

Full Vita
Tamara Munzner

University of British Columbia, Department of Computer Science
2366 Main Mall, Vancouver, B.C. V6T 1Z4 Canada
web: <http://www.cs.ubc.ca/~tmm>, email: tmm@cs.ubc.ca, voice: 604 827-5200, fax: 604-822-8989

Education

BS, Computer Science, Stanford University, 1991
PhD, Computer Science, Stanford University, September 2000
Enrolled September 1995-June 2000
Dissertation: Interactive Navigation of Large Graphs and Networks
Advisor: Pat Hanrahan

Research Interests

Computer graphics and visualization: information visualization, graph drawing, mathematical visualization, interactive 3D graphics, pedagogical animation creation.

Awards

National Science Foundation Graduate Research Fellowship
Microsoft Graduate Research Fellowship

Experience

University of British Columbia
7/02–present, Assistant Professor

Compaq Systems Research Center
9/00–5/02, Research Scientist
Started and led Olduvai project on bioinformatics visualization.

Microsoft Research
6/98–9/98, Intern, User Interfaces Group
Started Constellation research project for visualizing linguistic queries (completed after returning to Stanford).

Silicon Graphics, Inc
3/96–6/98, Part-Time Consultant and Intern
Integrated my research software for visualizing graphs in 3D hyperbolic space into a Web site management product.

Technical University of Berlin

5/95–7/95, *Visiting Researcher*

Continued work on visualizing graphs in 3D hyperbolic space as a visitor to the Differential Geometry and Quantum Physics group (SFB 288).

The Geometry Center

(The National Science and Technology Research Center for Computation and Visualization of Geometric Structures)

6/92–5/95, *Senior Technical Staff*

6/91–6/92 *Apprentice*

Created interactive software for and videos using mathematical visualization at many points on the research-education spectrum, provided consulting and technical support for visiting researchers, supervised apprentices.

Geometry Supercomputer Project

6/90–9/90, *Summer Intern*

Extended interactive 3D graphics software to provide RenderMan snapshot capabilities.

ETA Systems

(former supercomputer subsidiary of Control Data)

6/86–9/88, *Summer and Part-Time Intern*

Ported large-scale FORTRAN code to Cyber 205, wrote graphics metafile translator, provided technical support for summer student institute.

Professional Activities

Program Committee

IEEE Symposium on Information Visualization 2002 (Boston) [Interactive Posters Chair]

IEEE Symposium on Information Visualization 2001 (San Diego) [Interactive Posters Chair]

IEEE Symposium on Information Visualization 2000 (Salt Lake City)

Asilomar Microcomputer Workshop 2002 (Monterey)

Asilomar Microcomputer Workshop 2001 (Monterey)

Internet Statistics and Metrics Analysis (ISMA): Network Visualization 1999 (San Diego)

DIMACS Workshop on External Memory Algorithms and Visualization 1998 (Piscataway)

VisMath '97 (Berlin)

VRML '97 (Monterey)

Reviewer

SIGGRAPH, UIST, IEEE Symposium on Information Visualization, IEEE Computer Graphics and Applications, Symposium on Interactive 3D Graphics, VRML, ACM Symposium on Computational Geometry (video proceedings)

Departmental

PhD admissions committee, Stanford

Journal Publications

Kirsten Ridsen, Mary P. Czerwinski, Tamara Munzner, Daniel B. Cook. An initial examination of ease of use for 2D and 3D information visualizations of web content, *International Journal of Human Computer Studies*, 53(5), pages 695–714, Academic Press, November 2000.

Tamara Munzner. Exploring Large Graphs in 3D Hyperbolic Space, *Computer Graphics and Applications*, 18(4), pages 18–23, IEEE Computer Society Press, July/August 1998.

Andrew Hanson, Tamara Munzner, and George Francis. Interactive Methods for Visualizable Geometry, *Computer*, 27(4), pages 73–83, IEEE Computer Society Press, July 1994.

Editorial Activities

Tamara Munzner. Guest Editor’s Introduction to Special Issue on Information Visualization, *Computer Graphics and Applications*, 22(1), pages 20–21, IEEE Computer Society Press, Jan/Feb 2002.

Conference Publications

Maneesh Agrawala, Denis Zorin, Tamara Munzner. Artistic Multiprojection Rendering, *Proceedings of the Eurographics Rendering Workshop 2000*, pages 125–136, Eurographics, June 26-28 2000.

Tamara Munzner, Francois Guimbretiere, and George Robertson. Constellation: A Visualization Tool For Linguistic Queries from MindNet, *Proceedings of the 1999 IEEE Symposium on Information Visualization*, pages 132–135, IEEE Computer Society Press, Oct 25-26 1999.

