



# 2023 IHIET International

9<sup>th</sup> International Conference on

## Human Interaction and Emerging Technologies (IHIET-AI 2023)

Artificial Intelligence & Future  
Applications

April 13-15, 2023

Centre Hospitalier Universitaire Vaudois (CHUV),  
Lausanne, Switzerland

# Final Program

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

# IHIET-AI 2023

## Conference Reception

THURSDAY , APRIL 13, 2023 AT 19:30 - 22:00

RECEPTION LOCATION: BRASSERIE DE MONTBENON  
ALLÉE E. ANSERMET 3, 1003 LAUSANNE  
(DRESS IS BUSINESS CASUAL, PHOTO ID REQUIRED)

(Dress is business casual, Conference Registered Participants, Photo ID required)

## Conference Organization

Scientific and Technical Session: April 14-15, 2023

Location: Lausanne University Hospital (CHUV Centre hospitalier universitaire vaudois)

Location: Rue du Bugnon 46, 1011 Lausanne, Switzerland

### CONFERENCE TRACK CHAIRS

REDHA TAIAR (FRANCE)

### CONFERENCE SCIENTIFIC ADVISOR

TAREQ AHAM (USA)

### CONFERENCE ADMINISTRATOR:

ADMIN[AT]IHIET-AI.ORG

## Conference Tracks

ACRONYM	TRACK
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
IHIET 10	General

# Conference at a Glance

**Scientific and Technical Session:** April 14-15, 2023

Location: Lausanne University Hospital (CHUV Centre hospitalier universitaire vaudois)

Location: Rue du Bugnon 46, 1011 Lausanne, Switzerland

## Friday - Saturday, April 14-15, 2023

#	TITLE	ROOM	TRACK
<b>Friday April 14, 2023 - Session Time: 9:00 - 10:30 CET</b>			
1	Human-centered Design I	Genève	IHIET 1
2	Artificial Intelligence, Computing and Intelligent Design I	Bern	IHIET 2
<b>Friday April 14, 2023 - Session Time: 11:00 - 12:30</b>			
3	Intelligence, Technology and Analytics I	Genève	IHIET 3
4	Human-computer Interaction I	Bern	IHIET 5
<b>12:30 - 13:30 • Sessions Break</b>			
<b>Friday April 14, 2023 - Session Time: 13:30 -15:00</b>			
5	Human-Technology and Future of Work I	Genève	IHIET 5
7	Applications in Medicine and Healthcare I	Bern	IHIET 8
<b>End of Day 1</b>			
<b>Saturday April 15, 2023 - Session Time: 9:00 - 10:30 CET</b>			
9	Applications and Future Trends I	Genève	IHIET 10
10	Human-centered Design II	Bern	IHIET 9
<b>10:30 - 11:00 • Sessions Break</b>			
<b>Saturday April 15, 2023 - Session Time: 11:00 - 12:30</b>			
11	Tutorial: Conceptualizing intelligence amplification in human-centred AI applications using the design canvas	Genève	IHIET 2
14	Artificial Intelligence, Computing and Intelligent Design II	Bern	IHIET 2
<b>12:30 - 13:30 • Sessions Break</b>			

# Detailed Program

PLENARY SESSION		Track	Room
<b>Thursday, April 13</b>		<b>ALL</b>	
<b>19:30 - 22:30</b>	<b>Conference Reception</b>		
	<b>Reception Location:</b> Brasserie de Montbenon, Allée E. Ansermet 3, 1003 Lausanne Tell: +41 21 320 40 30 ( <a href="#">Google Maps</a> ) <b>(Dress is business casual, Photo ID required).</b>		
DAY 1		Track	Room
SESSION 1	Human-centered Design I	IHIET 1	Genève
<b>Friday, April 14</b>	<b>Session Chair(s): Isabella Nevoso, Italy and Waldemar Titov, Germany</b>		
<b>9:00 - 10:30 CET</b>	HCD methodologies and simulation for visual rehabilitator's education in oMERO project Isabella Nevoso, Niccolò Casiddu, Anna Paola Vacanti, Claudia Porfirione, Isabel Leggiero, Francesco Burlando, Italy		
	Designing a Digital Crown-Mapping Application for Pedestrian and Cyclists Waldemar Titov, Carl Gerlach, Thomas Schlegel, Germany		
	On the way to hybrid intelligence: influence of the human-system interaction rate on the human cognitive performance Oleksandr Burov, Evgeniy Lavrov, Svitlana Lytvynova, Olha Pinchuk, Kateryna Horska, Oleksii Tkachenko, Natalia Kovalenko, Yana Chybiriak, Ukraine		
	Human-Centered Design of Voice Communications: Gender Aspects Jan Holub, Yann Kowalczyk, Czech Republic		

