

TRACY L. WESTEYN

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EDUCATION

- | | | |
|-------------------|---|--|
| 01/2002 – Present | Georgia Institute of Technology
Anticipated date of graduation: Dec 2008
Grade Point Average: 3.98 (4.00 scale)
Specialization: intelligent systems, machine learning, and computer vision
Minor: experimental research design for mobile technology | Ph.D. Computer Science
(Anticipated, Dec 2008) |
| 01/2001 – 05/2005 | Georgia Institute of Technology
Grade Point Average: 3.97 (4.00 scale)
Areas of Specialization: intelligent systems | M.S. Computer Science
(Awarded, May 7, 2005) |
| 10/1996 – 12/2000 | Georgia Institute of Technology
BSCS degree awarded with highest honors and cooperative seal.
Grade Point Average: 3.84 (4.00 scale)
Areas of Specialization: artificial intelligence and human-computer interaction | B.S. Computer Science
(Awarded, December 16, 2000) |

PUBLICATIONS

- | | |
|-----------------------|---|
| <i>Journal Papers</i> | <ul style="list-style-type: none">• J. Kientz, G. Hayes, T. Westeyn, T. Starner, and G. Abowd. Pervasive Computing and Autism: Assisting Caregivers of Children with Special Needs. <i>Special Issue on Pervasive Computing in Healthcare</i>, Jan-Mar, 2007• T. Starner, B. Leibe, D. Minnen, T. Westeyn, A. Hurst, and J. Weeks. The Perceptive Workbench: Computer-vision-based gesture tracking, object tracking, and 3D reconstruction for augmented desks. <i>Machine Vision Applications</i>, 14(1):59–71, 2003 |
| <i>Book Chapters</i> | <ul style="list-style-type: none">• M. Gandy, T. Westeyn, H. Brashear, and T. Starner. Wearable Systems Design Issues for the Elderly and Disabled. In A. Helal, M. Mokhtari, and B. Abdulrazak, editors, <i>Smart Technology for Aging, Disability, and Independence</i>, volume 2. Wiley, In Press 2007 |

Refereed Papers
(Full, Short, & Posters)

- D. Minnen, T. Westeyn, P. Presti, D. Ashbrook, and T. Starner. Recognizing Soldier Activities in the Field. In *Proceedings of the Fourth International IEEE Workshop on Wearable and Implantable Body Sensor Networks (BSN 2007)*, page To Appear. March 26-28 2007
[Full Paper with oral presentation: acceptance rate to be announced]
- T. Westeyn, P. Presti, and Thad Starner. ActionGSR: A Combination Galvanic Skin Response–Accelerometer for Physiological Measurements in Active Environments. In *Tenth IEEE International Symposium on Wearable Computers (ISWC 2006)*. IEEE Computer Society, October 11-14 2006
[Poster Paper with poster presentation: acceptance rate to be announced]
- T. Westeyn, K. Vadas, X. Bian, T. Starner, and G. D. Abowd. Recognizing Mimicked Autistic Self-Stimulatory Behaviors Using HMMs. In *Ninth IEEE International Symposium on Wearable Computers (ISWC 2005)*, pages 164–169. IEEE Computer Society, October 18-21 2005. ISBN 0-7695-2419-2. [34% acceptance]
[Short Paper with oral presentation: 4 short papers accepted of 35 submitted, including this one (11%). 8 long papers converted to short papers leading to a 34% acceptance rate.]
- T. Westeyn and T. Starner. Recognizing Song-Based Blink Patterns: Applications for Restricted and Universal Access. In *Sixth IEEE International Conference on Automatic Face and Gesture Recognition (FGR 2004)*, pages 717–722. IEEE Computer Society, May 17-19 2004. [50% acceptance]
[Poster paper with poster presentation: approximately 50% of posters were accepted]
- T. Westeyn, H. Brashear, A. Atrash, and T. Starner. Georgia Tech Gesture Toolkit: supporting experiments in gesture recognition. In *Proceedings of the 5th International Conference on Multimodal Interfaces, (ICMI 2003)*, pages 85–92. ACM, November 5-7 2003. ISBN 1-58113-621-8. [16% acceptance]
[Full Paper with oral presentation: 20 full papers accepted for oral presentation out of 128 submissions (16%). Overall acceptance was 49 (38%).]

Non-Refereed Papers
(Workshops & Invited)

- K. Lyons, H. Brashear, T. Westeyn, J. Kim, and T. Starner. GART: The Gesture and Activity Recognition Toolkit. In *Human Computer Interaction International (HCII 2007)*. July 22-27 2007 [Full Paper with oral presentation:]
- D. Minnen, T. Westeyn, T. Starner, J. Ward, and P. Lukowicz. Performance Metrics and Evaluation Issues for Continuous Activity Recognition. In *Performance Metrics for Intelligent Systems Workshop*. August 21-23 2006 [Full Paper with oral presentation:]
- D. Ashbrook, T. Westeyn, and T. Starner. Dancing in the Streets: Smartphones and Gaming. In *Workshop on Ubiquitous Entertainment and Games at the 7th International Conference on Ubiquitous Computing, (UbiComp 2005)*. September 11-14 2005
- T. Westeyn, P. Pesti, K. Park, and T. Starner. Biometric Identification using Song-Based Eye Blink Patterns. In *Human Computer Interaction International (HCII 2005)*. July 21-24 2005 [Short Paper with oral presentation:]

