



Call for Papers
SS09 - Hyper-automation in Industry 4.0

Organized and Co-Chaired by
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◆ **FOCUS.** This Special Session focuses on the emerging role of hyper-automation in Industry 4.0 and beyond, as the nexus among autonomous robotics, machine vision, and learning. Hyper-automation is currently representing a true digital transformation implying the combination of multiple and heterogeneous intelligent systems to fulfil complex needs, while increasing both the human expertise and the automation experience. The main advantages of hyper-automation include lower automation costs, improved IT-business alignment, and enhanced security and governance. Hyper-automation is rising with the evolution of automation technologies. In particular, the recent advances in intelligent sensing are leading to the design of immediate and accurate environment perception systems; the innovative Machine Learning and Artificial Intelligence techniques are entailing the possibility of elaborating large amounts of data to make and support decision processes; the cutting-edge trend in developing safe, secure, and time-sensitive communication protocols are encouraging the outline of large and distributed networked architectures. All these elements boost the exploitation of hyper-automated systems within the smart industrial context for the purpose of reducing the expenses, increasing the productivity and improving the efficiency via automation in all the processing stages. The concept of hyper-automation, thus, encompasses multiple versatile and enabling technologies including also process mining, Robotic Process Automation, digital twin of the organisation, optical character recognition, and natural language processing. For all these reasons, hyper-automation appears a promising and avant-garde framework for the Industry 4.0 and beyond, encouraging the investigation of its complexity and potentialities. This Special Session aims to assess the obtained results in the field of hyper-automation, focusing on implementations, case studies and prototype systems, as well as to address future research directions.

◆ **TOPICS**

- ◆ hyper-automation: concepts, components, and case studies
- ◆ business and process-oriented integration for hyper-automated systems
- ◆ AI decision making based on advanced IoT analytics in the context of hyper-automation
- ◆ hyper-automation integration with existing systems
- ◆ Natural Language Processing and intra-active systems
- ◆ fail-safe, reactive, and resilient hyper-automated systems
- ◆ hyper-automated complex heterogeneous systems

◆ **AIM.** The aim of the Special Session is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of hyper-automation. In particular, the focus will be on the multiple enabling technologies supporting the rising of such a framework in different fields of application and, in particular, in the Industry 4.0 context.

◆ **CONFERENCE FORMAT.** The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations, as well as work-in-progress (WiP) and industry practice sessions.

◆ **AUTHOR'S SCHEDULE (2022)**

◆ **Regular and special sessions papers**

Submission deadline April 1
 Acceptance notification May 6
 Deadline for final manuscripts June 17

◆ **Work-in-progress/Industry practice papers**

Submission deadline May 13
 Acceptance notification June 10
 Deadline for final manuscripts June 17