System Log Interpretation through Generative AI for Dark and Relevant Data, a Systematic Review

Antonio Oliveira, Brazil

**A-8**

Leveraging Collaborative Filtering and Content-Based Analysis for Predicting Social Media Users Vulnerability to Cyber-Attacks

Kiran Kumar Y, India



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# **Call for Papers**

**Please join us for the**

**16<sup>th</sup> International Conference on  
Human Interaction and  
Emerging Technologies  
(IHIET-AI 2026)**

**Artificial Intelligence &  
Future Applications**

**April 23-25, 2026**

**Universitat Politècnica de València  
Valencia, Spain**

**[WWW.IHIET-AI.ORG](http://WWW.IHIET-AI.ORG)**



# **Call for Papers**

**Please join us for the**

**15<sup>th</sup> International Conference on  
Human Interaction and  
Emerging Technologies  
(IHiet 2025)**

**August 25-27, 2025**

**University of Vienna  
Vienna, Austria**

**[WWW.IHIET.ORG](http://WWW.IHIET.ORG)**