

Tomer Moscovich

San Francisco, CA

<http://www.moscovich.net/tomer>
tomermoscovich.net

EXPERIENCE

Lab 126—an Amazon Company

Cupertino, CA

Interaction Researcher

January 2010—Present

Design and prototype product concepts and associated interaction models using emerging input and output technologies. Advise user experience and software teams on design possibilities and best practices associated with new hardware components. Provide technical and user-centered guidance for company's technology roadmap and research agenda. Investigate relevant technologies and develop software methods to maximize performance of immature technology to enable feasibility evaluation.

Touchco Inc.

New York, NY

Interaction Research Lead

June 2009—January 2010

Interaction Research: Developed novel interaction methods and product concepts to showcase design possibilities of force-sensing multi-touch input. Advised clients on multi-touch interaction design and best practices. Conducted usability studies. Developed novel input device concepts and drafted patent applications.

Product Development: Developed algorithms for accurate contact extraction and tracking from raw sensor data, algorithms for palm and pen detection, and methods for sensor calibration and testing. Designed and documented touch library APIs.

INRIA at Université Paris-Sud

Paris, France

Postdoctoral Fellow

July 2008—July 2009

Designed and implemented novel touchscreen input techniques, as well as new means for navigating large network visualizations. Developed visualizations supporting group awareness in large-scale remote collaboration. Designed, conducted, and analyzed usability studies of these new methods.

University of Toronto

Toronto, Ontario

Postdoctoral Fellow

January 2007—July 2008

Conducted research on novel touch- and pen-based input methods, feedback mechanisms for touch input, and interaction with peripheral displays. Supervised research on uses of haptic-feedback for interaction, search-based interfaces, and alertness-monitoring in sleep patients.

Brown University

Providence, RI

Research Assistant

September 1999—December 2006

Conducted research on multi-touch interaction, document navigation and scrolling, animation sketching, and immersive 3D illustration. Designed and implemented novel interaction methods, and conducted usability and human-factors studies. Authored and presented course lectures. Supervised undergraduate research projects.

University of Tokyo*Visiting Researcher*

Tokyo, Japan

Summer 2004

Developed a multi-touch performance animation technique based on a fast constraint-based shape deformation method. Deformation method has since been integrated into commercial motion graphics and photo editing software.

Microsoft Research*Research Intern*

Redmond, WA

Summers 2001—2003

Research topics included customizable presentations (2001), reflowable digital ink annotation (2002), video annotation and handwriting beautification (2003).

PUBLICATIONS**Refereed Conference Publications**

Moscovich, T. "Contact Area Interaction with Sliding Widgets." In *Proceedings of UIST 2009* (October 2009) Victoria, Canada.

Chu G., Moscovich, T., Balakrishnan, R. "Haptic Conviction Widgets." In *Proceedings of Graphics Interface 2009* (May 2009) Kelowna, Canada.

Moscovich, T., Chevalier, F., Henry, N., Pietriga, E., Fekete, J.D. "Topology-Aware Navigation in Large Networks." In *Proceedings of CHI 2009* (April 2009) Boston, USA.

Bi, X., Moscovich, T., Ramos, G., Balakrishnan, R., Hinckley, K. "An Exploration of Pen Rolling for Pen-based Interaction." In *Proceedings of UIST 2008* (October 2008) Monterey, USA.

Moscovich, T., Hughes, J. F. "Indirect Mappings of Multi-touch Input Using One and Two Hands." In *Proceedings of CHI 2008* (April 2008) Florence, Italy.

Moscovich, T., Hughes, J. F. "Multi-finger Cursor Techniques." In *Proceedings of Graphics Interface 2006* (June 2006) Quebec City, Canada.

Igarashi, T., Moscovich, T., Hughes, J. F. "As-Rigid-As-Possible Shape Manipulation." *ACM Transactions on Graphics* 24(3) (July 2005) Los Angeles, USA.

Igarashi, T., Moscovich, T., Hughes, J.F. "Spatial Keyframing for Performance-Driven Animation." *ACM SIGGRAPH / Eurographics Symposium on Computer Animation* (July 2005) Los Angeles, USA.

Moscovich, T., Hughes, J.F. "Navigating Documents with the Virtual Scroll Ring." In *Proceedings of UIST 2004* (November 2004) Santa Fe, USA.

Barger, D., Moscovich, T. "Reflowing Digital Ink Annotations." In *Proceedings of CHI 2003* (April 2003) Fort Lauderdale, USA.

Keefe, D., Acevedo, D., Moscovich, T., Laidlaw, D., and LaViola, J. "CavePainting: A Fully Immersive 3D Artistic Medium and Interactive Experience." In *Proceedings of the 2001 Symposium on Interactive 3D Graphics* (March 2001) Raleigh, USA.

Refereed Abstracts and Presentations

Moscovich, T. "Multi-touch Interaction." In *Extended Abstracts of the Conference on Human Factors in Computing Systems* (April 2006) Montréal, Canada. (CHI 2006 Doctoral Consortium Participant).

Moscovich, T., Igarashi, T., Rekimoto, J., Fukuchi, K., Hughes, J.F. "A Multi-finger Interface for Performance Animation of Deformable Drawings." Demonstration at *UIST 2005 Symposium on User Interface Software and Technology* (October 2005) Seattle, USA.

Moscovich, T., Karpenko, O. "Multi-Fingered Interfaces for Sculpting of Generalized Cylinders." Poster Abstract in *ACM SIGGRAPH 2005 Symposium on Interactive 3D Graphics and Games* (April 2005) Washington, DC, USA.

Ph.D. Dissertation

Moscovich, T. "Principles and Applications of Multi-touch Interaction." Dissertation. Brown University. 2007.

Technical Reports

Moscovich, T., Hughes J.F. "Animation Sketching: An Approach to Accessible Animation." *Technical Report CS-04-03*, Computer Science Department, Brown University.

Moscovich, T., Scholz, K., Hughes, J.F., Salesin, D.H. "Customizable Presentations." *Technical Report CS-04-16*, Computer Science Department, Brown University.

Granted Patents

Bargeron, D., Moscovich, T., Shilman, M., Wei, Z. "Digital ink annotation process and system for recognizing, anchoring and reflowing digital ink annotations," *Patent #7,218,783*.

EDUCATION

Brown University, Providence, RI
Ph.D. in Computer Science, May 2007
Dissertation: Principles and Applications of Multi-touch Interaction
Advisor: John F. Hughes

Brown University, Providence, RI
Sc.M. in Computer Science, May 2001

New York University, New York, NY
B.A. in Computer Science and Mathematics, May 1999

SKILLS

Excellent ideation and prototyping skills.
Usability evaluation, user study design and analysis.
Expertise in 2D and 3D computer graphics.
Programming languages: Java, C#, C++, C, Matlab.

SERVICE

Associate Chair of the Program Committees for UIST 2010, CHI 2011 and CHI 2012.

Reviewer for:

CHI, UIST, SIGGRAPH, GI, Eurographics, SIGGRAPH Asia, IEEE 3DUI, IJHCS, ITS,
CSCW, IEICE, ACM SIGGRAPH/Eurographics Symposium on Computer Animation,
Eurographics Workshop on Sketch-Based Interfaces and Modeling.

AWARDS

Kanellakis Fellowship	2006
Pixar Fellowship	2004, 2005
Microsoft Fellowship	2003
Brown University Fellowship	1999

CITIZENSHIP

United States