

# Steven J. Gortler

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## RESEARCH INTERESTS

Computer Graphics, geometry, numerical techniques.

## EDUCATION

January 1995	Ph.D. Computer Science	Princeton University
	Thesis: Wavelet Methods for Computer Graphics	
	Advisor: Michael Cohen	
Spring 1991	M.A. Computer Science	Princeton University
Spring 1989	B.A. Computer Science and Applied Math	Queens College/CUNY

## PROFESSIONAL EXPERIENCE

7/03 –	<b>Robert I. Goldman Professor of Computer Science</b> , Harvard University, School of Engineering and Applied Sciences.
9/98 – 6/10	<b>Director of Undergraduate Studies, Computer Science</b> , Harvard University, School of Engineering and Applied Sciences.
7/00 – 6/03	<b>Associate Professor of Computer Science</b> , Harvard University, School of Engineering and Applied Sciences.
9/96 – 6/00	<b>Assistant Professor of Computer Science</b> , Harvard University, School of Engineering and Applied Sciences.
9/98 – 6/04	<b>Research Affiliate</b> , MIT, Laboratory for Computer Science
6/98 – 8/98	<b>Visiting Scientist</b> , MIT, Laboratory for Computer Science
9/94 – 8/96	<b>Post Doctoral Researcher</b> , Microsoft Research
9/94 – 8/96	<b>Visiting Scholar</b> , University of Washington.

## **AWARDS**

**Joseph R. Levenson Memorial Teaching Prize**, Nominee, 2003

**SIGGRAPH** Significant New Researcher Award 2002

**Sloan Fellowship Award**, 1998

**NSF Career Award**, 1997

## **FUNDING**

**BSF Grant**, 2007

“Geometric Algorithms for Routing in Sensor Networks”

**NSF Grant**, 2002

“Irregular and Optimized Representations for Image Based Rendering”

**Microsoft Research Gift**, 1999, 2000, 2001, 2002

“Mesh Computation”

**IBM Partnership award**, 1997

“Lumigraph Compression”

