Free online event

DAUSY SEMINAR

November 28 - 29, 2023
3:00 - 5:30 PM

Virtually on MS Teams

DAUSY and PoliBa Ph.D. students will receive 1.5 ECTS for the attendance

Schedule:

Part 1: Distributed component based design of industrial automation software. In this part we review the motivations for the shift from monolithic PLC systems to decentralized logic and present the progress in this field happening in the last decade or so.

Part 2: Formal methods for designing and validating safety critical automation systems. In this part we will visit formal methods and supporting tools for performing automatic verification of automation systems. We will focus on the closed-loop approach that fits best cyber-physical systems.

Speaker:

Valeriy Vyatkin (IEEE Fellow)) is Chaired Professor of Dependable Computations and Communications at Luleå University of Technology on joint appointment as full professor of IT in Industrial Automation at Aalto University. Previously he has been with Cambridge University, U.K., as a visiting scholar, and on permanent academic appointments with The University of Auckland, New Zealand, Martin Luther University of Halle-Wittenberg, Germany, and with Taganrog State University of Radio Engineering (TSURE), Russia, and postdoc at Nagoya Institute of Technology, Japan.

He received the Candidate of Science (Ph.D.) degree in applied computer science from TSURE, in 1992, Dr. Eng. degree in electrical engineering from Nagoya Institute of Technology, Japan in 1999, Dr. Sc. (Eng.) degree in information and control systems in 1999 from TSURE, and Habilitation degree from the Ministry of Science and Technology of Sachsen-Anhalt, Germany in 2002. His research is on applied artificial intelligence in industrial automation with emphasis on: swarm intelligence for decentralised decision making in industrial cyber-physical systems; multi-agent software architectures enabling industrial applications of swarms; AI-assisted system and software engineering; autonomy enabled by declarative knowledge modelling, neural networks, reasoning; industrial systems flexibility and reconfigurability enabled by real-time reasoning and logical inference. The application areas motivating the research include smart energy, oil production, automated material handling, building management systems, data centres, industrial robotics and reconfigurable manufacturing He has been a co-PI of many European and national research projects. He serves as Vice-president on Technical Activities of the IEEE Industrial Electronics Society since 2022 and Associate Editor of IEEE journals: IEEE Transactions on Industrial Informatics, IEEE Transactions on Industrial Cyber-Physical Systems, IEEE Open Journal of Industrial Electronics Society, IEEE Journal on Emerging Topics in Industrial Electronics. In 2012 he was awarded Andrew P. Sage best IEEE Transactions Paper Award.

Registration:

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