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Cognitive Robotics
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Abstract

We argue that cognitive systems only make sense in the context of an embodied agent, such as a robot. To build systems that can represent the external environment, reason about future activities and automatically acquire models of the environment there is a need to consider basic problems on representations, architecture, perception-action integration, learning, planning and autonomy, the role of language, and methods for systems integration. To manage the complexity of the problem three topical demonstrators have been designed: the explorer, the playmate and the philosopher.
The basic problems will be discussed, and the three demonstrators will be presented both in terms of main challenges and progress on systems design. Results from operational systems will also be presented. The presentation will discuss aspects of mapping, manipulation, human-robot interaction and systems engineering.

Speaker Biography

Henrik I. Christensen is the KUKA Chair of Robotics and the Director of the Georgia Tech. Center for Robotics and Intelligent Machines. Dr. Christensen earned M.Sc. EE and Ph.D. EE degrees from Aalborg University Denmark, 1987 and 1990, respectively. He does research on mapping, estimation, systems integration and HRI. Dr. Christensen has published more than 230 contributions across vision, robotics and AI. He served as the founding chairman of the European Network of Excellence in Robotics (EURON, 1999-2006) which involves more than 200 universities across EU member states.