ERC WEBINAR SERIES OF THE FACULTY OF ENGINEERING

EMERGING COOPERATIVE AUTONOMOUS SYSTEMS – INFORMATION FOR CONTROL AND ESTIMATION (MINERVA)

Themistoklis Charalambous

Nowadays, attention is drawn towards a new generation of intelligent mobile cooperative autonomous systems (CASs), built with increasingly powerful sensors that allow them to cooperate with other autonomous systems and humans, in order to accelerate the industrial ecosystem and better exploit the potential of flexible automation. The cooperation of autonomous systems, which is an emerging technology in many areas (e.g., intelligent transportation systems and factory automation) is done over a wireless network. The use of a wireless network to connect spatially distributed systems enables flexible architectures with reduced installation and maintenance costs to existing applications, while supporting the development of new applications that would otherwise be impossible. The unprecedented tight coupling between control and communication, due to the use of a shared wireless network and distributed decision-making to orchestrate such systems, introduces new challenges. Current modular design approaches and incremental improvements can only provide limited performance gains and may result in inefficient solutions, which may lead to failures during practical deployments. To effectively leverage the vast space of possibilities enabled by CASs, we need to fundamentally rethink how functionally complex CASs are interconnected and operate cooperatively.

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Live Webinar

University of Cyprus
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Speaker



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Themistoklis Charalambous received his BA and M.Eng in Electrical and Information Sciences from Trinity College, Cambridge University. He completed his PhD studies in the Control Laboratory, of the Engineering Department, Cambridge University in 2009. Following his PhD, he joined the Human Robotics Group as a Research Associate at Imperial College London for an academic year (September 2009-September 2010). Between September 2010 and December 2011, he worked as a Visiting Lecturer at the Department of Electrical and Computer Engineering, University of Cyprus. Between January 2012 and January 2015, he worked at the Division of Decision and Control of the Department of Intelligent Systems at the Royal Institute of Technology (KTH) as a Postdoctoral Researcher. Between April 2015 and December 2016, he worked as a Postdoctoral Researcher in the Unit of Communication Systems at the Department of Electrical Engineering of Chalmers University of Technology. In January 2017, he joined the Department of Electrical Engineering and Automation, School of Electrical Engineering, Aalto University as a tenure-track Assistant Professor. In September 2018, he was awarded the Academy of Finland Research Fellowship and in July 2020 he was appointed as a tenured Associate Professor. In September 2021, he joined the Department of Electrical and Computer Engineering, University of Cyprus as a tenure-track Assistant Professor and he remains associated with Aalto University as a Visiting Professor. In May 2022, he was awarded a European Research Council (ERC) Consolidator Grant. In April 2023, he was appointed as a Visiting Professor of the FinEst Center for Smart Cities.

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