The Fourth International Conference on Innovations in Computing Research (ICR'25)
London, UK, August 25-27, 2025

Conference Program

Monday, August 25, 2025 (Meeting Room: Atlantic)

07.30-08.00	Conference Registration (Conference Registration Desk)

08.00-08.15   WELCOME
Professor Hiroaki Kikuchi, Meiji University, Japan
Conference Chair

ICR25-Session-1-I   **Data Science**
08.20 -10.20, August 25, 2025 (In-person)

Session Chair: Robert Polding
IE University, Spain

08.20-08.40   Implementation of Descriptive Similarity for Estimation Elective Programs of Political Parties
Maryna Averkyna[1,2], Peeter Lorents[1], and Maria Khvalko[3]
[1]Management & Organization Department, Estonian Business School, Estonia
[2]Management Organization Department, Lviv Polytechnic National University, Ukraine
[3]Department of financial control, Soufllet Agro, Ukraine

08.40-09.00   Machine Learning for Radiation Data Imputation in Vicinity of Nuclear Power Plants
Hsiao Ching Teng, **Shu-Nung Yao**, and Yu Hsiang Wang
National Taipei University, New Taipei 237303, Taiwan

09.00-09.20   K-nearest Neighbour Algorithm Clustering Simple Moving Average the Better Trend Classification Indicator
Justin Hui San Zhao[1, 2, 3] and Thair Al-Dala'in[1,2]
[1]Western Sydney University, Sydney City Campus, Australia
[2]Asia Pacific International College (APIC), Parramatta, Australia
[3]Lincoln Institute of Higher Education (LIHE), Sydney, Australia

09.20-09.40   Industrial (Open) Data Ecosystems: Technological Infrastructure Challenges
Marija Kuštelega, Larisa Hrustek, and Renata Mekovec
University of Zagreb, Faculty of Organization and Informatics, Varaždin 42000, Croatia

| 09.40-10.00 | Machine Learning in Forensic Age Prediction: A Comparative Analysis of Regression Models and DNA Methylation Biomarkers |

Deshao Liu[1,2,3,4] and Anuradha Samkham Raju[5]

[1]School of Computer Data and Mathematical Sciences, Western Sydney University (WSU), Sydney, Australia
[2]Asia Pacific International College (APIC), Sydney, Australia
[3]The Institute of International Studies (TIIS), Sydney, Australia
[4]Lincoln Institute of Higher Education (LIHE), Sydney, Australia
[5]Victorian Institute of Technology, Sydney, Australia

| 10.00-10.20 | Leveraging Machine Learning to Predict Liver Disease Status: A Classification Approach |

Pavani Minukuri, Yathisha Ganesh, and **Samah Senbel**

Sacred Heart University, Fairfield CT, USA

| 10.20-10.40 | **BREAK** |

ICR25-Session-2-R **Computer and Network Security**
10.40-12.20, August 25, 2025 (Remote)

Session Chair: **Elena Kakoulli**
Neapolis University Pafos, Pafos, Cyprus

| 10.40-11.00 | Addressing Cybersecurity Challenges in 5G-Enabled IoT Networks: Solutions and Future Directions |

João Azevedo[1]and Manuel J.C.S. Reis[2]

[1]Engineering Department, University of Trás-os-Montes e Alto Douro (UTAD), Portugal
[2]Engineering Department, UTAD & Institute of Electronics and Informatics Engineering of Aveiro (IEETA), Portugal

| 11.00-11.20 | Advancing Security in Healthcare IoT: A Literature Review on MitM Attack Detection and Mitigation Using Machine Learning and Encryption Techniques |

Mohamad Abdallah Mohamad and Bassel Soudan

Department of Computer Engineering, University of Sharjah, Sharjah, UAE

| 11.20-11.40 | Backdoor Adversarial Machine Learning Attack on Graph Convolutional Networks for IoMT Traffic Misclassification |

Michael Georgiades[1,4], Faisal Hussain[2], and Lakis Christodoulou[3]

[1]ISLab, Computer Science, Neapolis University Pafos, Cyprus
[2]Department of Computing, National University of Modern Languages, Pakistan
[3]R&D, Technology, and Innovation, Biomed Medical Systems, Pafos, Cyprus
[4]Infostrada Communications, Paphos, Cyprus

11.40-12.00	Evaluating Model Inversion Attack Success Across Neural Architectures in Federated Learning for Malware Classification
	Eman Shalabi[1], Walid Khedr[2], Ehab Rushdy[1], Asma Musabah Alkalbani[3], and **Ahmad Salah**[3] [1]College of Computers and Informatics, Zagazig University, Zagazig, Egypt [2]College of Computer Science and Engineering, Taibah University, Yanbu 966144, Saudi Arabia [3]College of Computing and Information Sciences, University of Technology and Applied Sciences, Ibri, Oman

