Title: 5G and Foundational AI models for next generation of Robotics Applications

Speaker: Bharadwaj Amrutur

Abstract:

Generative AI, especially large language models, along with 5G promise exciting new tools to develop next generation robotics applications for the benefit of our society. Examples include service robots to assist elderly with their daily activities, robot teams to fulfil orders in a warehouse etc. However the requirement of safe and effective operations, in unstructured environments, co-inhabited with humans still a far out goal. We believe smart tele-operation with supervision from human operators, along with edge/cloud hosted AI might provide a path towards achieving near-term deployments. Such robots will need to understand language and gestures as well as pick up other non-verbal cues from the scene to deliver effective services. In this talk, we will give an overview of our ongoing efforts towards achieving this goal in terms of gesture recognition, language conditioned actions, and network enabled perception as well as a custom tooling we have developed to co-simulate networks and robots (CORNET).

Brief Bio:

Bharadwaj Amrutur is a Professor in Indian Institute of Science (IISc). He obtained his BTech degree in Computer Science and Engineering from IIT Bombay in 1990 and his MS and PhD in Electrical Engineering from Stanford University in 1994 and 1999 respectively. His current research interests are in Tele-Autonomous Intelligence – where advanced communication networks along with AI and Robotics can potentially transform multiple sectors. He chairs the Robert Bosch Center for Cyber-Physical Systems and is also the Director-Executive of Artpark – a not-for-profit company promoted by IISc under the NM-ICPS mission of DST.