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Speaker: Alap Kshirsagar, PhD student

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Title: Human-Robot Object Handovers

Abstract:
Object handovers are a central aspect of human-robot collaboration in both industrial and domestic environments. Tasks such as surgical assistance, housekeeping, rehabilitation assistance and collaborative assembly require a robot to give objects to a human (robot-to-human handover) and take objects from a human (human-to-robot handover). These seemingly simple actions involve coordination in both time and space of hand movements, grip forces, body postures, and other non-verbal cues like head and eye gaze. We are investigating formal specifications and automated synthesis of robot controllers for handovers. We are also studying the role of non-verbal gestures in object handovers. This talk will focus on two recent projects: robot controller for human-robot handovers using Signal Temporal Logic, and robot gaze behaviours in human-robot handovers.

Bio:

Alap Kshirsagar is a doctoral student supervised by Dr. Guy Hoffman at Cornell University in USA. He is visiting Ben-Gurion University as a part of the Research Academic Internship Program supervised by Dr. Armin Biess. He has a Master of Technology degree in Mechanical Engineering from the Indian Institute of Technology (IIT) Madras and a Bachelor of Technology degree in Mechanical Engineering from IIT Bombay. He was a visiting student researcher at UC Berkeley in 2016 and RWTH Aachen, Germany in 2017.