12.00-12.20	Secure AI-Integrated Classroom Assistant for Intelligent Educational Support
	Elena Kakoulli[1,2], Salomi Evripidou[1], and Eleftherios Zacharioudakis[1,2] [1]Intelligent Systems Laboratory, Department of Computer Science, Neapolis University Pafos, Pafos, Cyprus [2]Electrical Engineering and Computer Engineering and Informatics, Cyprus University of Technology, Limassol, Cyprus [3]National Technical University of Ukraine, Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

12.20-01.20 **LUNCH BREAK (ON YOUR OWN)**

ICR25-Session-3-I **Computer Science and Computer Engineering Education**
01.20-03.00, August 25, 2025, (In-Person)

Session Chair: **Ela Pustulka**
The University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

01.20-01.40	Feasibility Study on Leveraging Proof Assistants for Educational Purposes
	Fernand Dubler, Ulrich Ultes-Nitsche, and Dorian Guyot University of Fribourg, Fribourg, Switzerland

01.40-02.00	Education vs. Earnings: An Analytical Perspective on Fields of Study and Salaries Using Python
	Kirtankumar Patel, Leela Avula, and **Samah Senbel** Sacred Heart University, Fairfield, CT, USA

02.00-02.20	Enhancing Technical Education for Students and People with Disabilities Through Virtual Reality: A Case Study Using a CNC Device.
	Mario Covarrubias[1], Makam Ramachandra Gupta Shashank[1], Nicolás Norambuena[2], Felipe Muñoz[2], Cristobal Galleguillos[2], and Jose Valin[2] [1] Politecnico di Milano, Department of Mechanical Engineering, Italy [2] Pontificia Universidad Cat´olica de Valpara´ıso, Chile

02.20-02.40	Key Determinants for Successful Digital Transformation: Insights from Content Analysis and Educational Implications **Ana Kutnjak** and Igor Pihir University of Zagreb Faculty of Organization and Informatics, Pavlinska 2, 42000 Varaždin, Croatia
02.40-03.00	Enhancing SQL Learning with Large Language Models: Generating Translations and Explanations for Educational Use Samira Moser and **Ela Pustulka** The University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland
03.00-03.20	**BREAK**
03.20-04.20	**Keynote Speech:** **The Category-Based Approach to Access Control, Obligations and Privacy** **Professor Maribel Fernández** King's College London, UK
07.30-09.30	**CONFERENCE DINNER**

Tuesday, August 26, 2025 (Meeting Room: Atlantic)

ICR25-Session-4-IR **Health Informatics and Biomedical Imaging**
08.00-09.20, August 26, 2025 (In Person/Remote)

Session Chair: **Sandi Ljubic**
University of Rijeka, Croatia

08.00-08.20 Urban Technologies for Sustainable Aging: Addressing Vision Impairments in Older Populations

Gema Martinez-Navarrete[1], Vanessa Zorrilla-Muñoz[2,3], Eduardo Saenz de Cabezon[4], Nicanor Morales-Delgado[1], Ramon Peral-Orts[5], María Silveria Agulló-Tomás [2,6], Nicolas Garcia Aracil[1], Jose Maria Sabater-Navarro[1], and Eduardo Fernandez [1,7]

[1]Department of Anatomy and Human Embriology. Miguel Hernandez University, 03550, San Joan, Spain
[2]Bioengineering Institute, Miguel Hernandez University, 03202, Elche, Spain
[3]University Institute on Gender Studies, University Carlos III of Madrid, Getafe, 28903 Madrid, Spain
[4]Department of Mathematics and Computation Department, University of La Rioja, 26006, Logroño, Spain
[5]Department of Applied Mechanical Engineering, Miguel Hernandez University, 03202, Elche, Spain
[6]Social Sciences Department, University Carlos III of Madrid, Getafe, 28903 Madrid, Spain
[7]Networking Research Centre of Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Spain

08.20-08.40 A Comprehensive Three-Stage Evaluation Framework for AI-Enhanced EHR Training Systems: A Case Study in Cardiac Catheterization Laboratory Documentation

Vikraman Baskaran and Keyani Mathis
College of Professional Advancement, Mercer University, Atlanta, GA-30341, USA

08.40-09.00 Advancing Healthy Aging: The Impact of Assistive Technolo-gies on Mobility and Self-Care Among Older People

