

**The 2026 International Conference on Advances in Computing Research (BAI'26)**  
**Tunis, Tunisia, May 4-6, 2026**

**Conference Program**

**Monday, May 4, 2026**

**08.20-08.55** Conference Registration (Conference Registration Desk)

**09.00-09.15** WELCOME  
**Professor Lerina Aversano**, University of Foggia, Italy  
Conference Chair

**09.20-10.20** **Keynote Speech: AI and Cybersecurity: Foundations for an AI-Native Resilient Society**

**Dr. Takeshi Takahashi**  
**National Institute of Information and Communications Technology,**  
**Japan**

**10.20-10.40** **BREAK**

**Session BAI-1** **Artificial Intelligence Applications**  
**10.40-12.20, May 4, 2026 (In-person/Remote)**

Session Chair: **Katja Saarela**  
Eficode Group Ltd, Finland

**10.40-11.00** Privacy-Preserving and Explainable Epileptic Seizure Detection through Wavelet Transforms  
Paul Tavolato<sup>1</sup>, Hubert Schölnast<sup>2</sup>, Oliver Eigner<sup>2</sup>, Antonella Santone<sup>3</sup>, Mario Cesarelli<sup>4</sup>, Fabio Martinelli<sup>5</sup>, Marta Petyx<sup>6</sup>, Patrizia Agnello<sup>6</sup>, and **Francesco Mercaldo**<sup>3,1</sup>

<sup>1</sup>Faculty of Computer Science, University of Vienna, Vienna, Austria

<sup>2</sup>Department of Computer Science and Security, St. Pölten University of Applied Sciences, Sankt Pölten, Austria

<sup>3</sup>Department of Medicine and Health Sciences “Vincenzo Tiberio”, University of Molise, Campobasso, Italy

<sup>4</sup>Department of Engineering, University of Sannio, Benevento, Italy

<sup>5</sup>Institute of High Performance Computing and Networking, National Research Council of Italy (CNR), Rende, Italy

<sup>6</sup>Istituto Nazionale per l'Assicurazione contro gli Infortuni sul Lavoro, Roma, Italy

- 11.00-11.20 Effect of a stratified sampling strategy on the assessment of process complexity metrics  
**Lerina Aversano**<sup>1</sup>, Antonella Madau<sup>2</sup>, Gianfranco Semeraro<sup>3</sup>, Chiara Verdone<sup>1</sup>  
<sup>1</sup>Department of Agricultural Science, Food, Natural Resources and Engineering, University of Foggia, Foggia, Italy  
<sup>2</sup>Department of Engineering, University of Sannio, Italy,  
<sup>3</sup>Department of Computer Science, University of Studies of Bari Aldo Moro, Bari, Italia
- 11.20-11.40 An Integrated Deep Learning Framework for Detecting Botnets, Zero-Day Exploits, and Side-Channel Attacks in Network Traffic  
**Monther Tarawneh**<sup>1</sup>, Daed Alrbaihat<sup>1</sup>, Shorouq Al-Eidi<sup>1</sup>, and Faisal Alzyoud<sup>2</sup>  
<sup>1</sup>College of ICT, Tafila Technical University, Tafila, 66110, Jordan  
<sup>2</sup>Department of Computer Science, Faculty of IT, Isra university, Jordan
- 11.40-12.00 IntegraMed: INtelligent and Transparent Explainable System for Guided Research and Analysis in MEDicine  
Vincenzo Dentamaro<sup>1</sup>, **Felice Franchini**<sup>1</sup>, Giuseppe Pirlo<sup>1</sup>, and Davide Veneto<sup>2</sup>  
<sup>1</sup>Department of Computer Science, University of Bari Aldo Moro, Bari, Italy  
<sup>2</sup>Department of Agricultural Science, Food, Natural Resources and Engineering, University of Foggia, Foggia, Italy
- 12.00-12.20 Machine Learning and Deep Learning Models for Early Identification of At-Risk Students Using OULAD VLE Data  
**Yousuf Nasser Al Husaini**<sup>1</sup>, Mohammed Abdulla Al Husaini<sup>1</sup>, Wasin Ayman Al Kishri<sup>1</sup>, Mahmood Al Bahri<sup>2</sup>, and Nur Syufiza Ahmad Shukor<sup>3</sup>  
<sup>1</sup>Arab Open University, Muscat, Oman  
<sup>2</sup>Sohar University, Sohar, Oman  
<sup>3</sup>Universiti Selangor, Malaysia
- 12.20-01.20 **LUNCH BREAK (ON YOUR OWN)**
- 01.20-02.20 **Panel: Generative AI and Education: Impacts and Solutions**  
*Moderator:* **Samah Senbel**, Sacred Heart University, USA  
*Panelists:* **Yousuf Nasser Al Husaini**, Arab Open University, Oman  
**Mahmoud Bakkar**, Abu Dhabi University, UAE  
**Neelam Soundarajan**, Ohio State University, USA

