

Technical Program

Day 1 - May 20th

*[9.00-10.30] Session 1: **Context Modeling and Representation in CPS (Chair: Hanan Salam)***

1. Beyond Rule-Based Context Awareness: Large Language Models as Adaptive Cognitive Layers in Cyber-Physical Systems
2. A Knowledge Graph Framework for Interpretable Video-Based Activity Recognition
3. An Architecture for Learning Context-based Value Systems
4. An Explainable KG-RAG-Based Approach to Evidence-Based Fake News Detection Using LLMs

Coffee break [10.30-11.00]

*[11.00-12.00] **Keynote Hanan Salam: From Context to Care: Building Socially Aware Cyber-Physical Systems for Human-Centered Intelligence***

[12.30-14.00] Lunch

*[14.00-15.30] Session 2: **Security and Privacy in Context-Aware CPS (Chair: Radu Mihailescu)***

1. A Context-Aware IoT Security Framework for Elderly Care
2. Hierarchical Adversarially-Resilient Multi-Agent Reinforcement Learning for Cyber-Physical Systems Security
3. E-SMOTE: Embedding-based Oversampling with Group Awareness for Fraud Detection
4. Online Learning-Based Android Malware Detection Using API Call Graphs and Drift Detection: A Comparative Study

[15.30-16.00] Coffee Break

[16.00-17.00] Panel Discussion I

[17:00 – 18:00] Reception

Day 2 - May 21st

[9.00-10.30] **Session 3: Machine Learning for Context Recognition and Interpretation** **(Chair: Huma Zia)**

1. Context-Aware Autonomous Drone Navigation using Large Language Models (LLMs)
2. Pakistani Word-level Sign Language Recognition Based on Deep Spatiotemporal Network
3. Unsupervised Machine Learning Using Cerebrospinal Fluid Proteomics for Understanding Parkinson's Disease Progression
4. Evaluating the Synergistic Impact of Fine-Tuning and Retrieval-Augmented Encoding on Enhancing Appendicitis Diagnosis from Limited HPI Notes

[10.30-11.00] Coffee break

[11.00-12.00] **Keynote Huma Zia: AI-driven IoT solutions for smart agriculture and food security**

[12.30-14.00] Lunch

[14.00-15.30] **Session 4: Real-World Applications of Context-Aware CPS (Chair: Md Azher Uddin)**

1. I-TREES: A Context-Aware Framework for Energy-Efficient Tree Health Monitoring in Forest Internet of Trees (IoTr) Networks
2. Seeing Safety: Computer Vision for Real-Time PPE Monitoring in the Middle East Construction Sector
3. Digital Twin-Driven Innovations in SOFC Electrode Virtual Engineering
4. A Multimodal Fusion Model for Enhanced Industrial Glove-Wearing Compliance Detection

[15.30-16.00] Coffee Break

[16.00-17.00] Panel Discussion II

[17:00 – 18:00] Plenary