EMPLOYMENT

<i>06/2006</i>	Temporary Instructor	Kennesaw State University Kennesaw, GA
	Employed as instructor for the NSF funded CyberTech-ITEST CyberTech II program. Duties included lecturing to a class of 18 students for 5 hours a day, preparing lectures, creating in-class assignments, grading assignments, selecting honor students, and staff meetings.	
<i>05/2001 – Present</i>	Graduate Research Assistantship	Georgia Tech Atlanta, GA
	Employed as a graduate research assistant for the Contextual Computing Group. Advised by Dr. Thad Starner. Research projects involve wearable computing, machine learning, and assistive technology research. Duties include researching previous work, applying new techniques, performing user studies, advising Masters and undergraduate students, and writing academic papers.	
<i>05/2004 – 08/2004</i>	International Research Internship	University of Medical Informatics Tirol Innsbruck, Austria
	Employed as a graduate research assistant for an international collaboration between the Contextual Computing Group of Georgia Tech and UMIT, Austria. Advised by Dr. Paul Lukowicz. The main research project involved collecting and analyzing cooking data using activity discovery methods. Duties also included advising a female undergraduate student on context aware information retrieval in hospital settings.	
<i>06/2002 – 12/2002</i>	International Research Assistantship	Swiss Federal Institute of Technology Zurich, Switzerland
	Employed as a graduate research assistant for a joint collaboration between the Contextual Computing Group of Georgia Tech and the IFE group of Swiss Federal Institute of Technology (ETH), Zurich. Advised by Dr. Thad Starner and Gerhard Troster, research projects involved wearable computing and gesture recognition. Duties included working on projects, demonstrating project results, and attending conferences.	
<i>01/1999 – 05/2001; 2002</i>	Teaching Assistantships	College of Computing, Georgia Tech Atlanta, GA
	Employed as both an undergraduate and graduate teaching assistant for “Introduction to Instruction Set Architecture and Machine Level Programming,” “Languages and Translation,” and “Introduction to Artificial Intelligence.” Duties included guest lecturing; holding weekly recitations, labs, and office consultations; creating new course material; proctoring; assisting in exam writing; grading exams; and grading student assignments.	
<i>09/1997 – 12/1999</i>	Co-op Student Research Assistant	Georgia Tech Research Institute Atlanta, GA
	Employed as a co-op student research assistant in the Electro-Optical Environmental Material Laboratory Intelligent Machines Branch. Duties included maintaining and extending existing code in ongoing projects, working in small groups to design and document new software features, and reviewing code written by group members. Responsible for testing code, documenting bugs, and conducting on-site field trials.	

TEACHING

<i>Course Instruction</i>	<ul style="list-style-type: none"> ● CyberTech II: Kennesaw State University Instructor, College of Computer Science and Mathematics. 1 term (70 hours). June 2006
<i>Teaching Assistantships</i>	<ul style="list-style-type: none"> ● CS4600: Introduction to Artificial Intelligence Georgia Tech Graduate TA, College of Computing. 1 term. Spring 2002 ● CS2130: Languages and Translations Georgia Tech Graduate TA, College of Computing. 1 term. Spring 2001 ● CS2330: Languages and Translations Georgia Tech Undergraduate TA, College of Computing. 4 terms. Summer 1999 – Fall 2000 ● CS2760: Intro to Instruction Set Architecture & Machine Level Programming Georgia Tech Undergraduate TA, College of Computing. 2 terms. Winter 1999 – Spring 1999
<i>Course Enrichment</i>	<ul style="list-style-type: none"> ● CS4600: Introduction to Artificial Intelligence Georgia Tech Developed 4 new homework assignments and exam materials which have been reused in subsequent course offerings (and modified version are still currently in use). ● CS2330: Languages and Translations Georgia Tech Developed weekly recitation material and 2 homework/lab assignments which were reused in subsequent course offerings until the course was revamped in 2001.
<i>Student Guidance</i>	<ul style="list-style-type: none"> ● Gregory Willson Georgia Tech Undergraduate Student Summer 2006 – Fall 2006 Research: Mobile, ambient monitoring using wearable sensors and mobile phones ● Kristin Vadas Georgia Tech Graduate Student (MS) Spring 2005 Research: machine learning for the detection of autistic behaviors ● Peter Pesti Georgia Tech Graduate Student (MS) Spring 2005 – Summer 2005 Research: development of blink-based, biometric interface ● Astrid Labner UMIT, Austria Undergraduate Student Summer 2004 Research: survey of hospital practices for deployment of wearable sensors ● Robert McGuire Georgia Tech Undergraduate Student Fall 2003 Project: deployment infrastructure for the Georgia Tech Gesture Toolkit ● Amy Hurst Georgia Tech Undergraduate Student Summer 2001 Research: computer graphics and networking with a smart pool table.

