



ROBOTICS SEMINAR

FRIDAY, March 12, 2021

3:30-4:30 p.m.

Join Zoom Meeting

Meeting ID: 957 2467 9972

Passcode: RISEM



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Design and Analysis of Open-Source Educational Haptic Devices

Abstract: . Autonomous and anthropomorphic robots are poised to play a critical role in manufacturing, healthcare and the services industry in the near future. However, for this vision to become a reality, robots need to efficiently communicate and interact with their human partners. Rather than traditional remote controls and programming languages, adaptive and transparent techniques for human-robot collaboration are needed. In particular, robots may need to interpret implicit behavioral cues or explicit instructions and, in turn, generate appropriate responses. In this talk, I will present ongoing work which leverages machine learning (ML), natural language processing and virtual reality to create different modalities for humans and machines to engage in effortless and natural interactions. To this end, I will describe Bayesian Interaction Primitives - an approach for motor skill learning and spatio-temporal modelling in physical human-robot collaboration tasks. Further, I will discuss our recent work on language-conditioned imitation learning and self-supervised learning in interactive tasks. The talk will also cover techniques that enable robots to communicate information back to the human partner via mixed reality projections. To demonstrate these techniques, I will present applications in prosthetics, social robotics, and collaborative assembly.

Brief Bio: Heni Ben Amor is an Assistant Professor for robotics at Arizona State University. He is the director of the ASU Interactive Robotics Laboratory. Ben Amor received the NSF CAREER Award, the Fulton Outstanding Assistant Professor Award in 2018, as well as the Daimler-and-Benz Fellowship in 2012. Prior to joining ASU, he was a research scientist at Georgia Tech, a postdoctoral researcher at the Technical University Darmstadt (Germany), and a visiting research scientist in the Intelligent Robotics Lab at the University of Osaka (Japan). His primary research interests lie in the fields of artificial intelligence, machine learning, robotics, and human-robot interaction. Ben Amor received a Ph.D. in computer science from the Technical University Freiberg, focusing on artificial intelligence and machine learning. More information can be found at: <http://henibenamor.weebly.com>

Host: David Held

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