Vanessa Zorrilla-Muñoz[1,2], Gema Martinez-Navarrete[3], Yolanda Vales[1], José M. Catalan[1], Andrea Blanco-Ivorra[4], Nicanor Morales-Delgado[5], Ramón Peral-Orts[6], Eduardo Saenz-de-Cabezon[7], José María Sabater-Navarro1, Eduardo Fernandez[1, 8], Nicolas García Aracil1, and Mari Carmen Lillo-Navarro[9]

[1]Bioengineering Institute, Miguel Hernandez University, 03202, Elche, Spain
[2]University Institute on Gender Studies, University Carlos III of Madrid, Getafe, 28903 Madrid, Spain

[3]Department of Histology and Anatomy. Division of Cell Biology, Miguel Hernandez University, 03550, San Joan, Spain
[4]Department of Materials Science, Optics, and Electronic Technology, Miguel Hernandez Univer-sity,03202, Elche, Spain
[5] Department of Anatomy and Human Embriology, Miguel Hernandez University, 03550, San Joan, Spain
[6] Department of Applied Mechanical Engineering, Miguel Hernandez University, 03202, Elche, Spain
[7] Department of Mathematics and Computation Department, University of La Rioja, 26006, Lo-groño, Spain
[8]Networking Research Centre of Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Spain
[9]Department of Pathology and Surgery, Miguel Hernandez University, 03550, San Joan, Spain

09.00-09.20

TINRELIEF: Mobile Application for Tinnitus Sound Therapy

Luka Škrlj[1,2], Andrea Andrijašević[3], Mirta Čulina[4], and **Sandi Ljubic**[1,2]
[1]University of Rijeka, Faculty of Engineering, Vukovarska 58, 51000 Rijeka, Croatia
[2]Center for Artificial Intelligence and Cybersecurity, University of Rijeka, R. Matečiˇcˊc 2, 51000 Rijeka, Croatia
[3]University of Applied Sciences of Rijeka, Vukovarska 58, 51000 Rijeka, Croatia
[4]Clinical Hospital Center Rijeka, Kreˇsimirova 42, 51000 Rijeka, Croatia

09.20-10.20   **Panel**:   **Current and Future Innovations in Data Science**

Moderator: **Robert Polding**, IE University, Spain

Panelists: **Samah Senbel**, Sacred Heart University, USA
Maryna Averkyna, Estonian Business School, Estonia
Imran Khan, Sultan Qaboos University, Muscat, Oman.

10.20-10.40   **BREAK**

ICR25-Session-5-IR   **Computer and Network Security**
10.40-12.00, August 26, 2025 (In-person/Remote)

Session Chair: **Eleftherios Zacharioudakis**
National Technical University of Ukraine, Ukraine

10.40-11.00   Impact Assessment of Adversary-in-the-Middle Attack Evilginx Bypassing 2FA
Hiroaki Kikuchi
Meiji University, 4-21-1 Nakano, Tokyo 164-8525, Japan

11.00-11.20	Developing a Conceptual Framework for Enhanced Cybersecurity Defense against Zero-Click Exploit

11.00-11.20 — Developing a Conceptual Framework for Enhanced Cybersecurity Defense against Zero-Click Exploit

Abdulhadi A. AL Khamis[1], Mohsin Iftikhar[2], Mohsin Murtaza[3], and Sohail Gohir[4]
[1] Saudi Aramco, Saudi Arabia
[2] Higher Colleges of Technology, UAE Federal Government
[3] STEM College, RMIT University, Melbourne, Australia
[4] Higher Colleges of Technology, UAE Federal Government

11.20-11.40 — Dynamic and Explainable Federated Learning for IoT Anomaly Detection: A Comparative Study with Centralized Machine Learning Models

Alend Jarjis[1,3] and Yaşar Becerikli[2]
[1] Faculty of Engineering, Department of Computer Engineering, Kocaeli University, Kocaeli 41001 Turkey
[2] Department of Digital Forensics Specialization, Institution of Forensic Medicine, Istanbul 34400 Turkey
[3] Department of Mathematics, College of Education, Salahaddin University, Erbil, Iraq

11.40-12.00 — A Scalable Cybersecurity Model for Shared SOCs in SMEs

Eleftherios Zacharioudakis[1] and Elena Kakoulli[2,3]
[1] National Technical University of Ukraine, Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine
[2] Intelligent Systems Laboratory, Department of Computer Science, Neapolis
University Pafos, Pafos, Cyprus
[3] Electrical Engineering and Computer Engineering and Informatics, Cyprus
University of Technology, Limassol, Cyprus