DEMOS

- 06/2003; 06/2005 | **Rehabilitation Engineering & Assistive Technology Society** **RESNA Atlanta**
 T. Westeyn, P. Pesti, and T. Starner. Blink!: Appliance Control through Eyeblinks, June 2005
 T. Westeyn and T. Starner. The Gesture Panel: Gross Gesture Recognition in Mobile Environments, June 2003
- 09/2003 | **CNN Headline News Live Demo** **CNN Atlanta,GA**
 H. Brashear, V. Henderson, D. Ashbrook, T. Westeyn, and T. Starner. TeleSign: Mobile Sign Language Recognition. CNN Headline News live demo, September 2003

GRANTS

- 09/2003 – 07/2004 | **Graphics, Visualization, and Usability (GVU) Seed Grant** Georgia Tech
Recognizing Blink Patterns for Development of Assistive Technologies
 T. Westeyn, T. Starner, M. Moore, and S. Sprigle
 Amount Requested: one 9-month GRA (\$20,000), September 2003
 Result: funded (2003 – 2004).
- 09/2003 – 07/2004 | **Automotive Technology Exploration** Daimler Chrysler
The Gesture Panel: Low Cognitive Load Control of Car Automation Through Gross Gesture
 T. Starner & T. Westeyn
 Amount Gifted: \$32,500
 Responsible for initiation and technology transfer

PROFESSIONAL ACTIVITIES

- 01/2006 – Present | Co-Organizing On-Body Sensing Tutorial ISWC 2006
 10th International Symposium of Wearable Computing
- 3/2006 | Reviewer for the Int'l Journal of Computer Vision and Image Understanding, CVUI 2006
 Special Issue on Human Computer Interaction (third quarter 2006)
- 3/2006 | Student Volunteer SIGCSE 2006
 37th Technical Symposium on Computer Science Education
- 07/2005 – 10/2005 | Co-Organized On-Body Sensing Workshop ISWC 2005
 9th International Symposium of Wearable Computing
- 06/2005, 06/2006 | Reviewer ISWC 2005, 2006
 9th & 10th International Symposium of Wearable Computing

LEADERSHIP

<i>08/2006 – Present</i>	Grad Women@cc Co-coordinator	Georgia Tech
<i>08/2004 – 08/2006</i>	Grad Women@cc Advisory Board Membership Chair	Georgia Tech
<i>08/2004 – Present</i>	CoC Graduate Student Council Women's Programs Representative	Georgia Tech
<i>03/2006 – 04/2006</i>	CoC Ph.D Recruiting Picnic Student Organizer	Georgia Tech
<i>08/2004 – 09/2005</i>	Women@cc Roadshow Member (Minorities in Computing Outreach)	Georgia Tech
<i>01/2003 – 12/2005</i>	Undergraduate/Masters Research Mentor	Georgia Tech
<i>9/1998 – 5/2002</i>	Women's Lacrosse Club (President 2001 – 2002)	Georgia Tech
<i>1999 – Present</i>	Shaolin Kung Fu & Tai Chi Student (Black Belt) and Assistant Instructor	Georgia Tech

HONORS

<i>2006 – 2007</i>	Google's Anita Borg Scholarship	Google
<i>12/2004</i>	Finalist for National PEO Scholar Award selected by the local PEO chapter as Georgia Tech representative	Georgia Tech
<i>03/2003 – Present</i>	Theta Chapter of Upsilon Pi Epsilon, founding member	Georgia Tech
<i>1998; 1999; 2000</i>	Faculty Honors (4.0 GPA)	Georgia Tech
<i>05/1999 – Present</i>	Golden Key Honor Society	Georgia Tech
<i>1996 – 1999</i>	Dean's List	Georgia Tech

SOFTWARE

<i>12/2003 – Present</i>	<p>Georgia Tech Gesture Toolkit T. Westeyn, H. Brashear, A. Atrash, and T. Starner. The Georgia Tech Gesture Toolkit (GT2k) provides a publicly available toolkit for developing gesture-based recognition systems. It is currently used by students at Georgia Tech, universities across the US, and international universities.</p>
<i>6/2005 – Present</i>	<p>BlinkI T. Westeyn and P. Pesti and K. Park and T. Starner BlinkI is a blink based interface for controlling devices via the X10 protocol. This software is currently being package for distribution to the Shepard Center in Atlanta, GA. The Shepard Center is a hospital treating people with spinal cord injuries and plans to use this software for research purposes.</p>

10/2003

Gesture Panel

T. Westeyn, W. Veridian, and T. Starner

The Gesture Panel is both hardware and software supporting gesture recognition in automobiles. A prototype system has been supplied to DaimlerChrysler Research and Technology for future development.

IN THE PRESS

Magazine Articles
(Gesture Panel related)

- D. Geer. Will gesture recognition technology point the way. *IEEE Computer*, 37(10):20–23, October 2004
- Corie Lok. Wireless for the Disabled. *MIT Technology Review*, 106(10):64, January 2004
- Corie Lok. Wireless for the Disabled. *ACM Tech News*, 6(595), January 16 2004