

# Orit Shaer

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## Education

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|-----------|---|-------------------------|
| 2005-2008 | <b>TUFTS UNIVERSITY, DEPARTMENT OF COMPUTER SCIENCE</b><br>PhD in Computer Science<br>Dissertation: <i>A Visual Language for Programming Tangible User Interfaces</i> . Advisor Robert Jacob. | <b>Medford, MA</b>      |
| 2002-2004 | <b>TUFTS UNIVERSITY, DEPARTMENT OF COMPUTER SCIENCE</b><br>Master of Science in Computer Science  | <b>Medford, MA</b>      |
| 1998-2001 | <b>THE ACADEMIC COLLEGE OF TEL-AVIV</b><br>Bachelor of Arts degree in Computer Science  | <b>Tel-Aviv, Israel</b> |

## Experience

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|--------------|---|----------------------|
| 2008-Present | <b>WELLESLEY COLLEGE, DEPARTMENT OF COMPUTER SCIENCE</b><br>Clare Boothe Luce Assistant Professor | <b>Wellesley, MA</b> |
| 2003-2008    | <b>TUFTS UNIVERSITY, DEPARTMENT OF COMPUTER SCIENCE</b><br>Research Assistant                     | <b>Medford, MA</b>   |
| 2005-2006    | <b>UNIVERSITY COLLEGE LONDON, INTERACTION CENTRE</b><br>Honorary Research Fellow                  | <b>London, UK</b>    |
| 2003-2004    | <b>UNIVERSITY OF WASHINGTON, DESIGN MACHINE GROUP</b><br>Visiting Researcher                      | <b>Seattle, WA</b>   |
| 2000-2001    | <b>ORBOTECH LTD. R&amp;D DIVISION</b><br>System Engineer  | <b>Yavne, Israel</b> |
| 1998-2000    | <b>Software Developer</b>   |                      |

## Awards

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|------|---|
| 2009 | Clare Boothe Luce Professorship in Computer Science   |
| 2009 | Wellesley College Small Brachman-Hoffman Grant, “Enhancing Scientific Discovery through Reality-Based Interaction”      |
| 2009 | Wellesley College Educational Research and Development grant (with Franklyn Turbak), “Experimenting with Mobile Phones” |
| 2009 | Wellesley College Faculty Research Award, “Enhancing Human-Computer Interactions through Whole-body Movement”           |
| 2007 | Outstanding Graduate Contributor to Engineering Education, Tufts University.  |

## Professional Activities

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|---------------------|---|
| <b>Guest Editor</b> | ACM TOCHI, Special Issue on User Interface Description Languages for Next Generation User Interfaces, Spring 2009.  |
| <b>Panelist</b>     | NSF Broadening Participation in Computing, NSF Career program.  |
| <b>Program</b>      | International Conference on Tangible and Embedded Interaction (TEI), <b>Program Co-Chair</b> , 2010.  |
| <b>Committee</b>    | ACM UIST Symposium, 2010.<br>ACM CHI Workshop on Evaluating Reality-Based Interfaces, 2009.<br>International Conference on Tangible and Embedded Interaction (TEI) 2007-2008. |

**Workshop  
Organizer  
Reviewer**

Computer Aided Design of User Interfaces (CADUI) 2008.  
ACM CHI Workshop on User Interface Description Languages for Next Generation User Interfaces (with Rob Jacob, Mark Green, Kris Luyten)  
ACM CHI 2005-2010, ACM TEI 2007-2008  
The Journal of Personal and Ubiquitous Computing, International Journal of Arts and Technology,  
The Journal of Advances in Human-Computer Interaction, IwC Journal (Interacting with Computers)  
IEEE Transactions on Systems, Man, and Cybernetics  
Artificial Intelligence for Engineering Design, Analysis and Manufacturing

**Invited Talks** (recent)

**Reality-Based Interfaces for Collaborative Exploration**

Olin College of Engineering. Human Factors and Interface Design, October 2009.

**A Specification Paradigm for the Design and Implementation of Tangible User Interfaces**

MIT CSAIL, HCI Seminar Series, May 2009.

**Specifying and Programming Next Generation User Interfaces**

Northeastern University, Computer Science Department, CISTers, November 2008.

**Reality Based Interaction: Understanding Next Generation User Interfaces**

BostonCHI, Sun Microsystems, June 2008.

**Selected Publications**

**Dissertation**

- O. Shaer, “A Visual Language for Specifying and Programming Tangible User Interfaces”, Doctoral Thesis, Computer Science Department, Tufts University, Medford, MA, 2008.

**Journal and Magazine Articles (Peer Reviewed)**

- O. Shaer, E. Hornecker, “Tangible User Interfaces: Past, Present, and Future Directions”, *Foundations and Trends in Human-Computer Interaction*, Spring 2010 (in press).
- O. Shaer, R.J.K Jacob, “A Specification Paradigm for the Design and Implementation of Tangible User Interfaces”, *ACM Transactions on Computer-Human Interaction (TOCHI)*, Vol. 16, No. 4, November 2009.
- O. Shaer, M.S. Horn, R.J.K. Jacob, “Tangible User Interface Laboratory: Teaching Interaction Design in Practice”, *AIEDAM Special Issue on Tangible Interaction for Design*, Spring 2009, Vol 23, No. 2.
- O. Shaer, N. Leland , E.H Calvillo and R.J.K. Jacob, "The TAC Paradigm: Specifying Tangible User Interfaces", *Personal and Ubiquitous Computing* , vol. 8, no. 5, pp. 359-369, September 2004.
- R.J.K. Jacob, A. Girouard, L.M. Hirshfield, M. Horn, O. Shaer, E.T. Solovey, and J. Zigelbaum, “What Is the Next Generation of Human-Computer Interaction?”, *interactions*, vol. 14, no. 3, pp. 53-58, May 2007.

