



International

*Innovation in Knowledge Based and Intelligent
Engineering Systems*



INVITED SESSION SUMMARY

Title of Session:

Signal Processing Algorithms and Techniques for Embedded Systems and Sensors

Name, Title and Affiliation of Chair:

Chair: Prof. **Paolo Crippa**,
Department of Information Engineering, Università Politecnica delle Marche, Ancona, Italy

Co-Chair: Dr. **Laura Falaschetti**,
Department of Information Engineering, Università Politecnica delle Marche, Ancona, Italy

Details of Session (including aim and scope):

Signal processing is a key issue in the design of many automated identification/classification embedded systems and sensors. In these electronic systems and sensors input data are typically acquired using wearable wireless circuits, the representation of the acquired data is then obtained using feature extraction algorithms, and finally a decision is made based on feature vectors. Particular interest is aimed at automated systems based on pattern classification such as medical and healthcare decision-making systems (based on ECG, EEG, sEMG, PPG signals or on virus sensing), using machine learning techniques.

This session aims to present original and unpublished results on recent advances in signal processing algorithms and techniques for automated identification/classification in embedded systems and sensors. The suggested but not limited scope of the session includes the following topics:

- Healthcare applications of pattern recognition.
- Industrial and medical applications of pattern recognition.
- ECG, EEG, sEMG, PPG based recognition systems.
- Human activity monitoring and classification.
- Healthcare applications, such as sensor-based behavior analysis, human activity recognition, ambient assisted living, disease prediction, rehabilitation.
- Biomedical signal processing, and data monitoring.
- Machine learning techniques.
- Machine learning applications for embedded systems.
- Artificial intelligent techniques and recognition.
- Fuzzy and hybrid techniques in pattern recognition.
- Statistical & structural pattern recognition.
- Neural networks.
- Parallel and distributed pattern recognition.
- Dimensionality reduction in pattern recognition.
- Signal processing and analysis.
- Special hardware architectures.
- Embedded systems.

Not only theoretical papers but also practical application papers will be welcome.

Submissions for the conference must be made as complete papers (there is no abstract submission stage) submitted as PDF documents through the [EasyChair online submission and review system](#) . The guide length for full papers is 8 to 10 pages (maximum).

Follow the [KES 2024](#) guidelines for more information on paper submission.

Publication:

Full papers will be reviewed by the IPC and if accepted and presented, they will be published in

Elsevier's [Procedia Computer Science](#) open access journal, available in **ScienceDirect** and submitted to be indexed/abstracted in **CPCI (ISI conferences and part of Web of Science), Engineering Index**, and **Scopus**.

Authors of selected papers may be invited to submit extended versions of their papers for publication as full journal papers, for example in the [KES Journal](#) or other journals.

Important dates

- Submission of papers: **4th May 2024**
- Notification of acceptance: **20th May 2024**
- Final paper publication files to be received by: **3rd June 2024**
- Conference: Seville, Spain 11 – 13 September 2024.

Main Contributing Researchers / Research Centres (tentative, if known at this stage):

Website URL of Call for Papers (if any):

Email & Contact Details:

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