

Bilge Mutlu

Curriculum Vitae

Department of Computer Sciences
University of Wisconsin–Madison
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Current Position Assistant Professor, 2009-Present
Department of Computer Sciences, University of Wisconsin–Madison, Madison, WI, USA

Research Interests Human-computer interaction (HCI), specifically human-robot interaction, assistive, educational, and therapeutic use of humanlike robots and agents, modeling of human social behavior, activity recognition, and mobile and ubiquitous computing.

Education Ph.D. in Human-Computer Interaction, 2009
HCI Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA, USA
Committee: Jodi Forlizzi (co-chair), Jessica Hodgins (co-chair), Sara Kiesler, and Justine Cassell (Northwestern University)
Dissertation Title: Designing Gaze Behavior for Humanlike Robots
Master of Design in Interaction Design, Fulbright Fellow, 2004
School of Design, Carnegie Mellon University, Pittsburgh, PA, USA
Master of Science in Product Design, 2003
Institute of Science and Technology, Istanbul Technical University, Istanbul, Turkey
Bachelor of Industrial Design, Summa Cum Laude, 1999
Department of Industrial Design, Middle East Technical University, Ankara, Turkey

Publications

Refereed Full Conference Papers

Mutlu, B., Shiwa, T., Kanda, T., Ishiguro, H., & Hagita, N. (2009). Footing in Human-Robot Conversations: How Robots Might Shape Participant Roles Using Gaze Cues. *In Proceedings of the 4th ACM/IEEE Conference on Human-Robot Interaction (HRI'09)*, March 2009, San Diego, CA. [Acceptance rate: **19%**] **Winner of the Best Paper Award**

Mutlu, B., Yamaoka, F., Kanda, T., Ishiguro, H., & Hagita, N. (2009). Nonverbal Leakage in Robots: Communication of Intentions through Seemingly Unintentional Behavior. *In Proceedings of the 4th ACM/IEEE Conference on Human-Robot Interaction (HRI'09)*, March 2009, San Diego, CA. [Acceptance rate: **19%**]

Mutlu, B. & Forlizzi, J. (2008). Robots in Organizations: Workflow, Social, and Environmental Factors in Human-Robot Interaction. *In Proceedings of the 3rd ACM/IEEE Conference on Human-Robot Interaction (HRI'08)*, Amsterdam, The Netherlands. [Acceptance rate (for oral presentations): **18%**] **Winner of the Best Paper Award**

Mutlu, B., Krause, A., Forlizzi, J., Guestrin, C., & Hodgins, J.K. (2007). Robust, Low-Cost, Non-Intrusive Recognition of Seated Postures. *In Proceedings of 20th ACM Symposium on User Interface Software and Technology (UIST'07)*, Newport, RI. [Acceptance rate: **19%**]

Mutlu, B., Forlizzi, J., Nourbakhsh, I., & Hodgins, J. (2006). The Use of Abstraction and Motion in the Design of Social Interfaces. *In the Proceedings of the ACM Conference on Designing Interactive Systems (DIS'06)*, State College, PA.

[Acceptance rate: 25%]

Mutlu, B., Hodgins, J.K., & Forlizzi, J., (2006). A Storytelling Robot: Modeling and Evaluation of Human-like Gaze Behavior. *In Proceedings of the IEEE-RAS Conference on Humanoid Robots (Humanoids'06)*, Genova, Italy.

Mutlu, B., Osman, S., Forlizzi, J., Hodgins, J., & Kielser, S. (2006). Task Structure and User Attributes as Elements of Human-Robot Interaction Design. *In Proceedings of the 15th IEEE Symposium on Robot and Human Interactive Communication (Ro-Man'06)*, Hatfield, U.K.

DiSalvo, C., Forlizzi, J., Zimmerman, J., **Mutlu, B.**, & Hurst, A. (2005). The SenseChair: The lounge chair as an intelligent assistive device for elders. *In Proceedings of the ACM Conference on Designing for User Experiences (DUX'05)*, Fort Mason, CA.

Mutlu, B. & Forlizzi, J. (2004). The Chaotic Nature of Human Experience: An Alternative Approach to Determinacy in Understanding Emotions and Experience. *In "Critical Approaches to Design and Emotion," Proceedings of the 2004 Design & Emotion Conference*, Ankara, Turkey.

Forlizzi, J. & **Mutlu, B.** (2004). A Study of How Products Contribute to the Emotional Aspects of Human Experience. *In "Emotion and Experience," Proceedings of the 2004 Design & Emotion Conference*, Ankara, Turkey.

Mutlu, B. & Er, H.A. (2003). Design Innovation: Historical and Theoretical Perspectives on Product Innovation by Design. *In Proceedings of the 5th European Academy of Design Conference*, Barcelona, Spain.