12.00-12.20 — **FREE SLOT**

12.20-01.20 — **LUNCH BREAK (ON YOUR OWN)**

ICR25-Session-6-IR **Internet of Things + Computer and Network Security**
01.20-02.40, August 26, 2025 (In-person/Remote)

Session Chair: **Spyros Sioutas**
University of Patras, Greece

01.20-01.40 — SF-SMCM: A Security Framework for Single-To-Multi-Cloud Migration
Yasmin Gad, Mohamed Hamed N. Taha, and Nour Eldeen Khalifa

Faculty of Computers and Artificial Intelligence, Cairo University, Egypt

01.40-02.00   From Static to Elastic: A Hybrid IoT Ontology Framework for Industry 4.0 and Beyond
Larysa Globa[1], **Serhii Ushakov[1]**, and Oleh Kopiika[2]
[1]Institute of Telecommunication System, National Technical University of Ukraine, Ukraine
[2]Institute of Applied Control Systems of the National Academy of Sciences of Ukraine, Ukriane

02.00-02.20   Securing LoRaWAN for Smart Grids: A Comprehensive Analysis of Vulnerabilities, Challenges, and Research Directions
Noor Shomal and Bassel Soudan
University of Sharjah, Sharjah, UAE

02.20-02.40   Optimizing Data Transmission in LoRa-Based IoT Systems: A Performance Evaluation of Compression Algorithms
Vasilikh Misahlidou[1], Aristeidis Karras[1], Ioanna Giannoukou[2], and **Spyros Sioutas[1]**
[1]Computer Engineering and Informatics Department, University of Patras, Greece
[2]Department of Management Science and Technology, University of Patras, Greece

02.40-03.00   **BREAK**

03.00-04.00   **Keynote Speech:**
Architectures of Next Generation Wireless Networks

Professor Pascal Lorenz
University of Haute-Alsace, France, France

Wednesday, August 27, 2025 (Meeting Room: Pacific)

ICR25-Session-7-R **Computer Science/Computer Engineering Education**
          07.40-09.20, August 27, 2025 (Remote)

Session Chair: **Razwan Mohmed Salah**
          University of Duhok, Kurdistan, Iraq

07.40-08.00   Teaching Abstraction in Computer Science Courses
          Neelam Soundarajan
          Computer Science and Engineering Department, The Ohio State
          University, USA

08.00-08.20   Exploring Embedded Computing Integration in MVC Blazor - based
          Learning Management Systems
          Agon Memeti[1], Neshat Ajruli[1], Ibrahim Neziri[2], and Shkurte Luma-
          Osmani[1]
          [1]Department of Computer Sciences, Faculty of Natural Sciences and
          Mathematics, University of Tetova, 1200 Tetovo, North Macedonia
          [2]Department of Psychology, Faculty of Philosophy, University of
          Tetova, 1200 Tetovo, North Macedonia

08.20-08.40   Enhancing Academic Advising through AI Chatbots: A Smart Support
          System for Students
          Wasin Alkishri[1], Mahmood Al-Bahri[2], and Yousuf Al Husaini[1]
          [1]Arab Open University, Oman
          [2]Sohar University, Oman

08.40-09.00   Enhancing VR Education through AI-Driven Emotional Adaptation: A
          Survey on Emotion-Centric VFX and Adaptive Learning Environments
          Sobia Kousar[1], Farnaz Farid[2], Mukta D O Dinesh Kumar[1], Somesh S O
          Guljari Lal[1], and Mahmoud Bekhit[3,4]
          [1]Asia Pacific International College, Sydney, 2150, Australia
          [2]School of Social Sciences, Western Sydney University, Sydney, 2751,
          Australia
          [3]Peter Faber Business School, Australian Catholic University (ACU),
          North Sydney, NSW, 2060, Australia
          [4]Faculty of Engineering and Information Technology, University of
          Technology Sydney (UTS), Sydney, 2007, Australia

09.00-09.20   Optimizing Learning Experiences: MVC BLAZOR Components and
          Emerging Educational Technologies in LMS Development
          Krenar Huseini, **Agon Memeti**, Florinda Imeri, and Shkurte Luma-
          Osmani
          Department of Computer Sciences, Faculty of Natural Sciences and
          Mathematics, University of Tetova, 1200 Tetovo, North Macedonia

09.20-10.20	**Panel**:	**Emerging Trends in Computer Science and Computer Engineering Education**

Moderator: **Ela Pustulka**, The University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

Panelists: **Sandi Ljubic**, University of Rijeka, Croatia
Neelam Soundarajan, The Ohio State University, USA
Mario Covarrubias Rodriguez, Politecnico di Milano, Italy

10.20-10.40 **BREAK**

ICR25-Session-8-IR **Data Science**
10.40-12.20, August 27, 2025 (In-person/Remote)

Session Chair: **Aqeel Sahi1**
University of Southern Queensland, Australia

10.40-11.00 Dimensional Weighting Clustering for High-Dimensional Stock Price Data
Imran Khan[1] and Muhammad Farooq[2]
[1]Department of Computer Science, College of Science, Sultan Qaboos University, Muscat, Oman.
[2]Department of Statistics, College of Science, Sultan Qaboos University, Muscat, Oman.

