

# Bilge Mutlu, Curriculum Vitae

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Human-Computer Interaction Institute  
School of Computer Science  
Carnegie Mellon University  
5000 Forbes Avenue, Pittsburgh, PA 15213, USA

Email: bilge@cs.cmu.edu  
URL: <http://www.cs.cmu.edu/~bilge>  
Mobile: 1-412-657-9175  
Fax: 1-412-268-1266

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**Research Interests** My research focuses on the design, development, and evaluation of embodied social interfaces as an interdisciplinary, integrated process. Within this process, I combine my background in Design with knowledge and methods in Social Psychology, Anthropology, and Computer Science in order to understand aspects of social interaction with technology, define design guidelines using this understanding, design and implement the necessary algorithms, and evaluate these implementations in order to create knowledge for future designs.

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**Education**

- PhD Student in Human-Computer Interaction, 2004 – 2009 (expected)**  
*Carnegie Mellon University, School of Computer Science, Pittsburgh, PA, USA*
- Master of Design in Interaction Design, Fulbright Fellow, 2004**  
*Carnegie Mellon University, School of Design, Pittsburgh, PA, USA*
- Master of Science in Product Design, 2003**  
*Istanbul Technical University, Institute of Science and Technology, Istanbul, Turkey*
- Bachelor of Industrial Design, Summa Cum Laude, 1999**  
*Middle East Technical University, Department of Industrial Design, Ankara, Turkey*

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**Research Experience**

- The SenseChair Project, Fall '05 – Present**  
*Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA*  
Working with Jodi Forlizzi and Jessica Hodgins in collaboration with Andreas Krause and Professor Carlos Guestrin in developing a novel machine learning application for recognizing seated activities.
- Project on People and Robots, Summer '03 – present**  
*Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA*  
Working with Jodi Forlizzi, Jessica Hodgins, Sara Kiesler, Sue Fussell, and Pamela Hinds (Stanford) in exploring aspects of Human-Robot Interaction through controlled experiments and ethnographic fieldwork.
- Project on Designing Abstract Social Interfaces, Spring '04 – Fall '05**  
*Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA*  
Worked with Jodi Forlizzi, Illah Nourbakhsh, and Jessica Hodgins in developing a method that uses abstract features and motion to design social interfaces. Using this method, designed, implemented, and qualitatively evaluated a social interface that responded the change in social environment in a hallway.
- Project on Human Attention, Fall '03 – Summer '04**  
*Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA*  
Worked with Jodi Forlizzi, Scott Hudson, and Robert Kraut on exploring aspects of visual highlighting and how its use in interfaces may affect attention.

**Project on Preventing Falls in the Aging Population**, Spring - Summer '03

*Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA*

Worked with Jodi Forlizzi and Scott Hudson on iteratively designing, prototyping, and evaluating wearable devices that monitored the activities of homebound elderly.

**Project on Emotion and Mood in Human Experience**, Spring - Summer '03

*Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA*

Worked with Jodi Forlizzi and Carl DiSalvo on developing a framework of how emotions and mood affect people's experiences with products and conducted a qualitative study using cultural probes.

**Research Workshop on Systems Design for Cultural Convergence**, June '98

*Hochschule fur Kunst und Design, Burg Giebichenstein – Halle, Germany*

Worked with Wolfgang Jonas and Gulay Hasdogan on developing infrastructure-level system design solutions to bring together socially divided Turkish and German communities living in Germany through conducting qualitative observations and interviews in Turkish and German neighborhoods in Berlin.

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Research  
Publications

**Refereed Full Conference Papers**

Mutlu, B., Krause, A., Forlizzi, J., Guestrin, C., and 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), October 2007, Newport, RI.

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

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

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

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 Conference on Designing for User Experiences (DUX'05), November 2005, Fort Mason, CA, USA.

Mutlu, B. and 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," In Proceedings of Design & Emotion 2004, Ankara, Turkey.

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

Mutlu, B. and 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, April 2003, Barcelona, Spain.

**Refereed Short Conference Papers**

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

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 Human-Robot Interaction Conference (HRI'06), March 2006, Salt Lake City, UT, USA.

Keyani, P., Hsieh, G., Mutlu, B., Easterday, M., and Forlizzi, J. (2005). **DanceAlong: Supporting Positive Social Exchange and Exercise for the Elderly Through Dance.** In Extended Abstracts of the Conference on Human Factors in Computing Systems (CHI'05), April 2005, Portland, OR, USA.

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### Journal Articles

Mutlu, B. and Er, H. A. (2003). **Global Marketing and Cultural Needs in New Product Development.** *PI: Journal of Marketing and Communication Culture*, Issue: 2, Number: 6, October 2003 (in Turkish).

### Theses

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.

