

Tuesday, August 25, 2026

Session-ICR-4 Health Informatics and Biomedical Imaging + IoT
07.40-09.20, August 25, 2026 (In-person/Remote)

Session Chair: Maryna Averkyna
Estonian Business School, Estonia

07.40-08.00 Quantifying Healthcare Decision Reliability with N-Size Datasets: A
Demographic and Incidence Metric Approach
Marco Roccetti
University of Bologna, Department of Computer Science and Engineering,
Italy

08.00-08.20 From Smear to Screen: Harnessing Machine Learning and Deep Learning
to Transform Automated Malaria Diagnosis: A Systematic Review
Ghofrane Bousbih and Suhila Sawesi
Department of Information Sciences and Technologies (IST), College of
Computing, Grand Valley State University, Michigan, United States

08.20-08.40 IoT-Based Solar Power Forecasting with LSTM, GRU, and Transformer
Models
Peter Kolok, Michal Hodoň, Lukáš Čechovič, and Ján Kapitulík
Faculty of Management Science and Informatics, University of Žilina,
Slovakia

08.40-09.00 Towards Clinically Interpretable Heart Disease Prediction: A Comparative
Analysis of Explainability Methods for Machine Learning Models
Firas Frouja, Mahdi Bedoui, and Mortadha Ghnimi
College of Computing, Grand Valley State University, USA

09.00-09.20 Interpretable Diagnosis of Short Algebra Responses with Lightweight
Features
Wiam Belouard, Davis Joseph, Sara El Kardi, and Antoun Yaacoub
Aivancity, School for Technology, Business & Society Villejuif, France

09.20-10.20

Panel: Innovations in Data Science

Moderator: **Kazem Taghva**, University of Nevada, USA

Panelists: **Marcus Grum**, University of Potsdam, Germany
Chung-Chian Hsu, National Yunlin University of Science and Technology, Taiwan
Cecilia E. Nugraheni, Catholic University, Indonesia

10.20-10.40

BREAK

Session-ICR-5

Data Science

10.40-12.40, August 25, 2026 (In-person)

Session Chair:

Kazem Taghva

University of Nevada, USA

10.40-11.00

Real-Time Student Engagement Monitoring via Eye-Region Detection Using YOLO

Francesco Mercaldo¹, Antonella Santone¹, and Fabio Martinelli²

¹Department of Medicine and Health Sciences “Vincenzo Tiberio”, University of Molise, Campobasso, Italy

²Institute of High Performance Computing and Networking, National Research Council of Italy (CNR), Rende, Italy

11.00-11.20

Utilizing Convolutional Neural Networks for Plant Disease Detection

Faisal AlZyoud¹, Monther Tarawneh², Ibrahim Altarawni³, and Ruba S Al-falah⁴

¹Computer Science Department, Isra University, Jordan

²Information Technology Department, Tafila Technical University, Jordan

³Computer Science Department, Tafila Technical University, Jordan

⁴Ministry of Local Administration, Jordan

11.20-11.40

An Artifact-Based Framework for Explainable Metaheuristic Optimization
Cecilia E. Nugraheni, Luciana Abednego, Lionov Wiratma, and Husnul Hakim

Center for Data Science and Artificial Intelligence System, Faculty of Science, Parahyangan Catholic University, Indonesia

11.40-12.00

Revisiting Zipf’s Law in ICD-10 Diagnosis Code Distributions

Sobhan Ebrahimi Azar¹, Jennifer Vanderlaan², and **Kazem Taghva**¹

¹Department of Computer Science, University of Nevada, USA

²School of Nursing, University of Nevada, USA

12.00-12.20 Data-Driven Sign Language Recognition Using Hybrid and Graph-Based Models for Real Time Edge Intelligence
Samar Mouti¹, **Samer Rihawi**¹, Hani Alchalabi¹, Sulafa Abdalla¹, and Mohamed Abushohada²
¹Liwa University, United Arab Emirates
²Gulf Medical University, United Arab Emirates

12.20-12.40 A Deep Learning Model with Rolling Variational Mode Decomposition and Multi-Dimensional Temporal Features for Traffic Flow Prediction
Chung-Chian Hsu and Shih-Mao Liu
National Yunlin University of Science and Technology, Taiwan

