Karlsruher Institut für Technologie

KOLLOQUIUM

Informatik-Sonderkolloquium

Human-Centered Autonomous Robots

Prof. Stefan Schaal, Director of Robotics, Google X

In the current wave of the “new artificial intelligence”, robotics is considered as one of the major players for a modern future of humans. But robotics has been surprisingly reluctant to allow for discontinuous jumps in progress, despite several attempts to push such progress with major funding for large size research and development teams. It appears, that robotics requires more structure due to physics and closed loop information processing than other topics in artificial intelligence, which can benefit more directly from huge data engineering and massive computing for training. This talk will outline several topics that our research group has characterized as important ingredients for autonomous robotics. These topics include ideas about common useful representations, learning from demonstration, reinforcement learning, inverse reinforcement learning, learning reactive control, learning how to switch behaviors, perception-action cycles, and, in general, an attempt to find a coherent framework for autonomous robots that will at some point share our human environments.

Stefan Schaal received his MS and Ph.D. from the Technical University of Munich in Mechanical Engineering and Artificial Intelligence. Afterwards, he became a Postdoctoral Fellow at the MIT Department of Brain & Cognitive Science and the MIT AI Lab, an Invited Researcher at the ATR Human Information Processing Research Laboratories in Japan, and an Adjunct Assistant Professor at the Georgia Institute of Technology and at the Department of Kinesiology of the Pennsylvania State University. In 1997, Stefan became Professor of Computer Science, Neuroscience, and Biomedical Engineering at the University of Southern California. In 2011, Stefan joined the Max-Planck-Insitute for Intelligent Systems in Germany as a Founding Director where he led the Autonomous Motion Department. Currently, Stefan is a Director of Robotics at Google X. Stefan's research interests include topics of statistical and machine learning, neural networks, computational neuroscience, functional brain imaging, nonlinear dynamics, nonlinear control theory, and biomimetic robotics. He applies his research to problems of artificial and biological motor control and motor learning, focusing on both theoretical investigations and experiments with human subjects and anthropomorphic robot equipment. He has co-authored over 400 papers in refereed journals and conferences. He is a co-founder of the "IEEE/RAS International Conference and Humanoid Robotics", and a co-founder of "Robotics Science and Systems". He is a member of the German National Academic Foundation (Studienstiftung des Deutschen Volkes), the Alexander von Humboldt Foundation, the Society for Neuroscience, the Society for Neural Control of Movement, the IEEE, and AAAS.

KIT – Campus Süd, Fakultät für Informatik, Am Fasanengarten 5, 76131 Karlsruhe, www.informatik.kit.edu

Montag, 19.11.18, 17:30 Uhr

Hörsaal am Fasanengarten (Geb. 50.35), Am Fasanengarten 5, 76131 Karlsruhe