

Special Section on:

## Industrial Agents: Concepts, Technologies, and Applications

Rapid technology advances combined with the increasing digitalization bring new opportunities but also put new challenges to modern industrial systems. Software agents can be used to address the multi-angled needs of envisioned Industrial Cyber-Physical Systems (ICPS) in several domains e.g. in manufacturing, smart cities, energy, logistics, etc. To do so, their interplay in industrial settings needs to be better understood and assessed from a holistic viewpoint that includes technical as well as business aspects. Such directions put forward an interdisciplinary area of research that takes advantage of the latest advances in artificial intelligence, ICPS, software agents, communication technologies, enterprise integration, etc. and utilizes them to address complex requirements stemming from the need for high digitalization, cooperativeness, performance, and agility. The latter increasingly include the technological directions in conjunction with socioeconomic and business angles that need to be integrated from the beginning at design and not only as an afterthought in products, services, and infrastructures. Aspects pertinent to the digital transformation as well as the success of Industrial Agents e.g. user-centered design, cost, training, human-to-machine intelligent collaboration, workplace satisfaction, ergonomics and safety, lifelong learning, need to be factored in. This special section aims to cover key aspects in the area of software agents and their industrial applicability, that covers technologies, design, development, deployment, maintenance, experimentation with agent-based systems.

We encourage all researchers working in this area to submit papers to this Special Section. Topics of interest include, but are not limited to:

- ✓ Agents in Industrial Cyber-Physical Systems
- ✓ Agent Testbeds and Deployments in Industry
- ✓ Interoperability and Standardization for Agents
- ✓ Performance Evaluation of Agent Approaches
- ✓ Big data and Distributed Analytics with Agents
- ✓ Design Patterns for Agent-based Systems
- ✓ Modeling and Engineering of Agent-based Systems
- ✓ Metrics for assessment of Agent-based Approaches
- ✓ Agent-based Simulation
- ✓ Agent Trials in Smart Cities, Energy, Manufacturing, etc.
- ✓ Agent Systems and Services in Edge / Fog / Cloud
- ✓ Security, Reliability, and Safety of Agent solutions
- ✓ Engineering of Agent-based Cyber-Physical Systems
- ✓ Artificial Intelligence and Machine Learning with Agents
- ✓ Realizing IIoT/Industry4.0 Approaches with Agents
- ✓ Requirements and Success Factors of Agents in Industry
- ✓ Technologies & Tools for realizing Agent-based Systems
- ✓ Deployment and Management of Agent-based Systems
- ✓ Business/Operational Implications of Agent Approaches
- ✓ Digital Transformation and Training for Agent Systems

### Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines “Information for Authors” in the IEEE- IES website: <http://www.ieee-ies.org/pubs/jestie> Please submit your manuscript in electronic form through: <https://mc.manuscriptcentral.com/jestie-ieee/>

On the submitting page, in the pop-up menu of the manuscript type, select: “**SS on Industrial Agents**”, then upload all your manuscript files following the instructions.

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### Timetable

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**October 31, 2020**

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**April 2021**

Publication Date:

**July 2021**