HUMANITY CENTERED ROBOTICS INITIATIVE

BROWN

Marc Toussaint
MIT/University of Stuttgart

"Physical Reasoning and Admissible Symbols"

Wednesday, April 18, 2018
12:00-1:00
CIT 477 Lubrano

Abstract: Physical reasoning and sequential manipulation planning are a core challenge in AI. Solving such problems requires combined reasoning on a symbolic level, as well as a continuous geometric+kinematic+physical motion level. In this talk I discuss an optimization-based approach and focus on three core questions: 1) What are "admissible symbols" to make resulting sub-problems tractable? 2) How can a hierarchy of model fidelities guide search? 3) How can we describe the space of reachable configurations given a skeleton?

Marc Toussaint is currently visiting scholar at MIT, until summer 2018. He is full professor for Machine Learning and Robotics at the University of Stuttgart since 2012. Before he was assistant professor and leading an Emmy Noether research group at FU & TU Berlin. His research focuses on the combination of decision theory and machine learning, motivated by fundamental research questions in robotics. Specific interests are combining geometry, logic and probabilities in learning and reasoning, and appropriate representations and priors for real-world reasoning and learning.

Host: George Konidaris/HCRI