IEEE RTSI 2018 – Track 1 – 2.2

ROBOTICS AND AUTONOMOUS SYSTEMS

Robots and autonomous systems which are equipped with advanced embedded control capabilities are becoming more and more present in our everyday life. Such systems are one of the most appealing and natural application areas for the Distributed and Networked Control, the Artificial Intelligence, and, more in general, the Cyber-physical communities. Recent research advances in these domains are indeed fostering key enabling technologies, such as decisional and long term autonomy, adaptability, cognitive and real-world interaction abilities. They in turn are strongly pushing towards a new paradigm shift, where applications including robotic and autonomous systems will be everywhere, form efficient industrial production and logistics to fast and secure urban transportation, from the domestic and entertainment domains to rescue-and-restore services. The scope of the session is to focus on innovative recent achievements in all these fields and on their potential cross-cutting potential applications.

Adriano Fagiolini

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Short Curriculum Vitae

Adriano Fagiolini is an Assistant Professor at the University of Palermo, Italy. He received the M.S. degree in Computer Science Engineering in 2004 and the Ph.D. degree in Robotics and Automation in 2009 from the University of Pisa. He has been a Visiting Researcher at the University of California at Riverside, in 2015 and in 2017, in the Department of Mechanical Engineering. He teaches Automatic Control Systems and Mobile Cooperating Robotic Systems at the University of Palermo, in the Department of Energy, Computer Science Engineering and Mathematical Models since 2012. He enrolled in the Summer Student Programme at the European Center for Nuclear Research (CERN), Geneva, in 2002, and in the International Curriculum Option of Doctoral studies in Hybrid control for complex, distributed, and heterogeneous embedded systems, in 2007. In 2008, he led the team of the University of Pisa during the first European Space Agency's Lunar Robotics Challenge, which resulted in a second place prize for the team. He was one of the recipients of the IEEE ICRA's Best Manipulation Paper Award in 2005. His main research interests are in distributed coordination and misbehavior detection for systems of autonomous robots (including automated cars and aircrafts), coexisting in shared environments and interacting with each other according to sets of partially known "social behaviors", or common rules. His scientific interests also include distributed algorithms for consensus on set-valued Boolean information and for data clustering and estimation.

Lucia Pallottino

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Short Curriculum Vitae

Lucia Pallottino is Associate Professor at the Centro di Ricerca "E. Piaggio" and the Dipartimento di Ingegneria dell'Informazione at the University of Pisa. She received the "Laurea" degree in Mathematics in 1998and the Doctoral degree in Robotics and Industrial Automation in January 2002. She is deputy Director of Centro di Ricerca "E. Piaggio" (since Jan. 2017) and Chair of the IEEE Robotics & Automation Society Italian Chapter (I-RAS) (since Jan. 2015). She is Associate Editor of the IEEE Robotics and Automation Letters and of the IEEE Transaction on Robotics.Her main research interests within Robotics are in motion planning and control of humanoid robots and of multiple nonholonomic vehicles, optimal control of constrained systems, coordination of multi–robot vehicles, distributed algorithm for multi-vehicles management and quantised control.