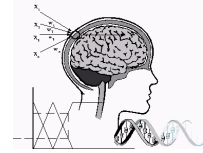# *International*

Innovation in Knowledge Based and Intelligent Engineering Systems

INVITED SESSION SUMMARY

Title of Session:
Signal Processing Algorithms and Pattern Recognition Techniques for Embedded Systems

Name, Title and Affiliation of Chair:

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

Co-Chair: Prof. **Claudio Turchetti**,
Department of Information Engineering, Università Politecnica delle Marche, Ancona, Italy

Details of Session (including aim and scope):
Signal processing and pattern recognition are key issues in the design of many automated identification/classification embedded systems. In these electronic systems input data are typically acquired using wireless sensors, 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), speech and facial recognition systems, industrial quality control systems.

This session aims to present original and unpublished results on recent advances in signal processing algorithms and pattern recognition techniques for automated identification/classification systems. 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.
- Machine learning techniques.
- Facial recognition.
- Speaker recognition: identification and verification.
- Speech recognition.
- Artificial intelligent techniques and recognition.
- Document processing 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.
- Robotics and remote sensing applications of pattern recognition.
- Shape and texture analysis.
- 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 PROSE online submission and review system.
The guide length for full papers is 8 to 10 pages (maximum).
Follow the KES 2023 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: Extended   **6 May 2023.**
- Notification of acceptance: Extended **21 May 2023.**
- Final paper publication files to be received by: **29 May 2023.**

- Conference: Athens, Greece, 6 – 8 September 2023.

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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