INTERNATIONAL

INVITED SESSION SUMMARY

Title of Session:
Process Mining for Agent and Multi-Agent Systems

Name, Title and Affiliation of Chair:
Assoc. Prof. (ret.) Bruno Blaskovic, University of Zagreb, Croatia, (bruno.blaskovic@fer.hr)
Assist. Prof. Frano Škopljanac-Mačina, University of Zagreb, Croatia, (frano.skopljanac-macina@fer.hr)
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Details of Session (including aim and scope):
The goal of this organised session is to bring together researchers and industry in the areas of MAS design and process mining and to bridge the gap between academia, education, and industry. On the one hand we have the discipline of business process mining, whose goal is to discover, analyse, and repair business processes.

The behaviour of agents or MAS can also be interpreted as a process execution. Each process consists of the sequence of events that describe the behaviour of the agent or MAS and are recorded in the logs.

By applying process mining or behaviour mining techniques to event log data, it is possible to discover behavioural process descriptions that can be used for further analysis (e.g. human-readable diagrams that provide deeper insight into process behaviour, performance analysis, verification, automated test generation, model checking, process repair ...) .

There is a mutual connection between MAS behaviour and process mining:

(1) mining MAS behaviour with process mining technology and

(2) process mining with MAS, where business process mining algorithms are replaced by a methodology based on MAS.

Topics include, but are not limited to:

Mining agents and MAS behaviour
Process mining for model checking of MAS and agents
Extending business process mining to MAS behaviour mining
Specification mining of MAS behaviour
Process mining and automated test generation for MAS
Theoretical and practical aspects of agent and MAS synthesis
Process mining algorithms
Unification of process mining and behaviour mining for MAS through common algorithms
Techniques and tools for process repair
Formal methods and MAS behaviour (process algebras, Petri nets, finite discrete automata)
Applied formal methods for conformance and concolic testing of process mining challanges
MAS behaviour and intelligent tutoring systems
Behavioural analysis for automated assessment in e-learning systems using formal concept analysis and combinatorial testing
MAS for testing automated assessment processes in e-learning systems
Analysis of student behaviour using behaviour mining techniques
Behaviour mining of Ontology-based adaptive learning systems
Behaviour mining of MAS for adaptive educational systems
Behaviour mining of blockchains and smart contracts with machine learning, game theory and deep learning
Behaviour mining in the context of new trends and considerations in autonomous ship technology
Software-managed hybrid wireless networks mining in the enterprise environment
Process mining for social inclusion software development
Process mining for adaptive user interfaces
Extending data mining technology with process behaviour
LLM and AI technologies for MAS behaviour mining
Success stories and case studies of MAS and process mining technologies

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

Website URL of Call for Papers (if any):

Email & Contact Details: