

Benjamin Waber

Room E15-390 20 Ames St. ♦ Cambridge, MA 02472 ♦ www.media.mit.edu/~bwaber ♦ bwaber@media.mit.edu

Education

- 2006 – 2011 **Massachusetts Institute of Technology**
Doctoral Candidate in Media, Arts, and Sciences
Thesis Title: Understanding the Link Between Changes in Social Support and Changes in Outcomes with the Sociometric Badge
MIT Media Lab, Human Dynamics Group
Cumulative GPA: 5/5
- 2008 – 2010 **Harvard University**
Graduate Student Affiliate – 2009-2010
Institute for Quantitative Social Science
Research Fellow – 2008-2009
Kennedy School of Government, Program for Networked Governance
- 2002 – 2006 **Boston University**
Bachelor of Arts / Master of Arts in Computer Science (GPA: 3.92/4)
Minor in Japanese (GPA: 3.97/4)
Cumulative GPA: 3.83/4
- 2004 **Stanford Kyoto Center for Japanese Studies**
Fall Semester
Completed advanced Japanese language instruction
GPA: 3.93/4

Honors and Awards

- 2008 – 2009 **Highlands & Islands Enterprise Fellow**
- 2008 **Best Paper Winner** – Interanational Conference on Information Systems
- 2006 Unanimously selected for the **Boston University Computer Science Research Award for Undergraduate Students**
- 2006 Received **Summa Cum Laude** honors at Boston University
- 2006 Inducted into **Phi Beta Kappa** at Boston University
- 2003 Named **Distinguished Sophomore** (Top 40 Boston University College of Arts and Sciences Sophomores)
- 2002 – 2006 **Dean's List Student** at Boston University
- 2002 Inducted into the **National Society of Collegiate Scholars**

Publications

JOURNAL PAPERS

Benjamin N. Waber, Ellen Brooks Pollock, Leon Danon, Riley Crane, Manuel Cebrian, and Alex (Sandy) Pentland. Modeling Corporate Epidemiology. *In Preparation.*

Benjamin N. Waber and Alex (Sandy) Pentland. Using Behavioral Data to Drive Staffing Decisions. *In Preparation.*

Jukka-Pekka Onnela, Benjamin N. Waber, Sebastian Schnorf, Alex (Sandy) Pentland, and David Lazer. Gender-Based Differences in Interaction Style. *In Preparation.*

Benjamin Waber

Benjamin N. Waber, Daniel Olguin Olguin, Sinan Aral, Lynn Wu, Erik Brynjolfsson, and Alex (Sandy) Pentland. The Sociometric Badge: Towards a New Era of Management Research. *Under Review*.

Benjamin N. Waber and Alex (Sandy) Pentland. Differences between Dynamic Face-to-Face and E-mail Networks: Implications for New Forms of Collaboration. *Journal of Organizational Behavior*. *Under Second Round Review*.

Lynn Wu, Benjamin N. Waber, Sinan Aral, Erik Brynjolfsson, and Alex (Sandy) Pentland. Mining Face-to-Face Interaction Networks Using Sociometric Badges: Evidence Predicting Productivity in IT Configuration. *Under Review*.

Daniel Olguin Olguin, Benjamin N. Waber, Taemie Kim, Akshay Mohan, Koji Ara, and Alex (Sandy) Pentland. Sensible Organizations: Technology and Methodology for Automatically Measuring Organizational Behavior. *IEEE Transactions on Systems, Man, and Cybernetics Part B*. Vol. 29, February, 2009.

Koji Ara, Naoto Kanehira, Daniel Olguin Olguin, Benjamin N. Waber, Taemie Kim, Akshay Mohan, Peter Gloor, Robert Laubacher, Daniel Oster, Alex (Sandy) Pentland, and Kazuo Yano. Sensible Organizations: Changing our Business and Work Styles through Sensor Data. *The Information Processing Society of Japan: Journal of Information Processing*. Vol. 16, April, 2008.