**Session BAI-2. Artificial Intelligence and the Society**  
**02.20-03.20, May 4, 2026 (Remote)**

Session Chair: **Giuseppe Pirlo**  
University of Bari Aldo Moro, Italy

**02.20-02.40** Schema-based Cognition, Embodied Cognition and Social Cognition: The Impact of AI on STEM Education  
**Neelam Soundarajan**  
Department of Computer Science and Engineering, Ohio State University, United States

**02.40-03.00** Generative AI: Challenges and Opportunities for Women in South Asia  
Qurat ul Ain Nizamani<sup>1</sup>, **Madhumita Takalkar**<sup>1</sup>, and Anita Jahid<sup>2</sup>  
<sup>1</sup>Crown Institute of Higher Education, North Sydney, NSW, Australia  
<sup>2</sup>Acknowledge Education, Surry Hills, NSW, Australia

**03.00-03.20** REEF: A Real-Time Ethical Ensemble Framework for Customer Churn Prediction in Telecommunications  
**Deshao Liu**<sup>1,2,3</sup> and Justin Hui San Zhao<sup>1,2,4</sup>  
<sup>1</sup>Asia Pacific International College (APIC), Sydney, Australia  
<sup>2</sup>Lincoln Institute of Higher Education (LIHE), Sydney, Australia  
<sup>3</sup>The Institute of International Studies (TIIS), Sydney, Australia  
<sup>4</sup>Western Sydney University, Sydney City Campus, Australia

**03.20-03.40** **BREAK**

**03.40-04.40** **Keynote Speech: Enhancing Ethical Awareness through Agent-Based AI Image Generation in Art**

**Professor Anna Farzindar**  
**Loyola Marymount University, USA**

**07.30-9.30.00** **CONFERENCE DINNER**

**Tuesday, May 5, 2026**

**Session BAI-3 Cutting Edge Artificial Intelligence + Machine Learning**  
**08.40-10.20, May 5, 2026 (In-person/Remote)**

Session Chair: **Felice Franchini**  
University of Bari Aldo Moro, Italy

- 08.40-09.00** Towards the Introduction of Quantum Machine Learning in Possible Epileptic Seizure Detection  
**Francesco Mercaldo**<sup>3,1</sup>, Hubert Schönast<sup>2</sup>, Oliver Eigner<sup>2</sup>, Antonella Santone<sup>3</sup>, Mario Cesarelli<sup>4</sup>, Fabio Martinelli<sup>5</sup>, and Paul Tavalato<sup>1</sup>  
<sup>1</sup>Faculty of Computer Science, University of Vienna, Vienna, Austria  
<sup>2</sup>Department of Computer Science and Security, St. Pölten University of Applied Sciences, Sankt Pölten, Austria  
<sup>3</sup>Department of Medicine and Health Sciences “Vincenzo Tiberio”, University of Molise, Campobasso, Italy  
<sup>4</sup>Department of Engineering, University of Sannio, Benevento, Italy  
<sup>5</sup>Institute of High Performance Computing and Networking, National Research Council of Italy (CNR), Rende, Italy
- 09.00-09.20** Quantum Machine Learning: A Comparative Review of Algorithms and Applications  
**Amani Lamine**, Ameni Mejri, and Bilel Charfi  
ESPRIT School of Engineering, Tunis, Tunisia
- 09.20-09.40** Predictive Maintenance in the Oil and Gas Industry: A Systematic Literature Review  
Abdulrahman Alteneiji<sup>1</sup> and **Mahmoud Bakkar**<sup>2</sup>  
<sup>1</sup>Abu Dhabi University, Abu Dhabi, UAE  
<sup>2</sup>Abu Dhabi University, Al Ain, UAE
- 09.40-10.00** Benchmarking Deep Learning Models for Automated Structural Defect Detection  
**Afif Beji** and Donia Lassoued  
ESPRIT, School of Engineering, Ariana, Tunisia
- 10.00-10.20** Comprehensive Analysis and Comparison of Deep Learning based Privacy-Preserving Gesture Authentication  
**Ahmed Elouni** and Rachid Zagrouba  
University of Tunis El Manar, Higher Institute of Computer Science, Intelligent Systems in Imaging and Artificial Vision, LIMTIC Laboratory, Tunisia
- 10.20-10.40** **BREAK**
- 10.40-11.00** **FREE SLOT**

