



TECHNISCHE FAKULTÄT

VORTRAG

Mittwoch, 8. Mai 2019, 16:30 Uhr
Georges-Köhler-Allee Gebäude 101
Seminarraum 101-02-016/018

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Neuro-inspired robotic body perception and action

Unlike robots, humans learn, adapt and perceive their body as a unity during interaction with the environment. To enable robots with the same functionalities in complex changing scenarios, perception and action should be revisited. In this talk, I will describe robot perception as a flexible process inspired by Predictive Coding, one of the most promising theories of the inner functioning of the brain. Perception and action becomes two sides of the same process: to continuously approximate reality with the generative models that have been learned by interaction. Basically, the perceived reality is adjusted by minimizing the error between the expected sensation and the observed one.

Following this framework, developed under Selfception project (www.selfception.eu), I will present different tests with multisensory humanoid robots, such as active object learning, adaptive perception, robust reaching and self/other distinction. I will further discuss the advantages and challenges of this approach that combines modern machine learning with algorithmic priors. Finally, I will portrait the future of neuro-inspired embodied Artificial Intelligence and its relation with neuroscience and psychology.

Gastgeber: Prof. Dr. Rolf Backofen, Prodekan