DAY 1	Track	Room
<b>SESSION 2</b>	<b>Artificial Intelligence, Computing and Intelligent Design I</b>	<b>IHIET 2 Bern</b>
<b>Friday, April 14</b>	<b>Session Chair(s): Luepol Pipanmekaporn, Thailand and Lanjakorn Sewata, Thailand</b>	
<b>9:00 - 10:30 CET</b>	Visual Instance Retrieval for Cultural Heritage Artefacts using Feature Pyramid Network Luepol Pipanmekaporn, Suwatchai Kamonsantiroj, Thailand	
	Automated Localization and Classification of Diabetic Retinopathy using image processing techniques with Convolutional Neural Network. Lanjakorn Sewata, Krittanai Maneenual, Phichaya Ukosaramic, Thailand	
	Efficient Inductive Logic Programming based on Predictive A*-like Algorithm Moeko Okawara, Junji Fukuhara, Munehiro Takimoto, Tsutomu Kumazawa, Yasushi Kambayashi, Japan	
	Personalized Learning Path (PLP) – "App" for improving academic performance and prevention of dropouts in India Jagannath Kallakurchi, Pradipta Banerji, India	
	Modeling and implementing program activities to support the implementation of new technologies in the small and medium-sized enterprise sector Sylwia Stefaniak, Poland	
	How the Ones in Need Solve Financial Problems in Times of Crisis? The Implication for Government Support Programs Hermann Prossinger, Nikola Geciova, Miroslav Horvath, Jakub Binter, Eliska Cempirkova, Austria	
	<b>10:30 - 11:00 • Sessions Break</b>	

<b>DAY 1</b>		<b>Track</b>	<b>Room</b>
<b>SESSION 3</b>	<b>Intelligence, Technology and Analytics I</b>	<b>IHIET 3</b>	<b>Genève</b>
<b>Friday, April 14</b>	<b>Session Chair(s): Gabriela Reyes Zarate, Mexico and Angelo Compierchio, Sweden</b>		
<b>11:00 - 12:30 CET</b>	<p>Comparison in virtual reality based on efficiency for product assembly  Gabriela G. Reyes-Zárate, Eduardo Caballero Montes, Jorge A. Gonzalez-Mendivil, Uziel Hernández Espejo, Mexico</p>		
	<p>Assistive VR platform design for Telemanipulation at the Super Fragment Separator Facility  Angelo Compierchio, Phillip Tretten, Solomon Oyelere, Chris Karagiannis, Sweden</p>		
	<p>Simulation-based Prediction Model to Optimize Contact Pressure of Knitted Fabrics for Wearable Garments  Seonyoung Youn, Kavita Mathur, Caitlin Knowles, Beomjun Ju, Busra Sennik, Jesse Jur, United States</p>		
	<p>Methodologies For Determining Tariffs For Intermodal Cargo Transportation  Zhaken Kuanyshbayev, Kazakhstan</p>		
	<p>Prevention of Work-Related Musculoskeletal Disorders supported by Artificial Intelligence  Firdaous Sekkay, Canada</p>		
<b>DAY 1</b>		<b>Track</b>	<b>Room</b>
<b>SESSION 4</b>	<b>Human-computer Interaction I</b>	<b>IHIET 5</b>	<b>Bern</b>
<b>Friday, April 14</b>	<b>Session Chair(s): Swenja Sawilla, Germany and Shahzad Alam, United Kingdom</b>		
<b>11:00 - 12:30 CET</b>	<p>Development of an Interaction Concept to Illustrate the Energy Transformation on an AR-Surface  Swenja Sawilla, Waldemar Titov, Mathias Trefzger, Nicola Fricke, Germany</p>		

Safety and security analysis of Connected and Automated Vehicles: A methodology based on Interaction with stakeholders  
Shahzad Alam, Giedre Sabaliauskaite, Hesamaldin Jadidbonab, Jeremy Bryans, United Kingdom

