Jason B. Ellis

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Education

Georgia Institute of Technology, Atlanta, GA
Ph.D. Computer Science, May 2003
Dissertation advisor: Amy S. Bruckman
Minor: History, Technology, and Society

University of Maryland, College Park, MD
B.S. Computer Science with Honors, May 1995
Honors advisors: William Gasarch and Clyde Kruskal
Minor concentration: English

Experience

IBM T.J. Watson Research Center, Yorktown Heights, NY (12/02 to Present):
Research Staff Member. Joined IBM Research to design, implement, and study user interfaces that help people work effectively with complex systems of technology, data, and collaborators. Selected projects:

- *War Rooms for High Stakes Decision-Making.* Making decisions under time pressure is difficult. The pressure only goes up when complex data must be understood to make the decisions and significant amounts of money are involved. I am co-leading an effort to build war rooms that help professional sports teams make decisions under these challenging conditions. These rooms use large wall and table touch screens to display key complex data, custom software to support fluid interaction across multiple displays (and with remote participants), and new user interface approaches suited to the new environment and high-pressure tasks at hand. The initial deployment is in daily use by the Toronto Raptors professional basketball team.

- *Social Visualization for Medical and Social Care.* Medical, social work, and other health professionals often have patients in common, but collaboration among these roles is a challenge. I am building a set of interactive visualizations that integrate data from a variety of sources and aim to facilitate appropriate coordination among caregiving roles. The visualizations provide a rich, evolving picture of the patient in their social and medical context. I am working on an interdisciplinary team to design and evaluate these tools. Research issues include design for disparate roles, collaborative visualization, privacy, and information integration.

- *Mobile Social Applications for the Developing World.* Five of the six billion people on Earth have limited or no access to the benefits of information technology. But that's changing. What does it mean to make software that specifically targets these markets? I initiated and lead the Social Computing Group effort to answer this question. As the team lead, I set team goals and align our work with the IBM business. I also initiate and manage relationships with internal and external partners. I've made presentations at key conferences and meetings in the US, Africa, and India on the team's work. As a contributor, I did fieldwork in rural Uganda and Rwanda. I worked with a non-profit to deploy and study incentive-based SMS quizzes focused on health education to roughly 3000 workers in rural Uganda (published in ACM DEV 2010). I built smartphone (Android), SMS, and voice applications that target developing nations. I've also played a central role in the development of the IBM Mobile Services Platform - a cloud-based platform that makes it easier to develop, deploy, and collect payment for mobile phone applications. These applications can combine Voice and SMS. To date, I've done work on the ground in Uganda, Rwanda, Tanzania, South Africa, Nigeria, and India. Seven patents have filed on this work.

- *Virtual Team Building Games.* Iteratively designed, implemented, and studied cooperative games in Second Life that facilitate the development of team cohesiveness at a distance. Papers detailing this work appear in ACM DIS 2008, CHI 2009, and ICIC 2010.

- *Social Visualization for Software Development.* Designed, implemented, and studied numerous visualizations of social interaction in open source software development processes. These visualizations appeared in the initial preview of Rational Jazz at OOPSLA 2005 and shipped on CD to selected early adopters. Papers on this work have appeared in CHI and CSCW, and two patents have issued.

College of Computing, Georgia Institute of Technology, Atlanta, GA (10/96 to 5/03):
Ph.D. Candidate in Computer Science. Received fellowships from the NSF, IBM and Intel to pursue a doctorate in Computer Science with a focus on Human-Computer Interaction. My dissertation work, Palaver Tree Online, involved the design and implementation of an online community that supports kids interviewing elders to build up a shared database of oral history. Within this environment, kids and elders work together to explore elders' life stories and build artifacts that share these stories with the world. This work was funded by IBM and Intel.

IBM T.J. Watson Research Center, Yorktown Heights, NY (6/98 to 9/98):
Summer Intern. Designed and prototyped extensions to Babble, a distributed workgroup support system developed at IBM Research. Babble allows members of a workgroup to stay in contact through semi-synchronous textual discussion (both public and private) and variety of awareness aids. Performed an in-depth analysis of the system as it currently exists and created a number of design sketches, prototypes, and working versions of an improved Babble that supports much richer interaction. Two patents have issued on this work.

Xerox Palo Alto Research Center, Palo Alto, CA (6/97 to 9/97):
Summer Intern. Designed and built the infrastructure for Audio Aura, an audio augmented reality system. This system is designed to provide peripheral awareness of one's environment via audio. It uses positioning data from an active badge system and keyboard activity to form a flexible,

queryable data store. Audio Aura Services include E-mail Notification, Audio Footprints, and Group Pulse. New Services may be authored by users. This work was published in the proceedings of CHI 98. Two patents have issued on this work.