CONFERENCE PROCEEDINGS

Benjamin N. Waber. Reality Mining in Organizations: Using Sensors for Organizational Behavior Research. Symposium Presentation. Academy of Management Annual Meeting, Montreal, Canada, August 2010.

Jeffrey T. Polzer, Patricia Hernandez, Lisa Kwan, Benjamin N. Waber, and Alex (Sandy) Pentland. Thin Slices of Group Conflict. Symposium Presentation. Academy of Management Annual Meeting, Montreal, Canada, August 2010.

Benjamin N. Waber and Alex (Sandy) Pentland. Productivity Through Coffee-Breaks. NetSci 2010, Cambridge, USA, May 12, 2010. Also presented at the 30th International Sunbelt Social Network Conference, Riva del Garda, Italy, July 2, 2010.

Anmol Madan, Benjamin N. Waber, Margaret Ding, Paul Kominers, and Alex (Sandy) Pentland. Reality Mining and Personal Privacy: Will Privacy Disappear when Social Sensors Learn Our Lives? Engaging Data: International Forum on Management of Personal Electronic Information, Cambridge, USA, October 2009.

Benjamin N. Waber and Alex (Sandy) Pentland. The Link Between Changes in Social Support and Changes in Job Satisfaction: An Investigation with the Sociometric Badge. Workshop on Information in Networks (WIN), New York, USA, September 2009.

Benjamin N. Waber and Alex (Sandy) Pentland. Recognizing Expertise. 29th International Sunbelt Social Network Conference, San Diego, USA, March 2009.

Benjamin N. Waber, Kate Ehrlich, and Mary Helander. Communication Patterns in Distributed and Collocated Software Teams. 29th International Sunbelt Social Network Conference, San Diego, USA, March 2009.

Lynn Wu, Benjamin N. Waber, Sinan Aral, Erik Brynjolfsson, and Alex (Sandy) Pentland. Mining Face-to-Face Interaction Networks Using Sociometric Badges: Evidence Predicting Productivity in IT Configuration (Final Version). International Conference on Information Systems, Paris, France, December 14 – 17, 2008. **BEST PAPER WINNER**

Benjamin N. Waber, Daniel Olguin Olguin, Taemie Kim, and Alex (Sandy) Pentland. Understanding Organizational Behavior with Wearable Sensing Technology. Academy of Management Annual Meeting, Anaheim, USA, August 12, 2008.

Benjamin Waber

Benjamin N. Waber, Lynn Wu, Sinan Aral, Erik Brynjolfsson, and Alex (Sandy) Pentland. Mining Face-to-Face Interaction Networks Using Sociometric Badges: Evidence Predicting Productivity in IT Configuration (Second Version). NetSci 2008, Norwich, UK, June 27, 2008.

Lynn Wu, Benjamin N. Waber, Sinan Aral, Erik Brynjolfsson, and Alex (Sandy) Pentland. Mining Face-to-Face Interaction Networks Using Sociometric Badges: Evidence Predicting Productivity in IT Configuration (Early Version). 2008 Winter Conference on Business Intelligence, University of Utah, March 2008.

Benjamin N. Waber and Alex (Sandy) Pentland. Sensible Organizations: Discovering Social Networks using Sociometric Badges. 28th International Sunbelt Social Network Conference, St. Petersburg, USA, January 2008.

Benjamin N. Waber and Alex (Sandy) Pentland. Augmented Social Reality. ISWC '07 Doctoral Colloquium, Boston, USA, October 10, 2007.

Benjamin N. Waber and Alex (Sandy) Pentland. Real-Time Sensing Data for Organizational Enhancement. MobileHCI '07 In-Situ Workshop, Singapore, September 8, 2007.

Peter A. Gloor, Daniel Oster, Johannes Putzke, Kai Fischback, Detlef Schoder, Koji Ara, Taemie J. Kim, Robert Laubacher, Akshay Mohan, Daniel Olguin Olguin, Alex (Sandy) Pentland, and Benjamin N. Waber. Studying Microscopic Peer-to-Peer Communication Patterns. AMCIS 2007: Americas Conference on Information Systems. Keystone, Colorado, USA, August 9-12, 2007.

