

Venue: Customs House  
University of Queensland

April 16, Thursday



9:00 – 9:20 Opening Ceremony

The Long Room

9:20 – 10:00 Plenary Talk I

The Long Room

Session chair: Levente Kovács

72	<b>Amir H Gandomi</b>	Computational Intelligence for Social Good: Advancing Cybernetics and Medical Systems
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10:00 – 10:20 Coffee break

10:20 – 11:00 Plenary Talk II

The Long Room

Session chair: Amir H. Gandomi

73	<b>Tom D Gedeon</b>	Responsible AI for Implicit Cybernetics
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11:00 – 11:30 Tutorial I

The Long Room / online

**Uncertainty-Aware Neural Networks for Reliable Decision Making in Medical Systems**

**Presenters:** Dr. Hassan Gharoun (University of Technology Sydney, Australia), Prof. Amir H. Gandomi (University of Technology Sydney, Australia; Óbuda University, Hungary)

11:30 – 12:00 Tutorial II

The Long Room / online

**Cyber-Threat Detection on Deep/Dark Web and High-Risk Platforms Using LLMs and Semi-Supervised Ensembles**

**Presenters:** Dr. Navid Yazdanjue (University of Technology Sydney, Australia), Prof. Amir H. Gandomi (University of Technology Sydney, Australia; Óbuda University, Hungary)

12:00 – 13:00 Lunch

**13:00 – 14:20 [T1] Session on Computational intelligence-based results of information technology and signal processing**

The Long Room

Session chair: Zoltán Rajnai

32	<b>Dr. Raja Waseem Anwar</b> , Flavio Pastore, Nafaa Hadi Jabeur and Saqib Ali	Risk-Aware Multimodal Fusion for Anomaly Detection in Cyber-Medical IoMT Systems
61	Gábor Kertész, <b>Ádám Pintér</b> , Zsolt Bringye, Balazs Gaspar, <b>Kata Egres</b> , Ludger Tebartz van Elst, Johanna Pirker and Knut Möller	An Application-oriented Survey of Digital Solutions in Mental Healthcare
38	<b>Attila Biró</b> , Levente Kovacs and László Szilágyi	A Bioinformatics-Driven, Biostatistical Pathway Framework with Multimodal Machine Learning for Athlete Burnout Prediction on Physiological Signals
15	<b>Charles Louie Siplao</b> , Johnson Agbinya, Mohammad Belayet Hossain and Ajit Jaiswal	Fast World-Model Decoding for Lightweight 3D Autonomous Vehicular Scenes

**13:00 – 13:30 [T1p] e-poster session**

Session chair: Bing Yan

39	Matúš Dopiriak, Miroslav Imrich, <b>Peter Drotár</b> , <b>Liberios Vokorokos</b> , Peter Mésároš and Juraj Gazda	Multi-Modal Radiance Fields in Robotics: A Survey
9	<b>Jean Rosemond Dora</b> , Ladislav Hluchy	Enumeration and Scratching the Surface of Kiosk Environment
10	<b>Jean Rosemond Dora</b> , Ladislav Hluchy, Friday Ikechukwu Agu and Michal Staňo	Enhancing Security and Integrity of Public Access Kiosk Systems Against Unauthorized Privilege Escalation
51	Balazs Szabo and <b>Adam Pinter</b>	DrumBuddy: A MIDI-based drum transcription and practice system for electronic drums
52	Mark Hanyvari and <b>Ádám Pintér</b>	Table Tennis Scoring System: Single-Camera, Real-Time Scoring System with Hybrid Image Processing
53	Marcell Meszoly and <b>Ádám Pintér</b>	Card Counting Teaching System for the Card Game Blackjack using Image Processing
54	Lorant Aron Perger and <b>Ádám Pintér</b>	Application for Pseudocode Interpretation and Code Analysis