Human-Computer Interaction Lab, University of Maryland, College Park, MD (6/95 to 9/96):
Faculty Research Assistant. Participated in a system-wide analysis and redesign of the information system for the Maryland Department of Juvenile Justice. Used an iterative design process at DJJ to design and implement a dynamic query interface that allows for the assignment of troubled youth to appropriate facilities. This work was published in the proceedings of CHI 97.

Information Data Systems, Inc. & LAN Based Systems, Inc., Silver Spring, MD (7/89 to 9/95):
Computer Programmer. Developed database and other systems based on technical specifications. Designed modular memory management and user interface objects for use in present and future systems. Developed multimillion dollar SAFE system for the U.S. Treasury Department, INVEST system for NIDA and many others.

Analyst. Wrote technical specifications for project proposals. Aided president regarding future ventures and the execution thereof. Negotiated contracts with clients. Evaluated client needs and recommended solutions.

Network Administrator. Set up and maintained local area networks for the U.S. Treasury, NIDA, The Product Group, Information Data Systems and many others.

Honors and Awards

AAAI 2018 Best Technical Demo Award: "Cognitive Assistant for Visualizing & Analyzing Exoplanets"

Fast Company Innovation by Design 2016 Finalist for Graphic Design & Data Visualization

Career Achievement Award, Black Engineer of the Year Awards 2013.

ACM Senior Member, October 2012.

Modern-Day Technology Leader, Black Engineer of the Year Awards 2008.

Honorable Mention - SIGCHI Best of CHI 2007 Award for full paper "Task and Social Visualization in Software Development: Evaluation of a Prototype."

Intel Foundation Graduate Fellowship 2001-2002.

IBM Research Graduate Fellowship, 1998-2001.

NSF Graduate Research Fellowship in HCI, 1996-1998.

Graduated With Honors in Computer Science from University of Maryland, 1995.

John H. Franklin Certificate of Recognition for Outstanding Academic Performance, 1995.

James A. Yorke Young Researcher Award, 1994.

OMSE Certificate of Recognition for Outstanding Academic Achievement, 1991-1995.

Full Academic Scholarship, 1993-1994.

Dean's List for eight semesters at University of Maryland, 1992-1995.

Publications

Jason Ellis, Biplav Srivastava, Rachel Bellamy, Andy Aaron. "Water Advisor - A Data-Driven, Multi-Modal, Contextual Assistant to Help With Water Usage Decisions." In Proceedings of the 2018 AAAI Conference on Artificial Intelligence (AAAI '18) Demonstrations Program.

Jeffrey Kephart, Victor Dibia, Jason Ellis, Biplav Srivastava, Kartik Talamadupula, Mishal Dholakia. "A Cognitive Assistant for Visualizing and Analyzing Exoplanets." In Proceedings of the 2018 AAAI Conference on Artificial Intelligence (AAAI '18) Demonstrations Program.

Bin Xu, Jason Ellis, Thomas Erickson. "Attention from Afar: Simulating the Gazes of Remote Participants in Hybrid Meetings." In Proceedings of the 2017 Conference on Designing Interactive Systems (DIS '17).

Robert Farrell, Jonathan Lenchner, Jeffrey Kephart, Alan Webb, Michael Muller, Thomas Erickson, David Melville, Rachel Bellamy, Daniel Gruen, Jonathan Connell, Danny Soroker, Andy Aaron, Shari Trewin, Maryam Ashoori, Jason Ellis, Brian Gaucher, Dario Gil. "Symbiotic Cognitive Computing." AI Magazine, Vol. 37, No. 3, Fall 2016.

Thomas Erickson, Jason Ellis and Kevin McAuliffe. "Supporting Coordinated Care: Designing Social Context Visualizations for Care Teams." The IBM Journal of Research and Development, April, 2015.

Jason Ellis, Achille Fokoue, Oktie Hassanzadeh, Anastasios Kementsietsidis, Kavitha Srinivas, Michael J. Ward. "Exploring Big Data with Helix: Finding Needles in a Big Haystack." SIGMOD Record, December 2014 (Vol. 43, No. 4).

Weijia Shen, Guotong Xie, Kavitha Srinivas, Anastasios Kementsietsidis, Jason Ellis, Thomas Erickson, Kevin McAuliffe, Gang Hu, Wen Sun. "Promoting Integrated Social and Medical Care through Semantic Integration." Proceedings of CSWS 2013 China Semantic Web Symposium. August 12-18, 2013.

Christopher Le Dantec, Robert Farrell, James Christensen, Mark Bailey, Jason B. Ellis, Catalina Danis, Wendy A. Kellogg. "Publics in Practice: Ubiquitous Computing at a Shelter for Homeless Mothers." Proceedings of ACM CHI 2011 Conference on Human Factors in Computing Systems. May 7-12, 2011.