On-Site and Remote Crowdsourcing of Accessibility Data for People with Mobility Impairments: A Case Study in Zurich's District 1  
Alireza Darvishy, Hans-Peter Hutter, Sophy Chhong, Lina Witzel, Switzerland

The Course Glancer - Leveraging Interactive Visualization for Course Selection  
Christian Spletter, Martin Eppler, Switzerland

Operationalising ontologies for competence management in the industry  
Kurt Englmeier, Pedro Contreras, Germany

**12:30 - 13:30 • Sessions Break**

**DAY 1**

**Track**

**Room**

**SESSION 5**

**Human-Technology and Future of Work I**

**IHIET 6**

**Genève**

**Friday, April 14**

**Session Chair(s): Sören Holzenkamp, Germany and Linda Bower, United States**

**13:30 - 15:00 CET**

Identification of airspaces with increased coordination effort based on radar data  
Sören Holzenkamp, Martin Jung, Germany

Bulgaria's Digital Transformation  
Linda Bower, United States

Internet of Things (IoT) based Drowsiness Detection and Intervention System  
Amandeep Singh, Siby Samuel, Jagmeet Singh, Yash Kumar Dhabi, Canada

Prevention of Cyberbullying in Social Media: Perspective of Female Entrepreneurs in Bangladesh.  
Mohammad Rashed Khan, United Kingdom

**DAY 1**

**Track**

**Room**

**SESSION 7**

**Applications in Medicine and Healthcare I**

**IHIET 8**

**Bern**

**Friday, April 14**

**Session Chair(s): Wael Hafez, United States and Ikram Ghouri Mukarram Mohammed, Russia**

**13:30 -15:00 CET**

Patient Human Digital Twin Platform for Patient-Centered Healthcare  
Wael Hafez, United States

Comparative Analysis Methods in Optimizing Corticosteroid Therapy in Patients with Covid-19 and Diabetes Mellitus

Ikram Ghouri Mukarram Mohammed, Irina Kurnikova, Maiorov Vladimir, Iuliia Verzina , Tatiana Meleshkevich, Evgeniya Tavluva, Russia

Quantitative assessments in evaluating the effectiveness of arterial hypertension treatment: new technologies

Irina Kurnikova, Ramchandra Sargar, Alexi Pavlov, Zhanar Baisenbaeva, Natalia Zabrodina, Russia

**15:00 - 15:30 • Sessions Break**



DAY 2		Track	Room
<b>SESSION 9</b>	<b>Applications and Future Trends I</b>	<b>IHIET 10</b>	<b>Genève</b>
<b>Saturday, April 15</b>	<b>Session Chair(s): Thomas Menkhoff, Singapore and Shuichi Fukuda, Japan</b>		
<b>9:00 - 10:30 CET</b>	Engaging Students through Conversational Chatbots and Digital Content: A Climate Action Perspective Thomas Menkhoff, Benjamin Gan, Singapore		
	Instinctive Intelligence: Our Next AI Shuichi Fukuda, Japan		
	Public's Perspective on Civil Drones: Reasons to support and oppose Vaishnavi Upadrasta, Rodney Leitner, Germany		
	New technologies sustainability: monitoring and evaluation of results of interventions for the promotion of cultural heritage and the human landscape Francesco Toscano, Paola Dantonio, Costanza Fiorentino, Francesca Vera Romano, Vincenzo Nunzio Scalcione, Italy		
	Human Machine Interaction and Security in the era of modern Machine Learning Anastasia-maria Leventi-Peetz, Germany		
DAY 2		Track	Room
<b>SESSION 10</b>	<b>Human-centered Design II</b>	<b>IHIET 1</b>	<b>Bern</b>
<b>Saturday, April 15</b>	<b>Session Chair(s): Päivi Heikkilä, Finland and Akhila Bairy, Germany</b>		
<b>9:00 - 10:30 CET</b>	Framework of Future Industrial Worker Characteristics Päivi Heikkilä, Susanna Aromaa, Hanna Lammi, Timo Kuula, Finland		
	Optimal Explanation Generation using Attention Distribution Model Akhila Bairy, Martin Fränzle, Germany		
	Exploration of Intercultural Mechanism of Language through the Interaction with Sensitive Qualities of Artistic Objects		

