



A Knights Welcome To: Dr. Cindy Bethel



Date: Tuesday January 8, 2019

Time: 2:30pm-3:30pm

Location: HEC-356

(Harris Engineering Building)

Bio: Cindy L. Bethel, Ph.D. (IEEE and ACM Senior Member) is an Associate Professor in the Computer Science and Engineering Department and the Billie J. Ball Endowed Professor in Engineering at Mississippi State University (MSU). She is the Director of the Social, Therapeutic, and Robotic Systems (STaRS) lab and a Research Fellow with the MSU Center for Advanced Vehicular Systems Human Performance Group and the MSU Social Science Research Center. She is an affiliated faculty with the Department of Psychology. Dr. Bethel is the Chair of an interdisciplinary Robotic Systems Working group she established at MSU that has 39 active members from all different disciplines across campus. She is a member of the Academy of Distinguished Teachers in the Bagley College of Engineering at MSU. She also was awarded the 2014-2015 ASEE New Faculty Research Award for Teaching. Cindy has managed over \$8 million dollars in grant funding since starting as an Assistant Professor at Mississippi State University in 2011. She was a NSF/CRA/CCC Computing Innovation Postdoctoral Fellow in the Social Robotics Laboratory at Yale University. From 2005 - 2008, she was a National Science Foundation Graduate Research Fellow and was the recipient of the 2008 IEEE Robotics and Automation Society Graduate Fellowship. She graduated in August 2009 with her Ph.D. in Computer Science and Engineering from the University of South Florida. Her research interests include human-robot interaction, human-computer interaction, robotics, and artificial intelligence. Her research focuses on applications associated with robotic therapeutic support, information gathering from children, and the use of robots for law enforcement, search and rescue, and military.

“Human-Centered Computing for Healthcare Applications”

A common issue in healthcare today is providing supportive technologies to enhance quality of life and improve medical care interventions. This presentation will discuss the use of robots and interfaces in healthcare applications. More specifically, Therabot is a robotic dog that Dr. Bethel and her students have created for use as a therapy support system for clinical therapy sessions and for home therapy practices and was sponsored by the National Science Foundation (NSF). Therabot uses artificial intelligence and responsive design through the use of conductive fabrics and sensors to respond to touch and provide support. It is expected to improve therapy interventions associated with trauma and other mental health disorders and provide a companion that would be especially helpful in eldercare scenarios to reduce loneliness and depression in addition to increasing social interactions. Another technology that is shown to be beneficial is the use of robots for gathering information. An NSF-sponsored research project that involves the use of robots as intermediaries for gathering sensitive information from children has been quite effective. The children ages 8-12 and 12-17 indicated that they would be more comfortable sharing information with a robot than another person. It is expected this will also be helpful in healthcare applications. Children and elderly tend to not want to share the details of their current health symptoms with medical professionals. Using a similar technique that was deployed in robots to gather information about children's experiences with bullying, it is expected this will help support intake and other situations in which it is critical to obtain accurate information from the patient about their current health status. The presentation will conclude with some of Dr. Bethel's background, goals, efforts associated with interdisciplinary and collaborative research, and visions for the Disability, Aging, and Technology Cluster.

