Abstract:
An important body of research in human-computer interaction creates richer and more effective interactions between users and systems by interpreting natural language input, both in voice and text form--intelligent personal assistant applications such as Apple's Siri and Google Now are celebrated successes of this. In this talk, I will discuss the development of systems which bring natural language as an essential element of the interaction to several new and complex domains. A common goal in these systems is that they interact with users to encourage useful and helpful actions and discourage harmful ones. We have encountered numerous challenges in developing these systems, ranging from intelligent interfaces to social media to aid in cyberbullying prevention, to virtual environments that educate students in medicine. These problems are “Google proof”: scraping Wikipedia or a large corpus of English text data will not provide answers. I will outline approaches to natural language understanding that I think will meet these challenges; the proposed approaches attempt to penetrate through patterns found at the syntactic layers of expressions to a deeper, semantic-conceptual layer of the language by collecting and applying commonsense knowledge structures.

Bio:
Dr. Jamie C. Macbeth is a postdoctoral fellow in Clemson’s Human-Centered Computing Division, working under Dr. Larry Hodges in the Virtual Environments Group. Previously, he was a postdoctoral research associate with the Humans and Automation Laboratory in the Department of Aeronautics and Astronautics at MIT. He holds a Ph.D. in Computer Science from the University of California, Los Angeles, an M.S. in Physics from Stanford University, and a B.S. in Physics from Brown University. His broad interests include human-computer interaction, human factors of software engineering, and natural language understanding. He is a member of ACM and IEEE.