Jorge Gil Tejada, Lorena Olmos Pineda,  
Mexico

**10:30 - 11:00 • Sessions Break**

**DAY 2**

**Track**

**Room**

**SESSION 11**

Tutorial: Conceptualizing intelligence  
amplification in human-centred AI  
applications using the design canvas

**IHIET 2**

**Genève**

**Saturday,  
April 15**

Session Chair(s): Jean Paul Sebastian Piest,  
Maria Eugenia Iacob, Marcel Johanna  
Theodoor Wouterse, Netherlands

**11:00 -  
12:30 CET**

Tutorial: Conceptualizing intelligence  
amplification in human-centred AI  
applications using the design canvas  
Jean Paul Sebastian Piest, Maria  
Eugenia Iacob, Marcel Johanna Theodoor  
Wouterse, Netherlands

**DAY 2**

**Track**

**Room**

**SESSION 14**

**Artificial Intelligence, Computing and  
Intelligent Design II**

**IHIET 2**

**Bern**

**Saturday,  
April 15**

**Session Chair(s): Barry Kirwan, France**

**11:00 -  
12:30 CET**

The Future Impact of Digital Assistants on  
Aviation Safety Culture  
Barry Kirwan, France

VOXReality: Immersive XR experiences  
combining language and vision AI models  
Apostolos Maniatis, Stavroula Bourou,  
Zacharias Anastasakis, Kostantinos  
Psychogios, Greece

Information Digital Twin Flight Platform—  
Enabling Aircraft Human-Machine Teams  
Wael Hafez, United States

Human like programming using SPADE  
BDI agents and the GPT-3-based  
Transformer

Alain Josué Ratovondrahona,  
Hanitriniaina Marielle Rakotozanany,  
Thomas Mahatody, Victor Manantsoa,  
Madagascar

# Poster Demonstrations

<b>SESSION A Poster Demonstration Session</b>	
<b>Friday-Saturday, April 14-15 [10:30 - 15:30]</b>	
<b>A-1</b>	The Mixed Reality Passthrough Window: Rethinking the Laptop Videoconferencing Experience Ian Gonsler, Matt Lee, Yumeng Ma, Ivan Pineda-dominguez, Yuxin Han, United States
<b>A-2</b>	Virtual Reality to Improve Technical Teacher Presenting and Speaking Skills David Vaněček, Dana Dobrovská, Czech Republic
<b>A-3</b>	Data Analysis for the Projection of Flexible Composite Materials to Naval Transport Scenarios Alexandra - Gabriela Ene, Carmen Mihai, Mihaela Jomir, Constantin Jomir, Romania
<b>A-4</b>	TAKTIK – A digital and intelligent playbook for the learning and teaching of game tactics Sebastien Tremblay, Cindy Chamberland, Canada
<b>A-5</b>	Blinking, Beeping or Just Driving? Investigating Different Communication Concepts for an Autonomously Parking E-Cargo Bike from a User Perspective Isabel Kreißig, Tina Morgenstern, Josef Krems, Germany
<b>A-6</b>	Can ChatGPT Help College Instructors Generate High-quality Quiz Questions? Kai Lu, United States
<b>A-7</b>	Does the level of system autonomy affect the sense of agency and moral decision making? An experimental study Adriana Salatino, Arthur Prevel, Emilie Caspar, Salvatore Lo Bue, Belgium
<b>A-8</b>	Complementing and continuously developing human expertise with AI Phlipp Renggli, Ruben Zwicker, Lukas Weiss, Toni Waeffler, Switzerland
<b>A-9</b>	Application of Double Skin Facade to Improve the Thermal Comfort Level in an Experimental Chamber Eusébio Conceição, Maria Inês Conceição, Maria Manuela Lúcio, João Gomes, Hazim Awbi, Portugal
<b>A-10</b>	Numerical study of the airflow around the occupant using confluent jets system Eusébio Conceição, Maria Inês Conceição, Maria Manuela Lúcio, João Gomes, Hazim Awbi, Portugal



# 2023

# IHIET

## International

10<sup>th</sup> International Conference on

# Human Interaction and Emerging Technologies (IHIET 2023)

Artificial Intelligence & Future  
Applications

August 22-24, 2023

Université Côte d'Azur, Nice, France

# Call for Papers

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