## TEXTBOOK

### **Foundations of 3D Computer Graphics**

S. J. Gortler

To be published by MIT Press, Spring 2012

## SELECTED PUBLICATIONS

### **Shape from specular flow: Is one flow enough?**

Y. Vasilyev, T. Zickler, S. J. Gortler and O. Ben-Shahar

In IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2011

### **Characterizing the Universal Rigidity of Generic Frameworks**

S.J. Gortler and D. Thurston

In *arXiv:1001.0172*

### **On Affine Rigidity**

S.J. Gortler, C. Gotsman, L. Liu and D. Thurston

In *arXiv:1011.5553*

### **Characterizing Generic Global Rigidity**

S.J. Gortler, A. Healy, and D. Thurston

In *American Journal of Math 2010*

### **An As-Rigid-As-Possible Approach to Sensor Network Localization**

L. Zhang, L. Liu, C. Gotsman and S.J. Gortler

In *ACM Trans. Sensor Networks 2010*

### **Sensor Network Localization Using Sensor Perturbation**

Y. Zhu, S.J. Gortler and D. Thurston

In *INFOCOM 2009 (minicoference)* and *ACM Trans. Sensor Networks 2011*

### **Shape Operator Metric for Surface Normal Approximation**

G. D. Canas and S. J. Gortler

In *18th International Meshing Roundtable 2009*

### **A Linear Formulation of Shape from Specular Flow**

G. D. Canas, Y. Vasilyev, Y. Adato, T. Zickler, S. J. Gortler, and O. Ben-Shahar

In *International Conference on Computer Vision 2009*

### **A Perception-Based Color Space for Illumination-Invariant Image Processing**

H. Chong, S. J. Gortler and T. Zicker

In *Proceedings SIGGRAPH, 2008*

### **A Local/Global Approach to Mesh Parameterization**

L. Liu, L. Zhang, Y. Xu, C. Gotsman and S. J. Gortler

In *Proceedings SGP, 2008*

### **The von-Kries Hypothesis and a Basis for Color Constancy**

H. Chong, S. J. Gortler and T. Zicker

In *Proceedings ICCV, 2007*

### **Focal Surfaces of Discrete Geometry**

J. Yu, X. Yin, X. Gu, L. McMillan and S. J. Gortler

In *Proceedings SGP, 2007*

### **On Asymptotically Optimal Meshes by Coordinate Transformation”**

G. D. Canas and S. J. Gortler

In *Proceedings International Meshing Roundtable, 2006*

### **Surface Remeshing in Arbitrary Codimensions**

G. D. Canas and S. J. Gortler

In *Proceedings Pacific Graphics, 2006*

**Routing with Guaranteed Delivery on Virtual Coordinates**

M Ben-Chen, C. Gotsman and S. J. Gortler

In *Proceedings CCCG, 2006*

**Discrete One-Forms on Meshes and Applications to 3D Mesh Parameterization**

S. J. Gortler, C. Gotsman and D. Thurston

In *Computer Aided Geometric Design 33(2), 2006*

**Meshing Genus-1 Point Clouds Using Discrete One-Forms**

G Tewari, C Gotsman and S. J. Gortler

In *Computers and Graphics 30(6), 2006*

**Fast Exact and Approximate Geodesics on Meshes**

V. Surazhsky, T. Surazhsky, D. Kirsanov, S. J. Gortler and H. Hoppe

In *Proceedings SIGGRAPH, 2005*

**Free-Boundary Linear Parameterization of 3D Meshes in the Presence of Constraints**

Z. Karni, C. Gotsman and S. J. Gortler

In *Proceedings Shape Modeling International, 2005*

**A Lixel for Every Pixel**

Hamilton Chong and Steven Gortler.

In *Proceedings Fifteenth Eurographic Workshop on Rendering, 2004*

**Signal-Specialized Parameterization for Piecewise Linear Reconstruction**

Geetika Tewari, John Snyder, Pedro Sander, Steven Gortler, and Hugues Hoppe.

In *Proceedings ACM Symposium on Geometry Processing, 2004*

**A New Reconstruction Filter for Undersampled Light Fields**

Jason Stewart, Jinyi Yu, Steven Gortler and Leonard McMillan.

In *Proceedings Fourteenth Eurographic Workshop on Rendering, 2003* :150-156

**Multi-chart Geometry Images**

Pedro Sander, Zoe Wood, Steven Gortler, John Snyder and Hugues Hoppe.

In *Proceedings ACM Symposium on Geometry Processing, 2003* :157-166

**Simple Silhouettes for Complex Surfaces**

Danil Kirsanov, Pedro Sander and Steven Gortler.

In *Proceedings ACM Symposium on Geometry Processing, 2003* :107-112

**Geometry Videos**

Hector Bricen, Pedro Sander, Leonard McMillan, Steven Gortler and Hugues Hoppe.

In *Proceedings ACM Symposium on Computer Animation, 2003*

**Generalized Multicamera Scene Reconstruction Using Graph Cuts**

Vladimir Kolmogorov, Ramin Zabih, and Steven Gortler.

In *Proceedings Fourth International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition 2003*.

**Signal-Specialized Parametrization**

Pedro Sander, Steven Gortler, John Snyder and Hugues Hoppe.

In *Proceedings Thirteenth Eurographic Workshop on Rendering, 2002* :87-100

**Geometry Images**

Xianfeng Gu, Steven Gortler and Hugues Hoppe.

In *Computer Graphics, Annual Conference Series 2002 (Proc. SIGGRAPH '02)*:355-361

**Minimal Surfaces for Stereo Vision**

Chris Buehler, Steven Gortler, Michael Cohen and Leonard McMillan

In *ECCV 2002:III* 885-899

**Unstructured Lumigraph Rendering**

Chris Buehler, Mike Bosse, Leonard McMillan, Steven Gortler and Michael Cohen

In *Computer Graphics, Annual Conference Series 2001 (Proc. SIGGRAPH '01)*:425-432

**Texture Mapping Progressive Meshes**

Pedro Sander, John Snyder, Steven Gortler and Hugues Hoppe

In *Computer Graphics, Annual Conference Series 2001 (Proc. SIGGRAPH '01)*:409-416

**Feature-Based Cellular Texturing for Architectural Models**

Justin Legakis, Julie Dorsey and Steven Gortler

In *Computer Graphics, Annual Conference Series 2001 (Proc. SIGGRAPH '01)*:309-316

**Quantum versus Classical Learnability**

Rocco Servedio and Steven Gortler

In *IEEE 2001 Conference on Computational Complexity*:138-148

**Rendering Techniques 2001 (Proc. EGRW)**

Editors Steven Gortler and Karol Myszkowski

Springer Verlag

**Discontinuity Edge Overdraw**

Pedro Sander, Hugues Hoppe, John Snyder and Steven Gortler

In *Proceedings 2001 Symposium on Interactive 3D Graphics*:167-174

**Silhouette Clipping**

Pedro Sander, Steven Gortler, Hugues Hoppe and John Snyder

In *Computer Graphics, Annual Conference Series 2000 (Proc. SIGGRAPH '00)*:327-334.

