HUMANITY CENTERED ROBOTICS INITIATIVE

BROWN

Hema Koppula
Cornell University

"Understanding People from RGBD Data for Assistive Devices"

Friday April 18, 2014
12:00 – 1:30pm
Barus and Holley Room 190

With the advances in 3D sensing technology and their wide availability, we are able to collect enormous amounts of data about people in various modalities such as 2D images, 3D depths and sound. New algorithms that can extract meaningful information from this data would enable new applications for improving aspects of daily living significantly. Examples include robotic assistants, health-care monitoring systems, self-driving cars, gaming, and mobile devices.

In this talk, I will present my work on understanding human environments and activities from RGBD data. I will describe our learning algorithms which capture the rich spatio-temporal context from the environment and discuss how our models capture human intentions and the functional representation of the objects. This enables assistive robots to anticipate what humans are going to do in near future and reactively respond with appropriate actions. Finally, I will elaborate on directions for on-going and future work. This includes how the robot can learn to perform activities and do anticipatory planning for collaborating with humans in complex day-to-day tasks.

Hema Koppula is a PhD candidate in the Department of Computer Science at Cornell University and a member of the Robot Learning Lab. Her research lies at the intersection of machine learning, computer vision and robotics: she is interested in understanding people from visual data to build smart assistive devices. She received her B.Tech. and M.Tech. in Computer Science from IIT Kharagpur in 2008. She spent the next two years at Yahoo! Labs working on machine learning applied to sponsored search and ranking. She was awarded the best student paper at RSS 2013 and her work was recently featured in popular press such as FOX News Studio B, BBC World News, Discovery Channel and several others.

This research talk is part of the HCRI's series of presentations that showcases diverse and groundbreaking research undertaken by leaders in science, technology, design, and impact of robotics on society.

For more information on this talk, contact hcri@brown.edu or visit hcri.brown.edu.