Catalina Danis, Jason B. Ellis, Wendy A. Kellogg, Hajo van Beijma, Bas Hoefman, Steven D. Daniels, Jan-Willem Loggers. "Mobile Phones for Health Education in the Developing World: SMS as a User Interface." Proceedings of ACM DEV 2010 First Annual Symposium on Computing for Development. December 17-18 2010.

Christopher Le Dantec, Robert Farrell, James Christensen, Mark Bailey, Jason B. Ellis, Catalina Danis, Wendy A. Kellogg. "A Tale of Two Publics: Democratizing Design at the Margins." Proceedings of ACM DIS 2010 Conference on Designing Interactive Systems. August 16-20 2010.

Robert Farrell, Catalina Danis, Thomas Erickson, Jason Ellis, Jim Christensen, Mark Bailey, Wendy A. Kellogg, " A Picture and a Thousand Words: Visual Scaffolding for Mobile Communication in the

Developing World." In Handheld Computing for Mobile Commerce: Applications, Concepts and Technologies. Hu, Wen-Chen and Zuo, Yanjun (eds.) IGI Publications. 2010.

Sheena Lewis, Jason B. Ellis, Wendy A. Kellogg. "Using Virtual Interactions to Explore Leadership and Collaboration in Globally Distributed Teams." Proceedings of ACM ICIC 2010 International Conference of Intercultural Collaboration. August 19-20, 2010.

Katherine Bessiere, Jason B. Ellis, Wendy A. Kellogg. "Acquiring a Professional 'Second Life:' Problems and Prospects for the Use of Virtual Worlds in Business." Proceedings of ACM CHI 2009 Conference on Human Factors in Computing Systems. Case Study. April 4-9, 2009.

Jason B. Ellis, Kurt Luther, Katherine Bessiere, Wendy A. Kellogg. "Games for Virtual Team Building." Proceedings of ACM DIS 2008 Conference on Designing Interactive Systems. February 25-27, 2008.

Nick Yee, Jason B. Ellis, Nicolas Ducheneaut, "The Tyranny of Embodiment" in Artifact, Volume 2, Issue 3 (2008).

Jason B. Ellis, Shahtab Wahid, Catalina Danis, Wendy A. Kellogg. "Task and Social Visualization in Software Development: Evaluation of a Prototype." Proceedings of ACM CHI 2007 Conference on Human Factors in Computing Systems. April 28-May 3, 2007. Honorable Mention - SIGCHI Best of CHI 2007 Award.

Christine A. Halverson, Jason B. Ellis, Catalina Danis, Wendy A. Kellogg. "Designing Task Visualizations to Support the Coordination of Work in Software Development." Proceedings of ACM CSCW 2006 Conference on Computer Supported Cooperative Work, November 4-8, 2006.

Jason B. Ellis, Catalina Danis, Christine Halverson, Wendy Kellogg. "Social Visualization in Software Development." Work in Progress. Proceedings of ACM CHI 2006 Conference on Human Factors in Computing Systems, April 24-27, 2006.

Jason B. Ellis, Amy S. Bruckman. "Encouraging Attitudinal Change through Online Oral History." Proceedings of ICLS 2002, International Conference of the Learning Sciences, Seattle, WA, October 23-26, 2002.

Jason B. Ellis, Amy S. Bruckman. "Different Achievement in Online Oral History." Proceedings of CSCL 2002 Conference on Computer Supported Collaborative Learning, Boulder, CO, January 7-11, 2002.

Jason B. Ellis, Amy S. Bruckman. "What Do Kids Learn from Adults Online? Examining Student-Elder Discourse in Palaver Tree." Electronic Proceedings of CSCL 2002 Conference on Computer Supported Collaborative Learning, Boulder, CO, January 7-11, 2002.

Jason B. Ellis, Amy S. Bruckman. "Designing Palaver Tree Online: Supporting Social Roles in a Community of Oral History." Proceedings of ACM CHI 2001 Conference on Human Factors in Computing Systems, March-April 2001, pp. 474-481.

Jason B. Ellis, Amy S. Bruckman, D. Kevin O'Neill, Nancy B. Songer. "Scaling Educational Online Communities: The Role of Volunteerism in Doing Large-Scale Educational Projects Online." Panel

discussion in Proceedings of ICLS 2000, International Conference of the Learning Sciences, Ann Arbor, MI, June 2000, pp. 362-365.

Jason B. Ellis, Amy S. Bruckman, Robert C. Satterwhite. "Children and Elders Sharing Stories: Lessons from Two Online Oral History Projects." Proceedings of CSCL 99 Conference on Computer Supported Collaborative Learning, Stanford, CA, December 1999, pp. 151-158.