11.00-12.00 **Panel: Artificial Intelligence for Cybersecurity Engineering: Will Our Assets Be Exceptionally Protected?**

*Moderator:* **Guillermo Francia, III**, University of West Florida, USA

*Panelists:* **Irene Kopaliani**, Princeton University, USA  
**Sorin Soviany**, National Institute for Research and Development in Informatics ICI-Bucharest, Romania  
**Nazli Tekin**, Erciyes University, Turkey

12.00-01.20 **LUNCH BREAK (ON YOUR OWN)**

01.20-02.40 **Keynote Speech: The Invisible Code: Why Dataset Design is the New Software Engineering**

**Professor Luis Coelho**  
Polytechnic of Porto, Portugal

02.40-03.00 **FREE SLOT**

03.00-03.20 **BREAK**

**Session BAI-4** **Artificial Intelligence Applications**  
**03.20-04.40, May 5, 2026 (Remote)**

*Session Chair:* **Aff Beji**  
ESPRIT, School of Engineering, Ariana, Tunisia

03.20-03.40 Analysis of Process Model Complexity through Time-Window Activity Aggregation  
Antonella Madau<sup>1</sup>, **Gianfranco Semeraro**<sup>2</sup>, Chiara Verdone<sup>1</sup>, and Lerina Aversano<sup>3</sup>

<sup>1</sup>Department of Engineering, University of Sannio, Benevento, Italy

<sup>2</sup>Department of Computer Science, University of Studies of Bari Aldo Moro, Bari, Italia

<sup>3</sup>Department of Agricultural Science, Food, Natural Resources and Engineering, University of Foggia, Foggia, Italy

- 03.40-04.00** Federated Breast Lesion Segmentation in Kaapana: A Synthetic Multi-Site Evaluation  
**Shqipe Salii**<sup>1,2</sup>, Markus Graf<sup>2</sup>, and Mennan Selimi<sup>1</sup>  
<sup>1</sup>Faculty of Contemporary Sciences and Technologies, South East European University, North Macedonia.  
<sup>2</sup>Faculty of Informatics, University of Applied Sciences Heilbronn, Germany
- 04.00-04.20** AI- & Heuristic-Driven Predictive Analytics for Network Traffic Optimization in 5G Wireless Networks  
**Olaoluwa Malachi** and Janet Light  
 Department of Computer Science, University of New Brunswick, Canada
- 04.20-04.40** Privacy-Preserving AI for Wearable Healthcare: A Federated Learning Framework with Unsupervised Domain Transfer  
 Eliezer Schwarz<sup>1</sup>, Rajesh Ampani<sup>2,3</sup>, Kristy Chung<sup>1</sup>, Md Mashrur Jamil Rafin<sup>1</sup>, Altamash Sayed<sup>1</sup>, Naomi Viegas<sup>1</sup>, Nabeel Niaz<sup>1</sup>, Jawad Khanafer<sup>4</sup>, and **Ali Anaissi**<sup>1,4</sup>  
<sup>1</sup>University of Sydney, Australia  
<sup>2</sup>Asia Pacific International College (APIC), Sydney, Australia  
<sup>3</sup>Peninsula Health, Victoria, Australia  
<sup>4</sup>University of Technology Sydney, Australia

## Wednesday, May 6, 2026

**Session BAI-5** **AI and the Society + Knowledge Representation + Perceiving**  
**08.00-09.20, May 6, 2026 (In-person)**

Session Chair: **Amani Lamine**  
 ESPRIT School of Engineering, Tunis, Tunisia

**08.00-08.20** The Flexiformalist Manifesto Made Manifest  
**Dennis Müller**  
 Computer Science, Friedrich-Alexander University Erlangen-Nürnberg, Germany

**08.20-08.40** Ethics and EU AI Act in Cases of Work Disability Risk and Alzheimer's Disease Risk Prediction  
 Sami Andberg<sup>1\*</sup>, Henri Terho<sup>2</sup>, and **Katja Saarela**<sup>2</sup>  
<sup>1</sup>University of Eastern Finland, Joensuu, Finland  
<sup>2</sup>Eficode Group Ltd, Helsinki, Finland

- 08.40-09.00** A Comprehensive Review of Sentiment Analysis Approaches and Challenges in Kurdish Social Media Texts  
**Fanar Rofoo**, Shareef M. Shareef, and Polla Fattah  
Salahaddin University-Erbil, Iraq
- 09.00-09.20** NLP Exploration of United Nations Discourse: Trends in Topics and Language Patterns from General Debate Speeches  
Abhishek Dhanani, Jaymit Patel, and **Samah Senbel**  
Sacred Heart University, Fairfield CT 06825, USA
- 09.20-10.20** **Keynote Speech: The AI Revolution in Computer Science Education**  
  
