Dr. Thad Starner. (Georgia Institute of Technology).

Reading Your Mind: Interfaces for Wearable Computing

Today's mobile devices have inherited many of the characteristics of desktop computing - including the assumptions that the user's full attention can be focused on the interface and that the user has the manual dexterity to spare for it. Such interface assumptions, combined with misuse, result in users who have car accidents due to texting while driving or who walk into doors while answering an e-mail.

Instead of having interfaces that consume attention, why can't mobile devices be like a well-trained English butler who needs so little direction to satisfy his client's needs that he seems to read minds? Inspired by this concept, we will demonstrate mobile interfaces that provide valuable services while requiring little effort by the user. In addition, we describe preliminary work on an interface that directly "reads your mind."

Informed by our own wearable computer use since 1993, my group investigates what mobile users claim to do with their devices, what they actually do with their devices, what they want to do, and the mobile interface challenges that interfere with the fulfillment of users' desires. We are currently exploring a successful modern incarnation of a wearable computer, the RIM Blackberry equipped with a Bluetooth earpiece, focusing on its mini-QWERTY keyboard. We have developed a technique called Automatic Whiteout++ that can eliminate 25% of mini-QWERTY users' "fat finger" typing errors, without using a dictionary. We will also discuss Dual Purpose Speech agents, which "listen in" on the user's conversation to help schedule appointments, remember small "notable" pieces of information, and communicate with remote assistants. Finally, we will describe our preliminary research on BrainSign, a direct brain interface where the user communicates through natural language.

Possible photos:
http://www.cc.gatech.edu/~thad/microoptical-big.jpg
http://www.cc.gatech.edu/~thad/thad-co3.jpg
http://www.cc.gatech.edu/~thad/thad-co3-aware-home.jpg
http://www.cc.gatech.edu/~thad/microoptical-co3.jpg
http://www.cc.gatech.edu/~thad/asl-thad-cap.jpg
http://www.cc.gatech.edu/~thad/wearable-thad-kristin.jpg
http://www.cc.gatech.edu/~thad

Thad Starner is an Associate Professor at Georgia Institute of Technology's School of Interactive Computing. In 1993, Dr. Starner was perhaps the first to integrate a wearable computer into his everyday life as an intelligent personal assistant. His group's prototypes and patents on mobile MP3 players, mobile instant messaging and e-mail, gesture-based interfaces, and mobile context-based search foreshadowed now commonplace devices and services. Thad has authored over 100 scientific publications with over 100 co-authors on mobile Human Computer Interaction (HCI), pattern discovery, human power generation for mobile devices, and gesture recognition, and he is a founder and current co-chair of the IEEE Technical Committee on Wearable Information Systems. His work is discussed in public forums both in the United States and internationally, such as CNN, NPR, the BBC, CBS's 60 Minutes, The New York Times, Nikkei Science, The London Independent, The Bangkok Post, and The Wall Street Journal.