Benjamin N. Waber, Daniel Olguin Olguin, Taemie Kim, Akshay Mohan, Koji Ara, and Alex (Sandy) Pentland. Organizational Engineering using Sociometric Badges. NetSci 2007, New York City, USA, May 20-25, 2007.

Benjamin N. Waber, John Magee, and Margrit Betke. Web Mediators for Accessible Browsing. Proceedings of the UI4ALL 2006 Workshop, Bonn, Germany, September 26, 2006.

Benjamin N. Waber, John J. Magee, and Margrit Betke. Fast Head Tilt Detection for Human-Computer Interaction. Proceedings of the ICCV 2005 Workshop on Human-Computer Interaction, Beijing, China, October 21, 2005.

John J. Magee, Mathew R. Scott, Benjamin N. Waber, and Margrit Betke, "EyeKeys: A Real-time Vision Interface Based on Gaze Detection from a Low-grade Video Camera." IEEE Workshop on Real-Time Vision for Human-Computer Interaction (RTV4HCI), Washington DC, June 2004.

BOOK CHAPTERS

Benjamin N. Waber, Michele Williams, John Carrol, and Alex (Sandy) Pentland, "A Voice is Worth a Thousand Words: The Implications of Micro-Coding of Social Signals in Speech for Trust Research." To appear in the Handbook of Research Methods on Trust (Lyon, Möllering, Saunders and Hatzakis eds), Edward Elgar.

Behrooz Kamgar-Parsi, Behzad Kamgar-Parsi, Benjamin N. Waber, "The Use of Synthetic Eye Data in Eye/Face Recognition." ASTSA: (Javidi ed): Optical Imaging, Photonics, Sensors, and Systems for Homeland Security, Springer-Verlag.

TECHNICAL REPORTS

Benjamin N. Waber. Information Flow Visualization. Hitachi Central Research Laboratory Research Report. September 1, 2006.

Benjamin N. Waber, Web Mediators for Accessible Browsing. Boston University Computer Science Department Master's Project. May 2006.

Benjamin Waber

INVITED TALKS

Sensible Organizations: Using Wearable Computing to Measure and Analyze Human Behavior. EMC. Cambridge, USA. March 26, 2010.

Sensor-Based Feedback Systems in Organizational Computing. Canon. Tokyo, Japan, January 18, 2010 (in Japanese).

Human Networks: The Future of Work. MIT Summit Conference Series: Future Networks. Cambridge, USA. October 2, 2009.

Sensible Organizations: Towards the Real-Time Organization. NTT Comware (Tokyo, Japan, January 6, 2009, in Japanese), Kozo Keikaku Engineering Laboratory (Tokyo, Japan, January 6, 2009, in Japanese), NEC (Kanagawa, Japan, January 7, 2009, in Japanese), Dai Nippon Printing (Tokyo, Japan, January 8, 2009, in Japanese), Hitachi Central Research Laboratory (Tokyo, Japan, January 8, 2009, in Japanese), Tokyo University, Research Center for Advanced Science and Technology (Komaba Campus, Japan, February 10, 2009, in Japanese).

Sensible Organizations. Kozo Keikaku Engineering Laboratory (Tokyo, Japan, January 9, 2008, in Japanese), Keio University, School of Media and Governance (Shonan Fujisawa Campus, Japan, January 11, 2008, in Japanese).

The Sociometric Badge: Measuring and Evaluating Human Behavior. Omron Sensing and Control Technology Laboratory (Kizugawa, Japan, August 22, 2007, with Taemie Kim), Samsung Digital Media Research and Development Center (Suwon, Korea, August 28, 2007, with Taemie Kim and Koji Ara), Korea Telecom Future Technology Laboratory (Seoul, Korea, August 29, 2007, with Taemie Kim and Koji Ara), Ricoh Research and Development Headquarters (Yokohama, Japan, August 31, 2007, in Japanese), Shimizu Institute of Technology (Tokyo, Japan, September 6, 2007, in Japanese).

