

TOMER MOSCOVICH

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RESEARCH INTERESTS

Fluid interaction techniques, whole-hand and multi-touch input, interactive displays, computer supported visual communication.

EDUCATION

Brown University – Providence, RI
1999 – 2007

Ph.D. in Computer Science, May 2007.
Sc.M. in Computer Science, May 2001.

New York University – New York, NY
1995 – 1999

BA in Computer Science and Mathematics, May 1999.

PAPERS

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

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

T. Igarashi, T. Moscovich, J. F. Hughes. “Spatial Keyframing for Performance-driven Animation.” *ACM SIGGRAPH / Eurographics Symposium on Computer Animation*, Los Angeles, USA, 2005.

T. Moscovich, J. F. Hughes “Navigating Documents with the Virtual Scroll Ring.” In *Proceedings of UIST 2004*, Santa Fe, NM, November 2004.

D. Barger, T. Moscovich. “Reflowing Digital Ink Annotations.” In *Proceedings of CHI 2003*, Fort Lauderdale, FL, April 2003.

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

REFEREED ABSTRACTS AND PRESENTATIONS

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

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

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

**TECHNICAL
REPORTS**

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

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

**RESEARCH
EXPERIENCE**

University of Toronto – Toronto, ON
2007 – Present

Postdoctoral Researcher

Research: Conducted research on the use of touch- and pen-based input for human-computer interaction.

Advising: Co-supervised graduate student research. Supervised undergraduate research projects.

Brown University – Providence, RI
1999 – 2007

Researcher

Multi-touch Interaction: Designed multi-touch interaction techniques for animation and graphical manipulation.

Scrolling: Developed a device-independent scrolling technique. Designed and ran a study comparing its effectiveness to existing methods.

Animation Sketching: Designed layered motion recording interface for easily creating rough animation. Work focused on techniques for motion coordination and increasing complexity.

Cave Painting: Developed interaction techniques for creating three dimensional paintings in an immersive virtual-reality environment.

University of Tokyo – Tokyo, Japan
Summer 2004

Visiting Researcher

Deformable Drawings: Developed a system for bending 2D drawings to allow for quick key-frame specification, as well as performance animation. Experimented with multi-finger deformation interfaces.

Microsoft Research – Redmond, WA
Summers 2001, 2002, 2003

Research Intern

Reflowing Digital Ink Annotations: Devised and implemented techniques for rerendering digital ink annotations so they agree with their underlying document after it has been edited or reflowed. Planned and conducted a user study examining user reactions to and expectations of a pen-based digital annotation system with annotation-reflow capabilities.

Adaptable Presentations: Developed methods for creating and controlling presentations that can be easily customized at run-time for length and content. Created visualizer/control tool for non-linear navigation of a PowerPoint deck.

Handwriting Beautification: Experimented with techniques for making on-line handwriting more legible. Developed techniques for clustering similar handwriting segments, and for extracting de-

scriptive handwriting statistics.

New York University – New York, NY
1998 – 1999

Research Assistant

Real-time visualization of extremely large images over a thin wire. Implemented improved algorithms for reconstructing large images from their constituent pieces.

University of Iowa – Iowa City, IA
Summer 1998

Researcher

National Science Foundation Research Experience for Undergraduates program. Designed reactive controllers for ambient traffic simulation in a virtual driving environment. Analyzed simulation records to create realistic car behavior.

**TEACHING
EXPERIENCE**

Brown University – Providence, RI

Instructor for CS 224 – Interactive Computer Graphics
Spring 2004

Designed new curriculum for a graduate level course, including lectures and assignments. Prepared and delivered a third of the lectures. Managed undergraduate teaching assistants. Mentored students whose final project placed first in the Undergraduate Research Competition at SIGGRAPH 2004.

Teaching Assistant for CS 224 – Interactive Computer Graphics
Spring 2001, Spring 2006

Designed and graded assignments. Organized reading sections. Delivered UI lectures. Mentored final project groups.

Teaching Assistant for CS 32 – Introduction to Software Engineering
Fall 2002

Prepared and gave introductory C++ lectures. Assisted students in labs and assignments, mentored final project groups.

**PROFESSIONAL
ACTIVITIES**

Reviewer for CHI, UIST, and Eurographics.

**TECHNICAL
SKILLS**

Programming Languages

Java, C#, C++, C, JavaScript, Python, Prolog.

Tools

MATLAB, Mathematica, L^AT_EX, Adobe Photoshop, Adobe Illustrator.

REFERENCES

Available upon request.