IEEE SMC'19
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SPECIAL SESSION ON
"Semantic Cyber-Physical Systems for Industry 4.0"

SPECIAL SESSION CODE
i44xj

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Session area: Cybernetics

Session description

Cyber-Physical Systems are enhancing several industry sectors through a higher coordination between computational and physical elements. Nevertheless, challenges remain at multiple levels:

● coping with platform hardware/software heterogeneity and computational resource restrictions;

● device communication and interoperability, requiring protocols and systems with high autonomy and flexibility in information storage, management and discovery;

● real-time event detection and characterization: dynamic context-aware data analysis should leverage resources from available nearby devices in an opportunistic way and produce human- and machine-understandable event annotations;

● high-level frameworks and applications for resource-constrained and/or real-time platforms, integrating personal devices (smartphones, tablets, wearables) into industrial control networks to put humans in the loop.

Semantic technologies provide a possible solution paradigm, fostering open knowledge-based architectures exploiting automated reasoning for information management and decision making.

The goal of this special session is to collect the most recent and advanced research on topics such as the Semantic Web of Things, opportunistic computing and semantic-enabled systems where devices, agents and people interact, specifically in Industry 4.0 settings. Innovative applications and case studies are also welcome, including semantic-based approaches for smart manufacturing, supply chain management, collaboration and co-design to name a few.

Keywords

- Semantic-based Web of Things architectures for industrial settings
- Semantic-enabled protocols and services for Industry 4.0 applications
- Semantic-based decision support systems for Industry 4.0
- Integration of AI technologies in the Industry 4.0

- Knowledge representation and reasoning in cyber-physical systems
- Intelligent adaptive object interaction for Industrial Internet of Things
- Knowledge discovery in decentralized and collaborative Industry 4.0 platforms
- Machine Learning in resource-constrained systems
- Semantic-enhanced predictive maintenance techniques
- Big Data architectures and solutions for manufacturing scenarios

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SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **March 31, 2019:** **http://controls.papercept.net/conferences/scripts/start.pl**. In PaperCept, click on the **SMC 2019 link "Submit a Contribution to SMC'19" and follow the steps.**

All papers must be written in English and should describe original work. For guidelines, please follow the the SMC website link http://smc2019.org/information_for_authors.html

DEADLINES

March 31, 2019: deadline for paper submission

June 7, 2019: notification of paper acceptance/rejection

July 7, 2019: deadline for final camera-ready papers.