



International

*Innovation in Knowledge Based and Intelligent
Engineering Systems*



INVITED SESSION SUMMARY

Title of Session:

Artificial Intelligence and Multi-Agent Systems for Industry 4.0 AI&MASI 4.0

Chair

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Details of Session:

Multi-Agent System (MAS) refers to a mechanism that is used to create goal-oriented autonomous agents in a shared environment and have communication and coordination capabilities. This goal-oriented mechanism supports distributed applications used for solving different problems. MAS are often used to model and simulate complex systems in different area based on artificial intelligence technology. Taking into account the technological evolution of the last decades, we would like to show that Multi-Agent Systems based on Artificial Intelligence (AI) and Industry 4.0 explore recent advancements in manufacturing technology. Artificial intelligence can be considered the leading component of industrial transformation and allows for improving productivity and creating innovation opportunities in different ways such as Industry 4.0 which presents the next generation of intelligent manufacturing. Artificial intelligence is at the heart of Industry 4.0, offering an increase in productivity while improving respect for the environment.

The session covers theoretical works, successful applications, technical papers describing significant and original research on all aspects of the theory and practice of autonomous agents and multi-agent systems and novel use of AI to see its real impact in the next generation of industrial systems such as Industry 4.0 and their impacts on realizing industrial and factories goals. In addition to approaches based on Evolutionary algorithms, smart manufacturing, Transportation problems, scheduling problems, and combinatorial optimization problems.

TOPICS OF INTEREST

The coverage of this special session AI and AI4.0 2023 includes, but is not limited to, the following subjects:

- Multi-Agent systems
- Heuristics and Metaheuristics
- Evolutionary algorithms
- Swarm intelligence algorithms
- Scheduling problems
- Distributed problem solving
- Vehicle routing problem
- Combinatorial optimization problems
- Transportation problems
- Logistic and Supply chain management
- Applications of Industries 4.0
- Smart manufacturing
- Transportation
- Internet of Things (IoT)
- Artificial Intelligence
- Distributed problem solving
- Evolutionary algorithms and Metaheuristics
- Modeling and optimization
- Multi-objective optimization

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