

## **THAD E. STARNER, Ph.D.**

Associate Professor of Computing  
Georgia Institute of Technology

**Research Interest:** Wearable/mobile computing interfaces and pattern recognition.

### **Educational Background**

B.S.	1991	MIT, Cambridge MA	Computer Science
B.S.	1991	MIT, Cambridge MA	Brain and Cognitive Science
M.S.	1995	MIT Media Laboratory, Cambridge MA	Media Arts and Sciences
Ph.D.	1999	MIT Media Laboratory, Cambridge MA	Media Arts and Sciences

### **Professional Employment**

Associate Professor of Computing, Georgia Tech (Atlanta, GA), 2006-present  
Assistant Professor of Computing, Georgia Tech (Atlanta, GA), 1999-2006  
Visiting Professor, ECE, Swiss Federal Inst. of Technology (ETH) (Zurich, Switzerland), 2002  
Research Assistant, MIT Media Laboratory (Cambridge, MA), 1993-1999  
Associate Scientist, Speech Systems Group, BBN (Cambridge, MA), 1992-1993

### **Experience Summary**

Thad Starner is a wearable computing pioneer, being the first person to advocate wearing a computer as an everyday personal assistant and having done so in his own life since 1993. He is a founder of the MIT Wearable Computing Project and the IEEE Technical Committee on Wearable Information Systems, which supervises the annual International Symposium on Wearable Computers. Professor Starner's most recent work demonstrates a new speech interface paradigm where the user can control a mobile computer directly through his conversation with another party. Other recent work has shown that desktop typing speeds are achievable on small mobile keypads. Trained in computer vision, Professor Starner's work on computer recognition of American Sign Language (ASL) is one of the most cited works on gesture recognition. Recent extensions of this work have shown the feasibility of an ASL tutor for deaf children and gesture interfaces appropriate for mobile devices. Other previous work includes an early computer vision-based augmented reality, large vocabulary on-line cursive handwriting recognition, and face recognition (Eigenfaces). He has published over 100 scientific articles on mobile computing, pattern recognition, and augmented reality. Dr. Starner has led major projects for NSF, DARPA, and various industrial consortiums and has participated in research programs for NIDRR and NIH.

### **Five Relevant Publications**

K. Lyons, C. Skeels, T. Starner, C. Snoeck, B. Wong, D. Ashbrook. "Augmenting Conversations Using Dual-Purpose Speech." User Interface and Software Technology (UIST), Santa Fe, NM, November 2004. pp. 237-246

K. Lyons, T. Starner, D. Plaisted, J. Fusia, A. Lyons, A. Drew, and E. Looney. "Twiddler Typing: One-Handed Chording Text Entry for Mobile Phones." CHI, Vienna, Austria, 2004.

P. Lukowicz, J. Ward, H. Junker, M. Staeger, G. Troester, A. Atrash, T. Starner, "Recognizing Workshop Activity Using Body Worn Microphones and Accelerometers", Pervasive Computing 2004. pp. 18-22.

D. Ashbrook and T. Starner, "Using GPS to Learn Significant Locations and Predict Movement Across Multiple Users", Personal and Ubiquitous Computing, Volume 7 (1), 2003.

T. Starner, J. Weaver, and A. Pentland. "Real-Time American Sign Language Recognition Using Desk and Wearable Computer Based Video." IEEE Trans. on Pattern Anal. and Mach. Intelligence 20(12), December 1998.

### **Other Publications**

T. Starner and B. Rhodes, "Wearable Computers." In Encyclopedia of Human-Computer Interaction, W. Bainbridge (editor), Berkshire Publishing, 2004.

T. Starner and J. Paradiso, "Human Generated Power for Mobile Electronics." In Low Power Electronics Design, C. Piguet (editor), CRC Press, 2004.

T. Starner, B. Leibe, D. Minnen, T. Westeyn, A. Hurst, and J. Weeks, "Integration of Wireless Gesture Tracking, Object Tracking, and 3D Reconstruction in the Perceptive Workbench", In Machine Vision and Applications, Volume 14 (1), pp. 59–71, 2003. (Prior version was best paper award VR2000).

T. Starner, J. Makhoul, R. Schwartz, and G. Chou. "On-line Cursive Handwriting Recognition Using Speech Recognition Methods." IEEE Proceedings International Conference on Acoustics, Speech, and Signal Processing, pp. 125-128, April 1994.

A. Pentland, T. Starner, N. Etcoff, A. Masoiu, O. Oliyide, and M. Turk, "Experiments with Eigenfaces." Looking At People Workshop, IJCAI'93, France, August 1993.

### **Synergistic Activities**

Conference activities include: General Chair, ISWC2000 and various positions 1997-2005; recent program committees: UIST2005, ICMI2004, SIGGRAPH2005 E-tech, Ubicomp2004; journal reviews: PAMI, IJHCS, Pervasive Computing, TVIS, Pattern Recognition Letters; NSF panels

Leadership positions include: Director, Georgia Tech Contextual Computing Group (1999-2005), Founded and led MIT Wearable Computing Project (1993-1999).

Collaborative research projects: DARPA ASSIST, Aware Home Research Initiative, and NIDRR Wireless RERC

Honors include: Named one of Georgia Trend's "Top 40 under 40" (2001), IEEE VR Best Paper Award (2000), Named one of MIT Technology Review's top 100 innovators under 35 (1999), USAF Laboratory Graduate Fellow – 25 chosen of 2031 (1991)

### **Other Research Collaborators within Past Two Years**

Alex Pentland (MIT), Joseph Paradiso (MIT), Jose Hernandez-Rebollar (GWU), Gerhard Troester (ETH-Z), Pawel Lukowicz (UMIT), Gregory Abowd (GT), Amy Bruckman (GT), Irfan Essa (GT), Charles Isbell (GT), Mark Clements (GT)

### **Ph.D. Advisor**

Alex Pentland, Media Laboratory, Massachusetts Institute of Technology

### **Graduate Students**

Dr. Kent Lyons, (GT CoC); 8 PhD students in process; ~10 Masters students graduated.