**Professor Dr. Nadire Cavus**  
Near East University, Cyprus
- 10.20-10.40** **BREAK**
- Session BAI-6** **Machine Learning + Cutting Edge AI + Problem Solving**  
**10.40-12.20, May 6, 2026 (Remote)**
- Session Chair:** **Monther Tarawneh**  
Tafila Technical University, Jordan
- 10.40-11.00** Integrating PDCA and CRISP-DM: A Design Science Framework for Quality Assurance and Control in Data Science Projects  
**Domingos F. Oliveira**<sup>1,2</sup> and Miguel A. Brito<sup>2</sup>  
<sup>1</sup>Departamento de Informática e Computação, Universidade de Mandume Ya Ndemufayo, Lubango, Angola  
<sup>2</sup>Centro Algoritmi, Universidade do Minho, Guimarães, Portugal
- 11.00-11.20** Breast Tumor Classification in DCE-MRI Using Hybrid Feature Extraction Techniques  
**Ali Ibrahim Shamkhi**<sup>1</sup>, Hadeel K. Aljobouri<sup>1</sup>, and Ali Hasan<sup>2</sup>  
<sup>1</sup>College of Engineering, Al-Nahrain University, Baghdad, Iraq  
<sup>2</sup>College of Medicine, Al-Nahrain University, Baghdad, Iraq

11.20-11.40

Towards a framework for acetabular fracture and coxarthrosis risk prediction integrating quantum computing, machine learning, and 3D biomechanical modeling

**Vanessa Zorrilla-Muñoz**<sup>1,2</sup>, Gema Martinez-Navarrete<sup>1,3</sup>, Nicanor Morales-Delgado<sup>3</sup>, Jonatan Garcia-Campos<sup>4</sup>, Ramon Peral-Orts<sup>5</sup>, Peter Valchanov<sup>6</sup>, Alberto Rodriguez-Martinez<sup>7</sup>, Eduardo Fernandez<sup>1,8</sup>, Jose Maria Sabater-Navarro<sup>1,7</sup>, and N. Nicolas Garcia-Aracil<sup>1,7</sup>

<sup>1</sup>Bioengineering Institute, Miguel Hernandez University, 03202, Elche, Spain

<sup>2</sup>University Institute on Gender Studies, University Carlos III of Madrid, Getafe, 28903 Madrid, Spain

<sup>3</sup>Department of Histology and Anatomy. Miguel Hernandez University, 03550, Sant Joan d'Alacant, Spain

<sup>4</sup>Behavioral of Sciences and Health. Miguel Hernandez University, 03550, Sant Joan d'Alacant, Spain

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<sup>7</sup>Department of Systems Engineering and Automation, Miguel Hernandez University, 03202, Elche, Spain

<sup>8</sup>Networking Research Centre of Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Spain

11.40-12.00

The Challenge of Machine Learning in the Study of Autoimmune Diseases in Mexico

**Ana Laura Lezama-Sánchez**<sup>1,2</sup> and Mireya Tovar Vidal<sup>2</sup>

<sup>1</sup>Secretaría de Ciencia, Humanidades, Tecnología e Innovación (SECIHTI), Mexico

<sup>2</sup> Benemérita Universidad Autónoma de Puebla (BUAP), Mexico

12.00-12.20

Federated Learning for Small Language Models: A Cutting-Edge AI Paradigm for Privacy and Efficiency

Mohammad Naji<sup>1</sup>, Ahmed Freidoon Fadhil<sup>3,4,5,6</sup>, Jawad Khanafer<sup>1</sup>, Alaa Farhat<sup>1</sup>, and **Ali Anaissi**<sup>1,2</sup>

<sup>1</sup>University of Technology Sydney, Australia

<sup>2</sup>University of Sydney, Australia

<sup>3</sup> James Cook University, College of Science and Engineering, Brisbane, Australia

<sup>4</sup>Victoria University, Brisbane, Australia

<sup>5</sup>Asia Pacific International College (APIC), Brisbane, Australia

<sup>6</sup> Kaplan Business School (KBS), Brisbane, Australia

12.20-01.40

**LUNCH BREAK (ON YOUR OWN)**

01.40-02.40

**Panel: Artificial Intelligence and Healthcare: Where are we Heading?**

*Moderator:* **Amani Lamine**, ESPRIT School of Engineering, Tunisia

*Panelists:* **Robert Polding**, IE University, Spain  
**Katja Saarela**, Eficode Group Ltd, Finland  
**Ana Laura Lezama Sánchez**, Benemérita Universidad Autónoma de Puebla, Mexico

02.20-02.40

**BREAK**