Tamara Munzner. Drawing Large Graphs with H3Viewer and Site Manager, *Proceedings of Graph Drawing ’98*, pages 384–393, Springer-Verlag Lecture Notes in Computer Science 1547, August 1998.

Tamara Munzner. H3: Laying Out Large Directed Graphs in 3D Hyperbolic Space, *Proceedings of the 1997 IEEE Symposium on Information Visualization*, pages 2–10, IEEE Computer Society Press, Oct 20-21 1997.

Tamara Munzner, Eric Hoffman, K. Claffy, and Bill Fenner. Visualizing the Global Topology of the MBone, *Proceedings of the 1996 IEEE Symposium on Information Visualization*, pages 85–92, IEEE Computer Society Press, Oct 28-29 1996.

Tamara Munzner and Paul Burchard. Visualizing the Structure of the World Wide Web in 3D Hyperbolic Space, *Proceedings of VRML ’95*, pages 33–38, ACM SIGGRAPH, Dec 14–15 1995.

Dissertation

Tamara Munzner. Interactive Visualization of Large Graphs and Networks, PhD Dissertation, Stanford University, Computer Science Department, June 2000.

Communications

Nina Amenta, Stuart Levy, Tamara Munzner, and Mark Phillips. Geomview: a system for geometric visualization, *Proceedings of the 11th Annual ACM Symposium on Computational Geometry*, pages C12–C13, (communication), 1995.

Mark Phillips, Silvio Levy, and Tamara Munzner. Geomview: An Interactive Geometry Viewer, *Notices of the American Mathematical Society*, 40(8), pages 985–988, (Computers and Mathematics Column), Oct 1993.

Major Videos

Outside In

Directors: Silvio Levy, Delle Maxwell, and Tamara Munzner. Also co-animator.

Publisher: AK Peters, 1994.

22-minute mathematical video about turning a sphere inside out, shown in the SIGGRAPH 94 Electronic Theater. Won awards at NICOGRAPH, the London Effects and Animation Festival, Prix Pixel Imagina, Prix Ars Electronica and the International Congress of Mathematicians VideoMath Festival.

The Shape of Space

Directors: Delle Maxwell and Tamara Munzner. Also co-animator.

Publisher: Key Curriculum Press, 2000.

11-minute mathematical video introducing the basic concepts of 2- and 3-manifolds, shown at the SIGGRAPH 95 Electronic Theater.

Four-Polytopes and a Funeral (for my Conjecture)

With Nina Amenta.

5-minute technical video, 1995 Computational Geometry Symposium Video Proceedings.

Released Software

H3/H3Viewer

Source release of 3D hyperbolic graph viewer.

Site Manager

SGI product for webmasters incorporating 3D hyperbolic graph viewer, bundled with Irix.

Geomview

Public domain 3D interactive visualization package with thousands of users worldwide.

Triangle Tiling

Exhibit on permanent display at the Science Museum of Minnesota, shown at SIGGRAPH 94.

Selected Popular Press

Scientific American

Cover image in October 1993. Inside images January 1999 (p 67).

Wired

Inside image in the November 1997 issue (5.11, p 194).

National Geographic

My work and images were the subject of the January 2000 CartoGraphic column (197:1, p 140).

Courses

Short Courses

AMS Workshop on Basic Issues on Computer-aided Math Visualization.

Two-day course held in conjunction with the American Mathematical Society / Mathematics Association of America joint summer meeting, August 1994. With Mark Phillips and Stuart Levy.

Teaching Assistant

CS348C: Virtual Reality, (Winter 95-96)

CS348C: Visualizing Computer Systems, (Fall 96-97)

CS348B: Image Synthesis Techniques (Spring 97-98)

Conference Presentations

Quintessence: The Clumpy Matter of Art, Science and Math Visualization, Banff AL, 9/02.

Visual Comparison of Large Evolutionary Trees.

Asilomar Microcomputer Workshop, Asilomar CA, 4/00.

Video Topology.

Visualization 99, San Francisco CA, 10/99.

Spoke on *In Search Of: Prescriptive Advice for Visualization* at *Visualization Needs More Visual Design!* panel.

Workshop on Data Visualization, Memphis TN, 6/99.

Interactive Navigation of Large Graphs and Networks.

Asilomar Microcomputer Workshop, Asilomar CA, 4/99.

Interactive Navigation of Large Networks.

DIMACS Workshop on External Memory Algorithms and/or Visualization, Rutgers NJ, 5/98.

Guaranteed Frame Rate Drawing for Interactive Navigation of Large Graphs.

Hackers Conference 13, Santa Rosa CA, 11/97.

H3: Laying Out Large Directed Graphs in 3D Hyperbolic Space.

SIGGRAPH 97, Los Angeles CA, 8/97.

