



Spring 2012 Colloquium

Temple University

Computer and Information Sciences

Towards Freeing Drivers from Phone Distractions

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Abstract:

In this talk, I will describe a system that lets mobile phones detect whether they are used by a driver and then lay out our vision for apps and phone interfaces that reduce driver distraction. Our detection system addresses the difficult problem of distinguishing between a driver and passenger using a mobile phone. It leverages the existing car stereo infrastructure, in particular, the speakers and Bluetooth network for audio ranging. This approach produces an estimate of the phone's distance from the car's center, from which a passenger or driver classification can be made. Through experiments with two types of phones and two different cars, we found that this approach achieves a classification accuracy of about 95%, is robust against background sounds such as music and wind, and imperceptible for many people. I will then describe, our ongoing work on applications that build on this system to reduce distractions by nudging drivers to reduce calling or by offering improved interfaces.

Bio:

I received my PhD degree in computer science in 2004 from the University of Colorado and joined the faculty of Rutgers University. I have conducted research on smart spaces at the IBM T.J. Watson Research Center and received an NSF CAREER award for my work on location privacy. I have also received a Schwarzkopf Prize for Technological Innovation as part of the ORBIT testbed team and a Rutgers Board of Trustees Research Fellowship for Scholarly Excellence. My research has appeared on CNN national TV as well as in the New York Times, MIT Technology Review, CBC Online, and many other media outlets.