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“End-User Programmable General-Purpose Robots”



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10-11am
Metcalf 305 Dome Room

Robots that can assist humans in everyday tasks have the potential to improve people's quality of life and bring independence to persons with disabilities. A key challenge in realizing such robots is programming them to meet the unique and changing needs of users and to robustly function in their unique environments. Most research in robotics targets this challenge by attempting to develop universal or adaptive robotic capabilities. This approach has had limited success because it is extremely difficult to anticipate all possible scenarios and use-cases for general-purpose robots. Instead, my research aims to develop robots that can be programmed in-context and by end-users after they are deployed. To that end, my students and I have been developing new techniques and tools that allow intuitive and rapid programming of robots to do useful tasks. In this talk I will introduce some of these techniques and tools, demonstrate their capabilities, and discuss some of the challenges in making them work in the hands of potential users and deploy them in the real world.

Maya Cakmak is an Assistant Professor at the University of Washington, Computer Science & Engineering Department, where she directs the Human-Centered Robotics lab. She received her PhD in Robotics from the Georgia Institute of Technology in 2012, after which she spent a year as a post-doctoral research fellow at Willow Garage, one of the most influential robotics companies. Her research interests are in human-robot interaction, end-user programming, and assistive robotics. Her work aims to develop robots that can be programmed and controlled by a diverse group of users with unique needs and preferences to do useful tasks. Maya's work has been published at major Robotics and AI conferences and journals, demonstrated live in various venues, and has been featured in numerous media outlets. Tools that she and her students developed are currently being used by robotics companies like Savioke and Fetch Robotics. She received an NSF CAREER award in 2016.