Jason B. Ellis. "Kids and Elders Working Together in an Online Community of History." Doctoral consortium paper in Proceedings of CSCL 99 Conference on Computer Supported Collaborative Learning, Stanford, CA, December 1999, pp. 7-8.

Jason B. Ellis, Amy Bruckman. "Building a Community of History." Proceedings of ACM CHI 99 Conference on Human Factors in Computing Systems Extended Abstracts, May 1999, pp. 37-38.

Elizabeth D. Mynatt, Maribeth Back, Roy Want, Michael Baer, Jason B. Ellis. "Designing Audio Aura." Proceedings of ACM CHI 98 Conference on Human Factors in Computing Systems, April 1998, pp. 566-573.

Jason B. Ellis, Anne Rose, Catherine Plaisant. "Putting Visualization to Work: ProgramFinder for Youth Placement." Proceedings of ACM CHI 97 Conference on Human Factors in Computing Systems, March 1997, pp. 502-509.

Patents

Thomas Erickson, Jason Ellis, Karin Niemantsverdriet, Bin Xu. A System and Method for Displaying the Simulated Gazes of Multiple Remote Participants To Participants Collocated in a Meeting Space. Patent filed 2016.

Mary Roth, Eser Kandogan, Jason Ellis, Jeffrey Kephart. "A System and Method to Capture and Replay Context and Operations for a System of Autonomous Agents," Patent filed 2015.

Robert Farrell, Jonathan Connell, Danny Soroker, Jason Ellis, Maryam Ashoori. "Notifying Aerial Vehicles of a Policy for Operation in a Space-time Region," Patent filed 2015.

Maryam Ashoori, Clifford Pickover, Jason Ellis, Jonathan Lenchner, Robert Farrell. "System and Method for Social Connection Via Real-Time Image Comparison," Patent filed 2015.

Peter Malkin, Jason Ellis, Thomas Erickson, Kevin McAuliffe "System and Method Providing Automated Suspicion Management," Patent filed 2015.

Jason Ellis, Oktie Hassanzadeh, Michael Ward, "User Interface and Method for Progressively Building Complex Queries," Patent filed 2013.

Rajarshi Das, Jason Ellis, Robert Farrell, Wendy Kellogg, "Broadcast Messaging of Incentives Based on Value," Patent filed 2012.

Tawanna Dillahunt, Jason Ellis, Robert Farrell, "Adaptive Mobile Messaging," Patent filed 2011.

Mark Bailey, Jim Christensen, Catalina Danis, Jason Ellis, Robert Farrell, "Tagging of Asynchronous Messages," Patent filed 2011.

Mark Bailey, Jim Christensen, Catalina Danis, Jason Ellis, Thomas Erickson, Robert Farrell, Wendy Kellogg, "Social Navigation of Digital Media Using Voice Tags," Patent US 8903847 issued Dec 2, 2014.

Mark Bailey, Jim Christensen, Steven Daniels, Catalina Danis, Jason Ellis, Robert Farrell, "Single Use Phone Numbers for Synchronizing SMS Dialogues," Patent US 8600359 issued Dec 9, 2013.

Jason B. Ellis, Laurent Hasson, Peter Malkin, "Visualization for Aggregation of Change Tracking Information," Patent US 8160910 issued April 17, 2012.

Jason Ellis, Laurent Hasson, Peter Malkin, "A System and Method of Visualization for Aggregation of Change Tracking Information," Patent US 8024214 issued September 20, 2011.

Rachel K.E. Bellamy, Jason B. Ellis, Thomas D. Erickson, Wendy A. Kellogg, Mark R. Laff, Peter K. Malkin, John T. Richards, Philip S. Yu, and Tracee Wolf, "Method for Translucent Online Interaction," Patent US 6970931 issued November 29, 2005.

Peter Malkin, Rachel Bellamy, Jason Ellis, Thomas Erickson, Wendy Kellogg, Mark Laff, John Richards, "User-Defined Online Interaction Method and Device," Patent US 6944655 issued September 13, 2005.

Elizabeth D. Mynatt, Maribeth Back, Roy Want, Jason Ellis, W. Keith Edwards, "A System and Method for Providing Audio Augmentation of a Physical Environment," Patent US 6611196 issued August 26, 2003.

Elizabeth D. Mynatt, Maribeth Back, Roy Want, Jason Ellis, W. Keith Edwards, "Virtual Interface for Configuring an Audio Augmentation System," Patent US 6608549 issued August 19, 2003.

Doctoral Thesis

Jason B. Ellis. "Palaver Tree Online: Technological Support for Classroom Integration of Oral History," submitted April 2003.

Memberships

Association for Computing Machinery
ACM Special Interest Group for Computer-Human Interaction
American Civil Liberties Union
NAACP Legal Defense Fund