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## Selected Honors

**Ford Motor Company Graduate Student Research Grant**, April '06

*Ford Motor Company, Dearborn, MI, USA*

**Fulbright Fellowship**, August '02

*US Department of State, Institute of International Education, Washington D.C., USA*

**Graduated Summa Cum Laude**, June '99

*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.

**German Ministry of Culture Research Grant**, June '98

*Systems Thinking & Problem Solving Workshop, Hochschule fur Kunst und Design, Burg Giebichenstein, Berlin, Germany*

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## Professional Experience

**Intern Researcher**, August '07 – December'07

*Intelligent Robotics and Communication Laboratory, ATR International, Japan*

Working as an intern researcher in Hiroshi Ishiguro's human-robot interaction group. My work at ATR involved conducting behavioral modeling to design humanlike gaze behavior for social robots and controlled experiments to understand theoretical aspects of how gaze affects human-robot interaction.

**Design Researcher**, August '02 – May '03

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

Worked as an interaction designer on USPS Documentation and Mailing System Design Project. Main contributions comprised of visualization of complex data, design of information architecture in documents, and conducting field study with users. Worked as a part of a team of 20 including graduate students and faculty members at the School of Design and the English Department.

**Design Consultant**, June '01 – June '02

*Niche, Inc., Design and Business Consultancy, Istanbul, Turkey*

Worked as a design consultant in a newly formed business and design consultancy group. Main contributions included managing and providing design services such as design planning, design strategy creation, corporate and product identity design, and product

design to a large portfolio of clients from a variety of industries.

**Industrial Designer, July '99 – June '01**

*Arcelik–Beko Corporation, Directorate of Industrial Design, Istanbul, Turkey*

Worked as a product designer in Europe's 3<sup>rd</sup> largest home appliances manufacturer in collaboration with five multidisciplinary product development teams. Main contributions included the co-directing of the design of new line of refrigerator and washing machines, and participation in an R&D project on home automation and smart appliances. Methods used include contextual research and participatory design activities to develop new product concepts, industrial design of refined concepts, prototyping using high-tech and conventional techniques, conducting user evaluations, and production preparation.

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**Publications of Professional Work**

**Interview: "Design and Delight," August '03**

*Art+Décor: Design + Architecture +Art Magazine, Issue: 125, August 2003, Istanbul, Turkey*

**Project Broadcast in National TV, January '01**

*"Industrial Design in Turkey" Documentary, National TV Broadcast TRT 2, Turkey*

**Publication of 9 Student Projects, January 1998, March 1999, January 1999**

*The Faculty Book, METU Faculty of Architecture Press, Ankara, Turkey*

*Department of Industrial Design Brochure, METU Faculty of Architecture Press, Ankara, Turkey*

*"Nesnel 1: Design Education in Turkey," Boyut Publication Group, Istanbul, Turkey*

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**Teaching Experience**

**Graduate Teaching Assistant, Fall '06**

*Carnegie Mellon University, Human-Computer Interaction Institute, Pittsburgh, PA, USA*

HCI Methods, Professors Bonnie John and Christine Newirth

**Graduate Teaching Assistant, Spring '03**

*Carnegie Mellon University, School of Design, Pittsburgh, PA, USA*

Graduate Design Seminar II, Professor Jodi Forlizzi

**Graduate Teaching Assistant, Fall '03**

*Carnegie Mellon University, School of Design, Pittsburgh, PA, USA*

Visual Interface and Interaction Design Course, Professor Jodi Forlizzi

**Guest Lecturer, April '03, '04, '05**

*Carnegie Mellon University, School of Design, Pittsburgh, PA, USA*

History of Object and Artifacts Undergraduate Course, Professor Craig Vogel

**Undergraduate Teaching Assistant, Fall '97 - Spring '99**

*Middle East Technical University, Department of Industrial Design, Ankara, Turkey*

Computing in Design Undergraduate Course

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**Professional Service**

**Program Committee Member, '07**

*IADIS International Conference on Interfaces and Human-Computer Interaction, 2007*

**Reviewer, '04 – '08**

*ACM/SigCHI Conference on Human Factors in Computing (CHI), 2008*

*ACM/IEEE Human-Robot Interaction Conference (HRI), 2008*

*ACM Conference on Designing Pleasurable Products (DPPI), 2007*

*ACM/SigCHI Conference on Creativity and Cognition (CC), 2007*

*ACM/SigCHI Conference on Human Factors in Computing (CHI), 2007*

*IEEE International Conference on Robotics and Automation (ICRA), 2007*

*ACM/IEEE Human-Robot Interaction Conference (HRI), 2007*

*ACM/SigCHI Conference on Human Factors in Computing (CHI), 2006*

*ACM Conference on Designing Interactive Systems (DIS), 2004*

*SigGRAPH Conference, 2004*

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Academic Service **Faculty Hiring Committee, '06**

*Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University,  
Pittsburgh, PA, USA*