ROBOTICS SEMINAR

FRIDAY, March 27, 2020

1305 Newell Simon Hall

3:30-4:30 pm

Chelsea Finn

Assistant Professor

Computer Science &

Electrical Engineering

Stanford University

Training Versatile Robots

Abstract:. Recent progress in robot learning has demonstrated how robots can acquire complex manipulation skills from perceptual inputs through trial and error, particularly with the use of deep neural networks. Despite these successes, the generalization and versatility of robots across environment conditions, tasks, and objects remains a major challenge. And, unfortunately, our existing algorithms and training set-ups are not prepared to tackle such challenges, which demand large and diverse sets of tasks and experiences. In this talk, I will discuss these challenges pertaining to generalizable robot learning, and describe how we might rethink our algorithms and data pipelines to serve these goals. This includes algorithms that can solve more than 30 distinct tasks with a single policy, approaches for learning from diverse cross-institutional datasets, and methods that can leverage scalable sources of video data, including videos of humans.

Brief Bio: Chelsea Finn is an Assistant Professor in Computer Science and Electrical Engineering at Stanford University. Finn's research interests lie in the ability to enable robots and other agents to develop broadly intelligent behavior through learning and interaction. To this end, Finn has developed deep learning algorithms for concurrently learning visual perception and control in robotic manipulation skills, inverse reinforcement methods for scalable acquisition of nonlinear reward functions, and meta-learning algorithms that can enable fast, few-shot adaptation in both visual perception and deep reinforcement learning. Finn received her Bachelors degree in Electrical Engineering and Computer Science at MIT and her PhD in Computer Science at UC Berkeley. Her research has been recognized through the ACM doctoral dissertation award, an NSF graduate fellowship, a Facebook fellowship, the C.V. Ramamoorthy Distinguished Research Award, and the MIT Technology Review 35 under 35 Award, and her work has been covered by various media outlets, including the New York Times, Wired, and Bloomberg.

Host: Wenzhen Yuan

For Appointments: Stephanie Matvey (smatvey@andrew.cmu.edu)