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Title: Cyberphysical Systems in Robotics - Challenges and Achievements

Abstract: Teleoperation over the Internet, robot control using distributed sensors and distributed computational resources in smart environments, and cooperative mobile robot manipulation are examples of cyberphysical systems in robotics where communication and/or computational resources are constrained. The scientific challenge is to design control schemes taking into account such resource constraints in first place, and preferably even include fair resource sharing mechanisms among different applications. Within this talk we will highlight the scientific and technological challenges in the context of cyberphysical systems from a robotics application point of view and present some recent achievements in the area.