IEEE CSS Italy Chapter

Road2CDC Seminar Series

AI-empowered Robots for Better Surgery: Lesson Learned in three EU-funded projects

Prof. Riccardo Muradore, PhD

Department of Engineering for Innovation Medicine, University of Verona

May, 28rh 2024 – Università degli Studi di Padova

Department of Information Engineering

Aula Magna "A. Lepschy"

Starting time 12:00 – Ending time 13:00

Abstract:

The development of robotic systems equipped with a certain level of autonomy for use in critical scenarios, such as an operating room, necessarily requires a perfect integration of multiple cutting-edge technologies. A cognitive architecture is usually needed to integrate and "orchestrate" different modules such as perception, situation awareness, planning and decision making, in order to help operators perform specific tasks. This talk covers experience gained in three EU funded projects in the healthcare sector where robotics and artificial intelligence need to be seamlessly integrated to design reliable, safe and effective systems.

Riccardo Muradore is Associate Professor at the Department of Engineering for Innovation Medicine of the University of Verona. He received the Laurea degree in Information Engineering in 1999 and the Ph.D. degree in Electronic and Information Engineering in 2003 both from the University of Padova (Italy). He held a post-doctoral fellowship at the Department of Chemical Engineering, University of Padova, from 2003 to 2005, working on statistical control and monitoring. Then he spent three years at the European Southern Observatory in Munich (Germany) as control engineer working on adaptive optics systems. In 2008 he joined the ALTAIR robotics laboratory, University of Verona (Italy). He was the coordinator of the Horizon 2020 project SARAS (Smart Autonomous Robotic Assistant Surgeon, https://saras-project.eu/) and he is the local coordinator for UNIVR of the Horizon Europe GEYEDANCE project (https://geyedance.eu/) and the coordinator of the Horizon Europe EIC-Transition ROBIOPSY project (https://robiopsy-project.eu/). His research interests include control and system theory, teleoperation, robotics, surgical robotics, predictive maintenance, networked control systems, and adaptive optics.

Website: https://www.dimi.univr.it/?ent=persona&id=5039&lang=it

IEEE-CSS Italy Chapter