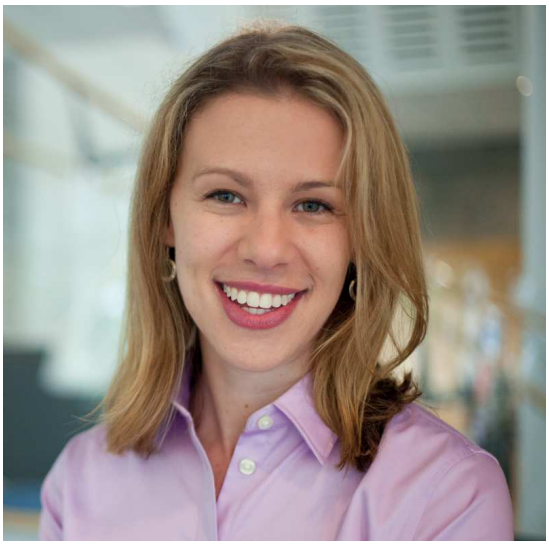
UNIVERSITY AT ALBANY
State University of New York

College of Engineering and Applied Sciences
Computer Science Department

Colloquium



Date and time: Thursday, Dec. 3, 2015, 2:00 p.m.
Venue: BA223

Title: **Human-Centered Computing: Using Speech to Understand Behavior**

Speaker: **DR. EMILY MOWER PROVOST**
Assistant Professor, Computer Science and Engineering, University of Michigan
url: http://web.eecs.umich.edu/~emilykmp/

Abstract: Emotion has intrigued researchers for generations. This fascination has permeated the engineering community, motivating the development of affective computational models for classification. However, human emotion remains notoriously difficult to interpret in part due to the presence of complex emotions, emotions that contain shades of multiple affective classes. Proper representations of emotion would ameliorate this problem by introducing multidimensional characterizations of the data that permit the quantification and description of the varied affective components of each utterance. In this talk I will discuss methods to characterize emotion, focusing on quantifying the presence of multiple shades of affect and avoiding the need for hard-labeled assignments. This set of techniques can be used to determine a most likely assignment for an utterance, to map out the evolution of the emotional tenor of an interaction, or to interpret utterances that have multiple affective components. I will demonstrate how these representation techniques can be used as a component of classification and how they provide insight into the temporal flow of emotion in speech.

I will also touch on our ongoing speech-based assistive technology research, highlighting our work estimating speech quality for individuals with aphasia. I will describe our interactive tablet-based software, which is based on picture description tasks, and illustrate how we have used this platform to collect a new

dataset of aphasic and healthy speech. We have demonstrated that we can use these data to automatically estimate speech quality at levels comparable to an average human evaluator. Finally, I will touch on our work classifying mood for individuals with bipolar disorder using naturally collected cell phone data.

Speaker's brief bio: Emily Mower Provost received her B.S. in Electrical Engineering (summa cum laude and with thesis honors) from Tufts University, Boston, MA in 2004 and her M.S. and Ph.D. in Electrical Engineering from the University of Southern California (USC), Los Angeles, CA in 2007 and 2010, respectively. Emily is a member of Tau-Beta-Pi, Eta-Kappa-Nu, and a member of IEEE and ISCA. She has been awarded the National Science Foundation Graduate Research Fellowship (2004-2007), the Herbert Kunzel Engineering Fellowship from USC (2007-2008, 2010-2011), the Intel Research Fellowship (2008-2010), and the Achievement Rewards For College Scientists (ARCS) Award (2009 – 2010), and the Oscar Stern Award for Depression Research (2015). Her research interests are in human-centered speech and video processing, multimodal interfaces design, and speech-based assistive technology. The goals of her research are motivated by the complexities of human emotion generation and perception.