



HUMANITY
CENTERED
ROBOTICS
INITIATIVE



BROWN

Amy LaViers and Catie Cuan RAD Lab, University of Illinois

“On Expressive Robotic Systems (aka Dancing Robots) with an Example”



**Friday, March 9, 2018
12:00-1:00
CIT 115**



Abstract: How do you get a robot to do the disco? Or perform a cheerleading routine? What’s the value in a “dancing” robot? Often, roboticists talk about the need for “expressive movement” that aligns with human perception for successful coexistence. Generally, it’s thought that such “expressivity” is a decorative layer on top of basic robotic “function”. Indeed, this idea is present in the first usage of the term “robot” in Capek’s science fiction play, *RUR*, where the characters discuss the differences between humans and robots in this light; indeed, this origin confuses the science around this aspect of robotics. Thus, a formalism for the concept of expression – and its fundamental relationship with function – is needed to inform robotic system design. The theme of Function/Expression explicated in the Laban/Bartenieff Movement System, a taxonomy utilized by dance artists and somatic practitioners, will be discussed to illuminate a starting point. From there, the talk will present several ongoing projects in the Robotics, Automation, and Dance (RAD) Lab that are developing such expressive robotic systems and measuring their effect on humans, including the work of an ongoing artist-in-residence.

Catie Cuan is a performer, choreographer, and technologist. She is interested in the physical manifestations of digital identities and the friction between discrete structures and qualitative human phenomena. At the 2018 Conference for Research on Choreographic Interfaces, she is presenting a work in progress titled *Time to Compile*. *Time to Compile* is a collaboration with Dr. Amy LaViers and the Robotics, Automation, and Dance (RAD) Lab at the University of Illinois, Urbana-Champaign. She is now a Research Technician at the RAD Lab through this work. Her performing credits include the Metropolitan Opera, the Lyric Opera of Chicago, and numerous Off-Broadway shows. She was also previously the Vice President at Color + Information, a digital creative agency, after roles at Bain & Company, Google, and YouTube.

Amy LaViers is an assistant professor in the Mechanical Science and Engineering Department at the University of Illinois at Urbana-Champaign and director of the Robotics, Automation, and Dance (RAD) Lab where she develops robotic algorithms inspired by movement and dance theory. She is the recipient of a 2015 DARPA Young Faculty Award (YFA). She has worked in the area of advanced manufacturing, through an industry-university consortium, the Commonwealth Center for Advanced Manufacturing (CCAM), defense, and healthcare, and forged interdisciplinary ties with the UVA and UIUC Dance Programs and the Laban/Bartenieff Institute for Movement Studies, where she completed a Certification in Movement Analysis (CMA) in 2016. Prior to UIUC she held a position as an assistant professor for two years in systems and information engineering at the University of Virginia.

Host: Peter Haas and Sydney Skybetter/HCRI