Keynote Lecture

Professor Gregory D. Abowd

School of Interactive Computing, GVU Center and Health Systems Institute, Georgia Institute of Technology, Atlanta, Georgia, USA
abowd@gatech.edu

About the speaker

Gregory D. Abowd (pronounced AY-bowd) is the Distinguished Professor of Interactive Computing in the College of Computing at Georgia Institute of Technology, Atlanta, USA. His research interests lie in the intersection between Software Engineering and Human-Computer Interaction. Specifically, Dr. Abowd is interested in ubiquitous computing (ubicomp) and the research issues involved in building and evaluating ubicomp applications that impact our everyday lives. In the College of Computing, he is a member of the School of Interactive Computing and the GVU Center and the GeorgiaTech Broadband Institute.

Dr. Abowd directs the Ubiquitous Computing Research Group in the College of Computing and GVU Center. This effort started with the Future Computing Environments research group in 1995, and has since matured into a collection of research groups, including Dr. Abowd's own group. The FCE Group now consists of a federation of many faculty in the College of Computing.

Dr. Abowd received the degree of B.S. in Mathematics and Physics in 1986 from the University of Notre Dame. He then attended the University of Oxford in the United Kingdom on a Rhodes Scholarship, earning the degrees of M.Sc. (1987) and D.Phil. (1991) in Computation from the Programming Research Group in the Computing Laboratory. From 1989-1992 he was a Research Associate/Postdoc with the Human-Computer Interaction Group in the Department of Computer Science at the University of York in England. From 1992-1994, he was a Postdoctoral Research Associate with the Software Engineering Institute and the Computer Science Department at Carnegie Mellon University.

Measuring behavior in the home environment

Since 2000 at Georgia Tech, we have been fortunate to have a unique laboratory environment, the Aware Home (http://www.awarehome.gatech.edu), for the study of technology in the domestic setting. The research agenda at the Aware Home spans many topics, but at the core of our work is the assumption that one day there will be the opportunity and the necessity for home environments to possess a greater awareness of the activities and whereabouts of its inhabitants. In this talk, I will provide an overview of the various research activities that support the agenda of attaining better awareness and representation of behavior in the domestic setting as well as the motivating health applications that leverage this awareness. Those health applications address the general topic of chronic care management, ranging from aging in place to diabetes management to support for developmental disabilities.

Much of the research in activity recognition has used special purpose sensors, ranging from costly optical and acoustical sensors to inexpensive motion and physiological sensors. These solutions have opened up the possibility of creating awareness, but have largely ignored some of the practical issues of widescale deployment. I will present a new idea, *infrastructure mediated sensing,* that leverages the built-in capabilities of a home to provide much of the low-level sensing that enables recognition and measurement of behavior. This idea promises to take activity recognition research in the home to a new level.