Title:
Towards robotic systems that can self-regulate their autonomy level.

Abstract:
Robotic systems that are deployed in safety and time-critical applications such as Search and Rescue, hazardous materials handing (e.g. nuclear waste decommissioning) and hazardous environment inspection, are still predominately teleoperated with little or no autonomy used to assist the human operator. This is because the nature of these tasks requires specific human abilities such as critical decision making based on incomplete information; specialised knowledge; acting in the face of uncertainty; and moral dilemmas. Hence, current deployment of such robots always requires a human in the loop.
In this talk, I will discuss how we can blend the capabilities of the human operator and the AI's in order to complement each other and increase the performance of such human-robot systems. We will also discuss how the key to achieving this is Mixed-Initiative variable autonomy (i.e. robotic systems that can self-regulate their autonomy level on demand). Lastly, we will discuss the difficulty of experimentally evaluating such systems.

Bio:
Manolis Chiou is a research fellow in the Extreme Robotics Lab, University of Birmingham UK and the National Centre for Nuclear Robotics (NCNR). His work is highly interdisciplinary combining Artificial Intelligence, Human-Robot-Interaction, human factors and psychology in order to make remotely teleoperated robots (e.g. in Search and Rescue) more autonomous and efficient. More specifically he is interested in robotic systems that can regulate their level of autonomy (e.g. variable autonomy in the form of Mixed-Initiative) in order to actively assist human operators.

He received his PhD in Robotics from the University of Birmingham in 2017 and his MSc in Computational Intelligence from the University of Sheffield in 2012. He has a B.Eng. in automation engineering from the University of West Attica, 2011. He has been actively involved in teaching, public communication and engagement of robotics. Among others, delivering the “robotics master-classes” for the Royal Institution of Great Britain and co-leading the Birmingham autonomous robotics club in international robotics competitions.