Refereed Short Conference Papers

Mutlu, B. (2008). The Design of Gaze Behavior for Embodied Social Agents. *In Doctoral Consortium Extended Abstracts of the ACM/SigCHI Conference on Human Factors in Computing (CHI'08)*, April 2008, Florence, Italy.

Mutlu, B. (2006). An Empirical Framework for Designing Social Products. *In Doctoral Consortium Extended Abstracts of the 2006 ACM Conference on Designing Interactive Systems (DIS'06)*, University Park, PA.

Mutlu, B., Osman, S., Forlizzi, J., Hodgins, J., & Kielser, S. (2006). Perceptions of ASIMO: An exploration on co-operation and competition with humans and humanoid robots. *In Extended Abstracts of the 1st ACM/IEEE Human-Robot Interaction Conference (HRI'06)*, Salt Lake City, UT. [Acceptance rate: 29%]

Keyani, P., Hsieh, G., **Mutlu, B.**, Easterday, M., & Forlizzi, J. (2005). DanceAlong: Supporting Positive Social Exchange and Exercise for the Elderly Through Dance. *In Extended Abstracts of the ACM/SigCHI Conference on Human Factors in Computing Systems (CHI'05)*, Portland, OR. [Acceptance rate: 25%]

Journal Articles

Mutlu, B., Kanda, T., Forlizzi, J., Hodgins, J., & Ishiguro, H. (In preparation). Theoretically and Empirically Grounded Design of Humanlike Gaze Behavior for Establishing Participant Roles in Human-Robot Conversations. *Prepared for Human-Computer Interaction Journal*.

Mutlu, B. & Er, H. A. (2003). Global Marketing and Cultural Needs in New Product Development. *PI: Journal of Marketing and Communication Culture (PI: Pazarlama ve İletişim Kültürü Dergisi)*, 2 (6), 19-23 (in Turkish).

Theses

Mutlu, B. (2009). Designing Gaze Behavior for Humanlike Robots. *Doctoral Dissertation*. Technical Report # CMU-HCII-09-101. Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA, USA.

Mutlu, B. (2004). The chaotic nature of human experience: Insights on the subject matter of design towards establishing a Science of Design. *Master of Design Thesis*. Carnegie Mellon University, Pittsburgh, PA, USA.

Mutlu, B. (2003). New User-Centered Methods for Design Innovation: A Study on the Role of Emerging Methods in Innovative Product Design and Development. *Master of Science Thesis*. Istanbul Technical University, Istanbul, Turkey.

Grants and Gifts

Waltham Foundation (UK), 2009-Present
\$14,100 with Leila Takayama (*Willow Garage, Inc.*), Sara Kiesler (*CMU*), and Takayuki Kanda (*ATR, Japan*).

Ford Motor Company Graduate Student Research Grant, 2006
\$2,000 with Andreas Krause (*Caltech*).

Best Paper Awards

Best Paper Winner, ACM Human-Robot Interaction Conference, (HRI 2009)
Mutlu, Shiwa, Kanda, Ishiguro, & Hagita: "Footing in Human-Robot Conversations: How Robots Might Shape Participant Roles Using Gaze Cues" (#1 in over 150 submissions)

Best Paper Winner, ACM Human-Robot Interaction Conference, (HRI 2008)
Mutlu & Forlizzi: "Robots in Organizations: Workflow, Social, and Environmental Factors in Human-Robot Interaction" (#1 in over 150 submissions)

Other Honors & Awards

Doctoral Consortium Fellowship, June 2006 & April 2008
2008 *CHI Conference, Florence, Italy* & 2006 *DIS Conference, College Park, PA*

Fulbright Fellowship, 2002-2004
US Department of State, Institute of International Education, Washington D.C., USA

Graduated *Valedictorian*, 1999

Middle East Technical University, Ankara, Turkey

Ranked first among 31 graduates of the Department of Industrial Design and 154 graduates of the School of Architecture.

