

# Disruptive Robotics and Cyber Physical Control

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May 29, 2018

Enabling technologies e.g., high-speed computing, high throughput and low-latency telecommunications, cloud computing, advanced sensor and actuator technologies along with new generation machine learning methods – open radically new perspectives in every corner of robotics. Since the early 1960's, we can observe distinct evolution phases in robotics with silent transitions. In contrast, recent times the classical engineering fields like computer-, electrical- and mechanical engineering are getting closer forming a new super-discipline Cyber-Physical System (CPS) Engineering. The evidence is right in front of our eyes: Self-driving cars, drones, human-like service robots and traditional industrial robots all break the borders and bring the embodied AI to reality.

Cyber-Physical Control (CPC) as a multidisciplinary research field investigates the applications of existing theories and methodologies in the context of regulating CPS at different levels from low-level sensing and actuation to system-level orchestration. The lecture discusses various aspects of modern robotics in a CPC context through the research activity of the Antal Bejczy Center for Intelligent Robotics.