11.00-11.20 Automatic Correction of Symbolic Musical Text During Optical Music Recognition
Michele Della Ventura
Accademia Musicale Studio Musica, Department of Music Technology, Treviso, Italy

11.20-11.40 Leveraging Category-Specific Features and Geographic Context for Enhanced Fraud Detection
Mahmoud Bekhit[1,2], Walayat Hussain[1,2], Abubakar Bello[3], Nur Indah Lestari[2], and Ahmed Fathalla[4]
[1] Peter Faber Business School, Australian Catholic University (ACU), Sydney, NSW 2060, Australia
[2] Faculty of Engineering and Information Technology, University of Technology Sydney (UTS), Sydney, 2007, Australia
[3] Edge Hill University, UK
[4] Department of Mathematics, Faculty of Science, Suez Canal University, Ismailia, Egypt.

11.40-12.00	Automated Contextual Tagging in Points-of-Interest Using Bag-of-Objects

11.40-12.00

Automated Contextual Tagging in Points-of-Interest Using Bag-of-Objects

Paraskevas Messios[1], Ioanna Dionysiou[2], and Harald Gjermundrød[2]

[1] Department of Computer Science and Engineering, European University Cyprus, Cyprus
[2] Department of Computer Science, University of Nicosia, Cyprus

12.00-12.20

Unmasking Fake News: A Naïve Bayes Classifier Approach to Combat Misinformation

Aqeel Sahi[1,2], Mustafa Hayawi[2], Raid Lafta[2], Shahab Abdulla[3], and Mohammed Diykh[4]

[1]School of Mathematics, Physics and Computing, University of Southern Queensland, QLD, Australia.
[2]College of Engineering, Al-Shatrah University, Thi-Qar, Iraq.
[3]UniSQ College, University of Southern Queensland, QLD, Australia.
[4]College of Education for Pure Sciences, University of Thi-Qar, Thi-Qar, Iraq.

12.20-01.20   **LUNCH BREAK (ON YOUR OWN)**

ICR25-Session-9-IR   **Smart Cities and Smart Energy**
01.20-02.40, August 27, 2025 (In-person/Remote)

Session Chair: **Omid Tafreschi**
Hochschule Darmstadt, Germany

01.20-01.40

Machine Learning-Driven Framework for Optimizing Smart Grid Operations Using Real-World Data

Mais Nijim[1], Viswas Kanumuri[1], Waseem AlAqqad[2], Hisham Al-bataineh[3], Ayush Goyal[1], David Hicks[1], and George Tuscano[1]

[1]Department of Electrical Engineering and Computer Science, Texas A&M University-Kings-Ville, USA
[2]Department of Electrical and Computer Engineering, West Virginia University, USA
[3]Department of Physics and Geosciences, Texas A&M University-Kingsville, USA

01.40-02.00

Evaluating Hardware and Software Power Measurement Tools: Assessing Accuracy in Measuring Application Energy Consumption for Data-Parallel Workloads

Urooj Asgher and Tania Malik

Technological University Dublin, Ireland

02.00-02.20	Smart-to-Sustainable Cities Correlation Analysis **Larisa Hrustek**, Katarina Tomičić-Pupek, and Neven Vrček University of Zagreb, Faculty of Organization and Informatics, Varaždin 42000, Croatia
02.20-02.40	Evaluating the Extended Kalman-Filter for the State Estimation in Low-Voltage Grids Sebastian Hallmann-Perez[1], **Omid Tafreschi**[2], and Andreas F. Raab[1] [1]Wavestone Germany AG, Leopoldstr. 28A, 80802 München, Germany [2]Hochschule Darmstadt, Schöfferstraße 3, 64295 Darmsta, Germany
2:40 -03.00	**BREAK**
03.00-04.00	**Keynote Speech:** **The Good, the Ugly, the Bad and the Quantum: The Mathematics of Cryptography in a Post-Quantum World"** **Professor María Isabel González Vasco** Universidad Carlos III de Madrid Campus de Leganés (Madrid), España