15th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems

Caparica, Portugal – 5-7 July 2024

Technological Innovation for Human-Centric Systems

Special Session on
Biomedical Technological Innovation for Human-Centric Systems

Scope

Cyber-Physical Systems (CPSs) effectively interconnect cyber and physical (sub)systems that process critical and sensitive biological information in real-time by using modern and specialized sensor interfaces and algorithms. Low-power, low area sensor interfaces for biomedical applications require combined analogue and digitally-assisted techniques, to further reduce the bio-system area, power and height, while increase the design robustness and data security.

Sensing, estimation, and automatic control algorithms play a central role in these systems, by providing the tools to analyze past information, towards obtaining realistic models, as well as adapt online to the predicted future behavior of dynamical systems, either in terms of the sensor interfaces or regarding the biological dynamic processes under analysis.

Human-Centric Control Systems, emphasizing Biomedical applications that may cover measurements of cognitive load, attention, and interaction types to enhance usability evaluations. Additionally, creation of novel Human-Computer Interaction (HCI) modalities by using advanced biomedical sensing can improve user experience and interactive technologies.

Session organizers

- Luís Oliveira (FCT NOVA, UNINOVA)
- Bruno Guerreiro (FCT NOVA, UNINOVA, LARSyS)
- Filipe Silva (FCT NOVA, CEFITEC)
- Hugo Gamboa (FCT NOVA, LIBPHYS, Fraunhofer Portugal)

Topics / Keywords

- Biomedical Applications of artificial intelligence (AI) and machine learning (ML) in CPSs.
- Biomedical Data security, cryptography, and privacy for CPS.
- Sensor and Actuator interfaces for Human-Centric Systems.
- Energy Efficient Biomedical Systems.
- Low power, lower area wearable devices.
- Human-Centric Sensing, Estimation and Control algorithms.

Submission procedure

Special sessions are included in the main Conference and follow the same reviewing process.
Short abstracts submission (100-150 words): 2 Feb 2024
Full papers submission: 1 Mar 2024
Acceptance Notice: 15 Apr 2024
Final version Submission: 26 Apr 2024

Acceptance of papers is based on the full paper (up to 12 pages). Each paper will be evaluated by three members of the International Program Committee. Being DoCEIS a doctoral conference, the first author of each paper must be a PhD student.

When submitting on the web site, you should indicate the name of the special session. Submission procedure via Easychair available on: https://doceis.dee.fct.unl.pt/, with copy by email to the chairs of the special session.