12.40-01.20 **LUNCH BREAK (ON YOUR OWN)**

Session-ICR-6 **Health Informatics and Biomedical Imaging**
01.20-03.00, August 25, 2026 (Remote)

Session Chair: **Azza Mohamed**
Liwa University, United Arab Emirates

01.20-01.40 Gender Differences in Perceived Health and Functional Ability Among Institutionalized Older Adults with Age-Related Macular Degeneration
Vanessa Zorrilla-Muñoz^{1,2}, Angel Parra-Sanchez¹, Ines Juaristi³, Manuel Cuerno⁴, Daniela Luz Moyano^{2,5,6}, María Silveria Agulló-Tomás^{2,5}, Jose Maria Sabater-Navarro^{1,7}, Nicolas Garcia-Aracil^{1,7}, and Gema Martinez-Navarrete^{1,8}
¹Bioengineering Institute, Miguel Hernandez University, 03202, Elche, Spain
²University Institute on Gender Studies, University Carlos III of Madrid, Getafe, 28903 Madrid, Spain
³Department of Pharmacy and Nutrition, Faculty of Biomedical and Health Science, Universidad Europea de Madrid, 28670, Villaviciosa de Odon, Madrid, Spain
⁴Department of Mathematics, CUNEF Universidad, Madrid, Spain
⁵Department of Social Sciences, University Carlos III of Madrid, 28903, Getafe, Madrid, Spain
⁶Departamento of Health Sciences, Universidad Nacional de La Matanza, San Justo, Buenos Aires, Argentina
⁷Department of Systems Engineering and Automation, Miguel Hernandez University, 03202, Elche, Spain
⁸Department of Histology and Anatomy, Miguel Hernandez University, 03550, Sant Joan d'Alacant, Spain

- 01.40-02.00** Intraoperative Real-Time IR Spectral Difference between Benign and Malignant Brain Tumours
Zina Ali Abed^{1,2}, Hadeel K. Aljobouri¹, and Yuksel Yashar Mohammed³
¹Al-Nahrain University, College of Engineering, Department of Biomedical Engineering, Baghdad, Iraq
²Gilgamish University, College of Technical Engineering, Department of Medical Instrumentation Engineering Techniques, Baghdad, Iraq
³Medical City, GHAZI AlHariri Surgical Specialty Hospital, Department of Neurosurgery, Baghdad, Iraq
- 02.00-02.20** Machine Learning-Based Prediction of Heart Disease Using a Merged UCI Dataset and Web Application
Diana Atieno Opiyo and Suhila Sawesi
 Department of Information Sciences and Technologies (IST), College of Computing, Grand Valley State University, USA
- 02.20-02.40** Conformance Checking of Healthcare Processes Using Knowledge Graphs and Data-Aware Temporal Logic
 María José Ibáñez¹, Joaquín Ezpeleta², and **Javier Fabra**²
¹Universidad de La Rioja, Spain
²Aragon Institute for Engineering Research (I3A), Universidad de Zaragoza, Zaragoza, Spain
- 02.40-03.00** Federated Imaging and Multi-Omics Integration for Rare Disease Modeling
 Ali Alyatimi^{1,2}, Ahmed Freidoon Fadhil^{3,4,5,6}, Muhammad Atif Iqbal¹, Vera Chung¹, and **Ali Anaissi**¹
¹School of Computer Science, Faculty of Engineering, The University of Sydney, Australia
²Department of Computer and Information Technology, Jazan College of Technology, Technical and Vocational Training Corporation (TVTC), Riyadh, Saudi Arabia
³James Cook University, College of Science and Engineering, Brisbane, Australia
⁴Victoria University, Brisbane, Australia
⁵Asia Pacific International College (APIC), Brisbane, Australia
⁶Kaplan Business School (KBS), Brisbane, Australia
- 03.00-03.20** **BREAK**
- 03.20-04.20** **Keynote Speech: Recent Advances in Post-Quantum Cryptography**
Professor Dr. María Isabel González Vasco
 Catedrática de Universidad, Spain