Real Time Human-Computer Interface Systems for Users with Disabilities. INRIA Rhone-Alps, Montbonnot, France. June 30, 2006.

Organizing Activities

Workshop on Multimodal Sensor-Based Systems and Mobile Phones for Social Computing. 2009 International Conference on Multimodal Interfaces. Organizers: Daniel Olguin Olguin, Taemie Kim, Benjamin N. Waber, Anmol Madan, and Alex (Sandy) Pentland.

Workshop on Social Computing with Mobile Phones & Sensors: Modeling, Sensing and Sharing. SocialCom 2009. Organizers: Tanzeem Choudhury, Deborah Estrin, Marta Gonzales Taemie Kim, Anmol Madan, Daniel Olguin Olguin, Alex (Sandy) Pentland, and Benjamin N. Waber.

Reality Mining: Using Sociometric Badges for Automated Behavioral Data Collection. 2009 Academy of Management Annual Meeting Professional Development Workshop. Organizers: Benjamin N. Waber and Lynn Wu.

Teaching Experience

Media Lab Enterprises: Digital Innovations, Spring 2010. Joint listed Media Laboratory and Sloan School of Management course.

Benjamin Waber

Selected Press Coverage



[Chisme!... Chisme! \(Audio\)](#). March 6, 2009.



[Every move you make](#). August 20, 2008.



[MIT researchers study workplace social networks with sophisticated sensors](#). August 8, 2008.



[Get a \(social\) life](#). June 30, 2008.



[Real-World Social Networks vs. Facebook 'Friends'](#). July, 2008.



[知識労働の生産性を上げるにはやっぱり話さないダメ \(in Japanese\)](#). April, 2008.



[Smart Badges Track Human Behavior](#). January 30, 2008.



[High-Tech Badges Log Human Networks](#). January 22, 2008.



[The Science of Subtle Signals](#). Autumn, 2007.

Benjamin Waber

Professional Experience

- Winter 2009 **Ricoh Central Research Laboratory (Yokohama, Japan)**
Intern
Supervisor: Yasuhiro Ono
- ◆ Researched novel methods of sensor and e-mail data fusion
 - ◆ Created management feedback systems utilizing sensor and e-mail data
- Summer 2008 **IBM Research (Cambridge, MA)**
Intern
Supervisor: Kate Ehrlich
- ◆ Investigated link between electronic communication patterns and productivity in software teams
- Summer 2006 **Hitachi Central Research Laboratory (Tokyo, Japan)**
Intern
Supervisor: Norihiko Moriwaki
- ◆ Researched methods for detection of obstacles to information flow in an organizational setting
- 2005 – 2006 **Boston University (Computer Science Department)**
Research Assistant
Advisor: Margrit Betke
- ◆ Research on Web/Computer Context and Human-Computer Interaction. Directed a group of two PhD researchers on this project.
- 2005 – 2006 **Boston University (Linguistics Department)**
Research Assistant
Advisor: Carol Neidle
- ◆ Research on ASL video storage and database representation (Project Webpage: <http://www.bu.edu/asllrp/>)
 - ◆ Created the Pair-Based Query Language (PBL)
- 2002 – 2006 **Boston University Hillel**
Web Designer, Webmaster
- Summer 2004 **Naval Research Laboratory (Sensor Based Systems Division)**
Researcher
Supervisor: Behrooz Kamgar-Parsi
- ◆ Developed a new methods for Face Recognition and Autonomous Air Vehicles' coastal detection
- Spring 2004 **Boston University (Computer Science Department)**
UROP Researcher
Advisors: Stan Sclaroff and Vassilis Athitsos
- ◆ Wrote code for pattern recognition algorithms
- Summer 2001 **Visual Solutions Inc.**
Intern - Database Application Developer
- 2000 – 2001 **Intermedia Incorporated**
Web Developer

Outside Interests

Brazilian Jiu-Jitsu, MIT Media Laboratory Softball Team, MIT Media Laboratory Student Committee