55	Andras Domonkos and <b>Ádám Pintér</b>	Devirtualizing the demo version of the Enigma Protector
56	Lajos Turi and <b>Ádám Pintér</b>	Identifying Malicious Software Using Neural Networks Based on Visual Representation and Static Analysis Techniques
57	Krisztián László and <b>Sándor Szénási</b>	Simulating Cracking and Breaking of Glass and Other Objects
58	György Sebestyén and <b>Sándor Szénási</b>	Autonomous Drone Landing Assistant System
60	Zoltan Tompa and <b>Gábor Kertész</b>	Predicting Professional Darts Match Outcomes Using Player Performance Statistics and Machine Learning
35	<b>Gábor Sterczl</b>	Is generative AI an illegal crutch or tutor in Generation Z's learning processes?
65	<b>Dr. Habil. Mizser Csilla Ilona</b>	Do citizens trust in public institutions? An overview of trust in states and in public institutions.
50	<b>Yu Shaohang</b> , Yan Bing, Ma Wei and Wu Chengfu	Static output feedback control of state-dependent switched systems via Homogeneous Polynomial Lyapunov Functions Metzler Methodology
59	Archit Krishna Kamath, <b>Bing Yan</b> and Michael Shi	Modeling Augmented Visual Servoing Dynamics of Over-Actuated Multirotors Using Persistently-Excited Physics-informed Neural Networks

**14:20 – 15:40 [T2] Session on Computer science, Economical systems, and Biological (living) systems**

The Long Room

Session chair: Attila Biró

71	<b>Mahtab Shahin</b> , Riina Palu, Ralf-Martin Soe, Mohammad H. Nadimi-Shahraki and Amir.H Gandomi	A Scalable Cloud–Edge Digital Twin Framework for Urban Healthcare Analytics
47	<b>František Kurimský</b> , Marek Pavlík and Ľubomír Antoni	Analyzing the Impact of Solar and Wind Generation on Electricity Prices in Germany using GUHA Association Rules
34	Attila Biró, Levente Kovacs and <b>László Szilágyi</b>	Bioinformatics-Guided NSGA-II Pathway-Sparse Optimization for Interpretable Neurodegenerative Risk Detection
36	Marianna Dimitrova Kucarov, <b>Miklós Vincze</b> , Bela Molnar and Miklos Kozlovszky	Comparing Morphology Features with Genomic Insights in Carcinogen, Nat, and Normal Colon Tissue Samples to Observe Tumor Heterogeneity: A Case Study for a Patient with Colorectal Cancer

15:40 – 16:00 Coffee break

**16:00 – 17:40 [T3] Special Session on Digitalisation, Generation Research, Consumer Trends I**

**The Long Room**

Session organizers and chairs: Mónika Garai-Fodor, Ágnes Csiszárik-Kocsir and János Varga

12	Anikó Vágvölgyi, Levente Kovács, László Gulácsi and <b>Márta Péntek</b>	Experience with Assistive and Service Robots in the General Population of Hungary
13	Anikó Vágvölgyi, Levente Kovács, <b>László Gulácsi</b> and Márta Péntek	Utilization of Hungary's National eHealth Infrastructure Among the General Population
20	Petra Pongrácz and <b>Andrea Tick</b>	GenAI in Financial Services: A Quantitative Study on Customer Demand for Virtual Assistants
24	<b>György Molnár</b> , Levente Juhász, Gyula Gubán, László Kadocsa, Enikő Nagy and Andrea Tick	From Blackboard to Algorithm: AI's Impact on Teaching and Learning Design
21	Luna Mohanad Al-Akhras and <b>Andrea Tick</b>	Balancing Innovation and Integrity: Employee Perceptions of AI in the Workplace: A TPB–TOE Integrated Analysis

18:00 Welcome Reception

**The River Room**

## April 17, Friday

**9:00 – 9:40 Plenary Talk III**

**The Long Room**

Session chair: László Gulácsi

74	<b>Peng Shi</b>	How Vulnerable are Cyber-Physical Systems?
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**9:40 – 10:20 [F1] Special Session on Intelligent Secure Collaboration: Resilient and Learning-Based Control for Multi-Agent Autonomous Systems** **The Long Room**

Session organizers and chairs: Peng Shi, Xiaojie Su, Bing Yan, Archit Krishna Kamath, Michael Shi, Huiyan Zhang, Dezhi Xu

49	Yaran Wang, <b>Michael Shi</b> , Ning Zhao, Huiyan Zhang and Rongni Yang	Event-triggered state estimation for discrete-time nonlinear systems under replay attacks
68	<b>Hongyun Liu</b> and Nils Barring	Learning-Based Anomaly-Tolerant Resource Management in Cloud-Edge Continuum

10:20 – 10:40 Coffee break

**10:40 – 12:20 [F2] Special session on Digitalisation, Generation Research, Consumer Trends** **The Long Room**

Session organizers and chairs: Mónika Garai-Fodor, Ágnes Csiszárík-Kocsir and János Varga