**Conference Papers (Peer Reviewed)**

- O. Shaer, G. Kol, M. Strait, C. Fan, C. Grevet, and S. Elfenbein, “G-nome Surfer: a Tabletop Interface for Collaborative Exploration of Genomic Data”, *ACM CHI 2010 Human Factors in Computing Systems Conference*, ACM Press, April 2010 (in print). (Acceptance rate %22)
- D. Garrahan, O. Shaer, A. Piplica, K. Gold. Leveraging Gesture and Voice Data to Improve Group Brainstorming. Work In Progress, *ACM CHI 2010 Human Factors in Computing Systems Conference*, Extended Abstracts, (in print).
- R.J.K. Jacob, A. Girouard, L.M. Hirshfield, M.S. Horn, O. Shaer, E.T. Solovey, and J. Zigelbaum, “Reality-Based Interaction: A Framework for Post-WIMP Interfaces”, *ACM CHI 2008 Human Factors in Computing Systems Conference*, ACM Press, April 2008. (Acceptance rate 22%)
- O. Shaer, R.J.K Jacob, M. Green, K. Luyten, “User Interface Description Languages for Next Generation User Interfaces”, *ACM CHI 2008 Human Factors in Computing Systems Conference*, Workshop Abstract, April 2008. (Acceptance rate 40%)
- A. Bean, S. Siddiqi, A. Chowdhury, B. Whited, O. Shaer, R.J.K Jacob “Marble Track Audio Manipulator (MTAM): A Tangible User Interface for Audio Composition”, *Proc. TEI 2008 International Conference on Tangible and Embedded Interaction*, February 2008. (Acceptance rate 40%)
- R.J.K. Jacob, A. Girouard, L.M. Hirshfield, M.S. Horn, O. Shaer, E.T. Solovey, and J. Zigelbaum, “Reality-Based Interaction: Unifying the New Generation of Interaction Styles,” *ACM CHI 2007 Human Factors in Computing Systems Conference*, ACM Press, Work in Progress paper, April 2007. (Acceptance rate 40%)
- A. Girouard, E.T. Solovey, L. Hirshfield, S. Ecott, O. Shaer, and R.J.K. Jacob, “Smart Blocks: A Tangible Mathematical Manipulative,” *Proc. TEI 2007 International Conference on Tangible and Embedded Interaction*,

February 2007. (Acceptance rate 40%)

- J. Zigelbaum, M. Horn, O. Shaer, and R.J.K. Jacob, “The Tangible Video Editor: Collaborative Video Editing with Active Tokens,” Proc. TEI 2007 First International Conference on Tangible and Embedded Interaction, February 2007. (Acceptance rate 40%)
- O. Shaer and R.J.K. Jacob, “A Visual Language for Programming Reality-Based Interaction”, IEEE Symposium on Visual Languages and Human-Centric Computing, Graduate Student Consortium, September 2006.
- O. Shaer “A Framework for Building Reality-Based Interfaces for Wireless-Grid Applications”, ACM CHI 2005, Doctoral Consortium, April 2005. (Acceptance rate 24%).

### **Workshop Papers (Peer Reviewed)**

- O. Shaer, “Exploring Reality-Based Interaction through Whole-Body Movement”, ACM CHI 2009 Workshop on Whole Body Interaction, ACM CHI, April 2009.
- E.T. Solovey, O. Shaer, A. Girouard, L.M. Hirshfield, M.S. Horn, J. Zigelbaum, R.J.K. Jacob. “Programming Reality Within the Reality-Based Interaction Framework”, ACM CHI 2009 Workshop on Organic User Interfaces, ACM CHI, April 2009.
- M.S. Horn, O. Shaer, A. Girouard, L.M. Hirshfield, E.T. Solovey, J. Zigelbaum, and R.J.K. Jacob, “Putting Tangible User Interfaces in Context: A Unifying Framework for Next Generation HCI”, Proc. ACM CHI 2007 Workshop on Tangible User Interfaces in Context and Theory, April 2007.
- O. Shaer and R.J.K. Jacob, "Toward a Software Model and a Specification Language for Next-Generation User Interfaces," Proc. ACM CHI 2005 Workshop on The Future of User Interface Software Tools, April 2005.

### **Supervised Students**

- Megan Strait, Consuelo Valdes, Michael Lintz (Olin), Lauren Cahillane, “Supporting Genomic Research through Reality-Based Interaction”, Wintersession Research, Wellesley College, 2010.
- MaCherie Edwards, “A TableTop Interface for Enhancing the Davis Museum Experience”, independent study, Wellesley College, Spring 2010.
- Lia Napolitano, “A Mobile User Interface for Enhancing the Davis Museum Experience”, independent study, Wellesley College, Fall 2009, Spring 2010.
- Catherine Grevet, Megan Strait, Sarah Elfenbein, Chloe Fan, “A Tabletop Interface for Genomic Exploration”, Wellesley College Science Center Summer Research Program, 2009.
- Chloe Fan, Wellesley College, “Wiimote Integration in Multimedia Applications”, MAS Thesis, 2008-2009.