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Featuring Dr. Ayanna Howard, named a 2003 "Top 35 Innovators Under 35" by MIT Technology Review

Intelligent Robotics for Assistive Healthcare and Therapy

Learning from interaction, whether through tele-operation or physical demonstration, has shown to be a successful technology for engaging people with robotic systems. Through human interaction, even complex humanoid robots have learned to perform a variety of challenging tasks, such as retrieving common household objects for their human companions. Yet, there are still open areas of need that these robotic systems can address in the home environment. Through robotic interaction, quality of life for older adults and/or people who experience disabling circumstances could be improved, by, for example, executing grasping, pick-and-place, and fetch-and-carry tasks. It could similarly aid clinicians and healthcare professionals providing treatment to children. There are numerous challenges though that must be addressed - determining the roles and responsibilities of both human and robot, developing interfaces for humans to interact with robots that does not require extensive training, and developing methods to allow the robot to learn from their human counterparts. In this talk, I will discuss research methodologies focused on developing intelligent robotics for healthcare applications. I will present methods in which robot assistants learn to perform self-care tasks in the home and discuss research that integrates robots and toys for interactive play useful for child rehabilitation.