25	Enikő Nagy and <b>György Molnár</b>	Educational robotics and data-driven teaching: new dimensions in the integration of technology and pedagogy
22	Kitti Tristen Dán and <b>Andrea Tick</b>	Generative AI in Business: applications, labor market implications and business proposals
41	<b>Enikő Nagy</b> , Zoltán Balogh and Béla Mészáros	An experimental study of the machining of cold-forming tool steels in an educational environment
23	Yuqing Guan and <b>Andrea Tick</b>	From Intention to Habit: A PMT–UTAUT Model of E-Payment Security Behavior: Evidence from a Pilot Study
29	<b>Mónika Garai-Fodor</b> and Anett Popovics	Consumer perceptions of sustainability issues and measures in relation to gender

12:20 – 13:30 Lunch

**13:30 – 15:10 [F3] Online Session**

Session chair: Tom Gedeon

5	<b>Zhyar Kwekha Rostam</b> and Gábor Kertész	Hierarchical Scientific Text Classification Using Mutual Learning and Adaptive Ensemble of Pre-trained Language Models
26	<b>László Horváth</b>	Knowledge Driven Autonomous Model of Research for High Automation
43	Ákos Botos, <b>József Fogarasi</b> and Márta Takács	Joint Temperature and Load Impacts on Electricity Prices Using a Mamdani Fuzzy Inference System
16	<b>Zhyar Kwekha Rostam</b> , Márta Péntek, János Tibor Czere, Zsombor Zrubka, Gábor Kertész and László Gulácsi	Ensembles of Large Language Models for Identifying EQ-5D Studies in PubMed Based on Their Abstracts
46	<b>Tamás Panyi</b> and Attila Farkas	MetaPAC: Adaptive Mixed Compression of Transformer Models with Meta-Learned Importance

**15:00 – 16:45 [F4] Online Special Session on PhD Student Research**

Session organizer and chair: László Horváth

31	<b>Loubna Seddiki</b> , Ahmed Fouad Lagha and Imre Lendak	A Survey of IoMT Datasets: Availability, Applications, and Research Insights
33	<b>Milan Balazs</b> , Balint Babenyecz and Gyorgy Eigner	Simulation-Driven Optimization of Containerized Systems Using the ContSysSim Framework
37	<b>Sándor Burian</b> , Dmitri Garin and Miklos Kozlovsky	A Review of Lunar Rover Wheels
40	<b>Sándor Tarsoly</b> , Péter Galambos and Artúr István Károly	Efficient Statistical Analysis of Mushroom Growth Through Bounding Box-based Instance Tracking
45	<b>Kaziwa Saleh</b> , Sándor Szénási and Zoltán Vámosy	Weighted Mask with Enhanced Gated Convolution for Amodal Content Completion of Animals
48	<b>Panna Zsoldos</b> and Péter Galambos	From Isolation to Intelligence: Toward Fully Autonomous Laboratory Ecosystems
66	<b>Ágnes Gerse</b> , Adrienn Dineva and Rita Fleiner	Development of a Database-Driven Simulation Environment for District Heating Systems in Hungary

18:00

Banquet

**The River Room**

## April 18, Saturday

One-day tour

## April 20, Monday

Travel to Uluru (recommended flight: 12:15 BNE AYQ 15:40 VA1693)

## April 21, Tuesday

**Workshop**

11	Robert Roman, Levente Kovacs and <b>László Szilágyi</b>	Automatic Detection of Bacterial and Viral Pneumonia from X-Ray Scans
67	<b>Anca-Adriana Petcut-Lasc</b> , Flavius-Maxim Petcut and Valentina Emilia Balas	Adaptive Computational Cybernetics for Photovoltaic Energy Optimization under Partial Shading Conditions
69	<b>Zihang Xu</b> , Ke Zhang, Bing Yan and Peng Shi	Finite-Time Formation Tracking with CBF-based Safety Filtering for Multi-Agent Systems
19	<b>Zoltan Rajnai</b> , Andrea Tick, Aniko Kiss and <b>Beatrix Fregan</b>	Smart Defense: Artificial Intelligence for Financial Cybersecurity
28	<b>Attila Biró</b> , <b>Levente Kovacs</b> and <b>László Szilágyi</b>	Risk-Aware Genetic Algorithms for Reliable Triathlon Relays: A Cantelli-Regularized Applied Mathematics Pipeline
44	<b>Kristof Takacs</b> , Eszter Lukács and Tamás Haidegger	Multimodal Biosensing of Stress and Gaze Behavior for Skill Assessment in Robot-Assisted Surgery