Invited Talks

Faculty Candidate, April 2009
School of Communication, Northwestern University, Evanston, IL.
Titled: Designing Social Behavior for Humanlike Robots

Job Candidate, March 2009
Willow Garage, Inc., Menlo Park, CA.
Titled: Designing Social Behavior for Humanlike Robots

Faculty Candidate, March 2009
Computer Science Department, University of Wisconsin—Madison, Madison, WI.
Titled: Designing Social Behavior for Humanlike Robots

Colloquium Speaker, March 2009
Robotics Institute, Carnegie Mellon University, Pittsburgh, PA.
Titled: Designing Social Behavior for Humanlike Robots

Faculty Candidate, February 2009
Cognitive Science Department, University of California, San Diego, La Jolla, CA.
Titled: Designing Socially Interactive Systems

Panel Speaker, November 2008
3rd CPATH (CISE Pathways to Revitalized Undergraduate Computing Education) Workshop on Social Robots, Schenectady, NY.
Titled: Designing Social Behavior for Robots

Colloquium Speaker, September 2008

Department of Adaptive Machine Systems, Graduate School of Engineering, Osaka University, Japan
Titled: The Design of Gaze Behavior for Social Robots

Organized Workshops & Symposia

“Experimental Design for Real-World Systems,” AAAI Spring Symposium, 2009

Co-organized with David Feil-Seifer (USC), Heidy Maldonado (Stanford), Leila Takayama (Stanford), and Katherine Tsui (UMass Lowell).

AAAI Spring 2009 Symposium, to be held in Palo Alto, CA, in March 2009.

“Social Responsibility in HRI: Conducting our Research, Changing the World,” Human-Robot Interaction Conference, 2009

Co-organized with Peter Kahn (UW), Nathan Frier (RPI), Vanessa Evers (U Amsterdam), Victoria Groom (Stanford), and Takayuki Kanda (ATR).

Human-Robot Interaction Conference, to be held at San Diego, California in March 2009.

Graduate Student Invitational Research Workshop on Human-Robot Interaction, 2006

Co-organized with Jodi Forlizzi, Sara Kiesler, Pamela Hinds (Stanford), Terry Fong (NASA), Brian Scasselati (Yale), Myung Suk Kim (KAIST), and Cristen Torrey.

Invitational Workshop, Carmel, California in August 2006.

Teaching Experience

University of Wisconsin–Madison, 2009 – Present

CS 838 – Human-Computer Interaction: Research (Fall 2009)

Carnegie Mellon University, 2003 – 2008

HCI 650 – Basic Interaction Design (Spring 2008 with John Zimmerman)

HCI 610 – Human-Computer Interaction Methods (Fall 2007 with Bonnie John & Christine Neuwirth)

Design 702 – Graduate Design Seminar II (Spring 2004 with Jodi Forlizzi)

Design 725 – Advanced Interface and Interaction Design (Spring 2003 with Jodi Forlizzi)

Industry Experience

Intern Researcher, Fall 2007 & Fall 2008

Intelligent Robotics and Communication Laboratory, ATR International, Japan

Worked as an intern researcher at the Human-Robot Interaction group. My work involved creating computational models of human gaze behavior, implementing these models on humanlike robots, and conducting human-robot interaction experiments to understand theoretical aspects of how gaze affects human-robot interaction.

Design Researcher, 2002–2003

United States Postal Service – Carnegie-Mellon University, Pittsburgh, PA

Worked as a part-time interaction designer for the USPS Documentation and Mailing System Design Project. My work involved complex data visualization, information architecture design, and conducting user studies.

Industrial Designer, 1999–2001

Arcelik Corporation, Design Group, Istanbul, Turkey

Worked at Europe’s 3rd largest home appliances manufacturer’s interdisciplinary in-house product development group. My main contributions included co-directing the design of a new line of refrigerators and washing machines and participation in an R&D project on home automation and smart appliances.

Academic Service

Short Papers Co-Chair, 2010

ACM/IEEE Human-Robot Interaction Conference (HRI), 2010

Program Committee Member, 2007–Present

ACM/IEEE Human-Robot Interaction Conference (HRI), 2010

IADIS International Conference on Interfaces and Human-Computer Interaction (ICHI), 2007, 2008

Paper Reviewer, 2004–Present

Interaction Studies Journal, 2009

IEEE Transactions on Robotics, 2008

IEEE Journal on Systems, Man and Cybernetics, Part A, 2008
ACM/SigCHI Conference in Human Factors in Computing (CHI), 2006, 2007, 2008, 2009
ACM/IEEE Human-Robot Interaction Conference (HRI), 2007, 2008, 2009
IEEE International Conference on Robotics and Automation (ICRA), 2007, 2009
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2009
ACM/SigCHI Conference on Computer Supported Collaborative Work (CSCW), 2008
ACM SIGGRAPH Conference, 2004, 2008, 2009
ACM Conference on Designing Pleasurable Products (DPPI), 2007
ACM/SigCHI Conference on Creativity and Cognition (CC), 2007
ACM Conference on Designing Interactive Systems (DIS), 2004
Graduate Student Mentor, 2005-2009
Carnegie Mellon University, Pittsburgh, PA, USA
Member of the university-wide “Graduate Peer-Mentor” Program
Faculty Hiring Committee Member, 2006
Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University,
Pittsburgh, PA, USA