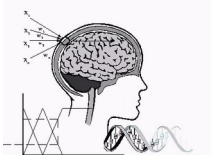
International

Innovation in Knowledge Based and Intelligent Engineering Systems



INVITED SESSION SUMMARY

Title of Session:

Intelligent Diagnosis and Monitoring of Systems: Methods, Tools, and Applications

Name of Chairs: Prof. Gianfranco Lamperti and Prof. Marina Zanella

Department of Information Engineering, University of Brescia, Italy

Details of Session:

The aim of this session is to present current research and experience reports of researchers and practitioners in the field of automated diagnosis and monitoring based on Artificial Intelligence methods and techniques. Topics of interest concern all the aspects that are somewhat related to diagnosis and monitoring of systems, including reconfiguration, fault-adaptive control, fault recovery, and repair of physical systems, as well as testing and debugging of software systems.

More specifically, this session is looking forward to submissions on any diagnosis-related topic, including (but not limited to):

- Formal theories and computational methods for diagnosis, such as monitoring, detection and isolation, testing, repair and therapy, reconfiguration, fault tolerance, diagnosability, and manifestability.
- Models for diagnosis, including continuous, discrete-event, qualitative, hybrid, probabilistic, behavioral and functional models with abstraction, and effective models of complex systems.
- Computational issues related to combinatorial explosion of space and time, exploitation of structural and hierarchical knowledge, focusing strategies and heuristics, resource-bounded reasoning, preprocessing, and real-time computation.
- Diagnosis and monitoring processing, including strategies for measurement selection, sensor allocation, embedded diagnosis, distributed diagnosis, preventive diagnosis, fault-adaptive control, usability and explainability of diagnosis software tools.
- Real-world applications and integrated systems in a large variety of domains, including transportation, space and aeronautics, robotics, manufacturing, energy, networks, services, and, last but not least, health care.

Website URL (if any):

Email & Contact Details:

Prof. Gianfranco Lamperti, Email: gianfranco.lamperti@unibs.it, Tel: +39 030 3715491

Prof. Marina Zanella, Email: marina.zanella@unibs.it, Tel: +39 030 3715596