

IEEE ICNSC 2023

October 25-27, 2023, Marseille, France



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Proposal for Special Session at ICNSC'23

Session Title: Discrete event systems and artificial intelligence

Description and Aim:

Real discrete-event systems are integrated as computer and communication networks with the technology of internet of things, and, consequently, is becoming much larger and more complex. Their optimal schedule, supervisory control, fault diagnose and state estimation tend to be more challenging although we have powerful discrete-event modeling tools, such as Petri nets, Automata, and Markov chains.

Machine learning with powerful data information extraction and processing capabilities in artificial intelligence has developed rapidly, and successful digital intelligence applications such as ChatGPT and AlphaGo have emerged. Evidently, extracting and processing information effectively from massive data is becoming more and more urgent for discrete-event systems. This provides us the possibility for the integration of discrete-event modeling tools and machine learning, where discrete-event models can help to exact effective data characteristics, and machine learning can be in charge of digging knowledge from big data. As a result, efficient methods could be proposed for the difficult problems of real complex systems. Some interesting results are obtained and a lot of problems remain open.

The potential topics include (but are not limited to):

This invited session focuses on the most significant recent developments on the topic of “Discrete event systems and machine learning” . Topics include, but are not limited to,

- 1) advanced methods in modeling discrete event system,
- 2) scheduling methods for discrete event system,
- 3) model checking and state estimation,
- 4) machine learning in discrete event system theory,
- and 5) other related works in discrete event systems and machine learning.

Expected number of papers: 6

Organizers:



GDR Groupement de recherche
MACS Modélisation, Analyse et
Conduite des Systèmes dynamiques



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