**Image Based Visual Hulls**

Wojciech Matusik, Chris Buehler, Steven Gortler, Ramesh Raskar and Leonard McMillan

In *Computer Graphics, Annual Conference Series 2000 (Proc. SIGGRAPH '00)*:369-374.

**Dynamically Reparameterized Light Fields.**

Aaron Isaksen, Leonard McMillan and Steven Gortler.

In *Computer Graphics, Annual Conference Series 2000 (Proc. SIGGRAPH '00)*:297-306.

**Image Based Rendering: A New Interface Between Computer Vision and Computer Graphics**

Leonard McMillan and Steven Gortler

In *Computer Graphics* 33(4), Nov 1999:57-63.

**Network Aware Internet Video Encoding**

Hector Briceno, Steven Gortler and Leonard McMillan

In *Proceedings ACM Multimedia 1999*:251-26.

**Layered Depth Images**

Jonathan Shade, Steven Gortler, Li-wei He and Richard Szeliski

In *Computer Graphics, Annual Conference Series 1998 (Proc. SIGGRAPH '98)*:231-242.

**Polyhedral Geometry and the Two-Plane Parameterization**

Xianfeng Gu, Steven Gortler and Michael Cohen.

In *Proceedings Eighth Eurographics Workshop on Rendering, 1997*:1-12

**Time Critical Lumigraph Rendering**

Peter-Pike J. Sloan, Michael Cohen and Steven Gortler.

In *Proceedings 1997 Symposium on Interactive 3D Graphics*:17-23

**The Lumigraph**

Steven Gortler, Radek Grzeszczuk, Richard Szeliski and Michael Cohen.

In *Computer Graphics, Annual Conference Series 1996 (Proc. SIGGRAPH '96)*:43-54.

**Variational Modeling with Wavelets**

Steven Gortler and Michael Cohen.

In *Proc. 1995 Symposium on Interactive 3D Graphics*:35-42.

**Radiosity and Relaxation Methods**

Steven Gortler, Michael Cohen and Phillip Slusallek.

In *IEEE Computer Graphics and Applications* 14(6):48-58, Nov 1994.

**Hierarchical Spacetime Control**

Zicheng Liu, Steven Gortler and Michael Cohen.

In *Computer Graphics, Annual Conference Series 1994 (Proc. SIGGRAPH '94)*:35-42.

**Wavelet Radiosity**

Steven Gortler, Peter Schroder, Michael Cohen and Pat Hanrahan.

In *Computer Graphics, Annual Conference Series 1993 (Proc. SIGGRAPH '93)*:221-230.

**Wavelet Projections for Radiosity**

Peter Schroder, Steven Gortler, Michael Cohen and Pat Hanrahan.

In *Proc. Fourth Eurographics Workshop on Rendering, 1993*:105-114.

Journal version appears in *Computer Graphics Forum* 13(2):141-152, June 1994.

**EDITORIAL**

ACM TOG, Associate Editor, 2010-2011

**CO-CHAIR**

11th Eurographics Workshop on Rendering, 2001

**PROGRAM COMMITTEE**

SIGGRAPH 2000

SIGGRAPH 2001

SIGGRAPH 2005

SIGGRAPH 2006

SIGGRAPH 2008

SIGGRAPH 2009

8th Eurographics Workshop on Rendering, 1998

9th Eurographics Workshop on Rendering, 1999

12th Eurographics Workshop on Rendering, 2002

CVPR 2003

1st Symposium on Geometry Processing, 2003

2nd Symposium on Geometry Processing, 2004

6nd Symposium on Geometry Processing, 2008

7nd Symposium on Geometry Processing, 2009

8nd Symposium on Geometry Processing, 2010

9nd Symposium on Geometry Processing, 2011

**ADVISED PHDs**

Chris Buehler, (co-advisee) MIT, 2002

Xianfeng Gu, Harvard, 2003

Pedro Sander, Harvard 2003

Danil Kirsanov, Harvard 2004

Geetika Tewari, Harvard 2007

Hamilton Chong, Harvard 2008

Guillermo D. Canas, Harvard 2010