Gave lecture *Survey of Visualization Toolkits* as part of a half-day course “Design and Application of Object-Oriented 3D Visualization Systems” with Tom Citriniti, Ken Martin, and Bill Lorenson.

World Movers, San Francisco CA, 2/97.

Information Visualization with VRML.

Visualization 96, San Francisco CA, 11/96.

Mathematical Visualization: Standing at the Crossroads panel moderator and co-organizer (won Best Panel award).

Workshop on Software and Mathematical Visualization, Princeton NJ, 6/96.

Visualizing the Global Topology of the MBone

Imagina 96, Monte Carlo, Monaco, 2/96.

Dimension, Space, Information Visualization and the Web

SIGGRAPH 95, Los Angeles CA, 8/95.

Gave lectures *Visualizing Mathematics through Interactive Software* and *Visualizing Mathematics through Video* as part of full-day course "Visualizing Mathematics" with David Banks, Jim Blinn, Scott Kim, and Nelson Max.

SIGGRAPH 95, Los Angeles CA, 8/95.

Spoke at *3D Graphics through the Internet* panel.

International Workshop on Visualization and Mathematics, Technical University of Berlin (SFB288), Berlin Germany, 6/95.

Integrating 3D Visualization with the World Wide Web.

World Wide Web Fall 1994 Conference, Chicago IL, 10/94.

Spoke at Visualization and the Web panel on *Visualization through the World Wide Web with Geomview, Cyberview, W3Kit, and WebOOGL* (joint work with Paul Burchard and Ed H. Chi).

Fourth MSI Workshop on Computational Geometry, Cornell University, Ithaca NY, 10/94.

Gave a talk *Visualization Videos* and an informal demo on *Mathematical Visualization Using Geomview*.

Regional Geometry Institute, Smith College, Amherst MA, 7/93.

Mathematical Visualization Using Geomview.

Second MSRI Conference on Geometric Visualization, Mathematical Sciences Research Institute, Berkeley CA, 10/92 (with Mark Phillips and Stuart Levy).

Introduction to Geomview.

Invited Talks

Usenix 2002, Monterey, 6/02

Information Visualization for Systems People

University of Calgary, 9/02
University of British Columbia, Vancouver, 4/02
UC Santa Cruz, Santa Cruz, 4/02
University of Minnesota, Minneapolis, 4/02
UC Davis, Davis, 4/02
University of Utah, Salt Lake City, 3/02
Georgia Tech, Atlanta, 3/02

Interactive Visualization of Large Trees and Graphs

New York Academy of Sciences, New York, 2/02
Visual Structural Comparison Between Evolutionary Trees

UT Austin, Austin, 3/01.
UC Berkeley, Berkeley, 10/00.
CWI, Amsterdam Netherlands, 7/00.
Philips Design, Eindhoven Netherlands, 7/00.
Graz University of Technology, Graz Austria, 7/00.
Compaq SRC, Palo Alto CA, 5/00.
Lucent/Bell Labs, Naperville IL, 4/00.

Interactive Visualiation of Large Graphs and Networks

CAIDA, San Diego CA, 11/98.
HP Labs, Palo Alto CA, 11/98.
Bell Labs, Murray Hill NJ, 2/98.
AT&T Research, Florham Park NJ, 2/98.

Fast Layout and Drawing of Large Directed Graphs Using Spanning Trees in 3D Hyperbolic Space

Alexa, San Francisco CA, 1/98.
AT&T Research, Florham Park NJ, 9/97.
UC Santa Cruz, Santa Cruz CA, 6/97.

H3: Laying Out Large Directed Graphs in 3D Hyperbolic Space

SRI, Menlo Park CA, 4/98.
MSRI, Berkeley CA, 12/96.
BayCHI, Palo Alto CA, 11/96.

Visualizing the Web in 3D Hyperbolic Space

MSRI, Berkeley CA, 12/96.
Interval Research, Palo Alto CA, 12/96

Visualizing the Global Topology of the MBone

University of Bielefeld, Bielefeld Germany, 7/95.
University of Bonn, Bonn Germany, 7/95.

The Making of Outside In and The Shape of Space

Apple, Sunnyvale CA, 2/96.
University of Bielefeld, Bielefeld Germany, 7/95.
University of Bonn, Bonn Germany, 7/95.
ZIB, Berlin Germany, 6/95.

Integrating 3D Visualization with the World Wide Web

Spelman College, Atlanta GA, 2/95.

Exploring Science through Video, 3D Visualization in Science

Atlanta College of Art, Atlanta GA, 2/95.

Visualizing the Invisible

Spelman College, Atlanta GA, 2/95.

Swarthmore-Bryn Mawr Joint Visualization Project, Swarthmore PA, 6/94.

Gustavus Adolphus College, St. Peter MN, 11/93.

St. John's College, Collegeville MN, 11/93.

Mathematical Visualization Using Geomview