

Michael Kazhdan

February 2016

PERSONAL INFORMATION

Address: Computer Science Department
Johns Hopkins University
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3400 N Charles St.
Baltimore, MD 21218

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Home page: <http://www.cs.jhu.edu/~misha/>

RESEARCH INTERESTS

- *Image and Geometry Processing.* I am interested in developing efficient solvers supporting the solution of PDEs over both planar and non-planar domains.
- *Surface Reconstruction.* I am interested in developing data-structures and algorithms for efficiently reconstructing high-resolution surfaces from large point clouds.
- *Shape Analysis.* I am interested in developing new techniques for analyzing the geometry of 3D shapes, providing a means for performing shape retrieval from databases of 3D models.

EDUCATION

- *Ph.D. in Computer Science.* Computer Science Dept., Princeton University, June 2004.
Advisor: Professor Thomas Funkhouser
Dissertation: Shape Representations and Algorithms for 3D Model Retrieval
- *M.A. in Computer Science.* Computer Science Dept., Princeton University, May 2001.
- *B.A. in Mathematics.* Mathematics Dept., Harvard University, June 1997.

ACADEMIC APPOINTMENTS

- **October 2011 - Present.** *Associate Professor.* Computer Science Dept. Johns Hopkins University.
- **Spring 2013.** *Visiting Researcher,* Microsoft Research.
- **Spring 2013.** *Visiting Researcher,* Technion University.
- **August 2004 - October 2011.** *Assistant Professor.* Computer Science Dept. Johns Hopkins University.
- **Summer 2009.** *Visiting Researcher,* Microsoft Research.
- **Summer 2008.** *Visiting Researcher,* Microsoft Research.
- **Summer 2007.** *Visiting Researcher,* Technion University.

PUBLICATIONS

Journals

- J-1. A. Pilleboue, G. Singh, D. Coeurjolly, M. Kazhdan, and V. Ostromoukhov “**Variance Analysis for Monte Carlo Integration**”. *Transactions on Graphics (SIGGRAPH)* (2015)
- J-2. F. Prada and M. Kazhdan, “**Unconditionally Stable Shock Filters for Image and Geometry Processing**”. *Computer Graphics Forum (SGP)* (2015)
- J-3. M. Kazhdan, “**Fast and Exact (Poisson) Solvers on Symmetric Geometries**”. *Computer Graphics Forum (SGP)* (2015)
- J-4. M. Kazhdan, H. Hoppe “**Screened Poisson Surface Reconstruction**”. *Transactions on Graphics (ToG). Volume 32.* (2013)
- J-5. M. Kazhdan, J. Solomon, M. Ben-Chen “**Can Mean-Curvature Flow be Modified to be Non-singular?**”. *Computer Graphics Forum (SGP). Volume 31.* (2012)
- J-6. B. Lucas, M. Kazhdan, R. Taylor “**Spring Level Sets: A Deformable Model Representation to Provide Interoperability Between Meshes and Level Sets**”. *Transactions on Visualizations and Computer Graphics.* (2012)
- J-7. S. Petit, B. Wu, M. Kazhdan, A. Dekker, P. Simari, R. Kumar, R. Taylor, J. Herman, T. McNutt “**Increased Organ Sparing Using Shape-Based Treatment Plan Optimization for Intensity Modulated Radiation Therapy of Pancreatic Adenocarcinoma**”. *Radiotherapy and Oncology. Volume 102.* (2011)
- J-8. M. Chuang, M. Kazhdan “**Interactive and Anisotropic Geometry Processing Using the Screened Poisson Equation**”. *Transactions on Graphics (SIGGRAPH). Volume 30.* (2011)
- J-9. M. Chuang, M. Kazhdan “**Fast Mean-Curvature Flow via Finite-Elements Tracking**”. *Computer Graphics Forum. Volume 30.* (2011)
- J-10. M. Kazhdan, H. Hoppe “**Metric-Aware Processing of Spherical Imagery**”. *Transactions on Graphics (SIGGRAPH Asia). Volume 29.* (2010)
- J-11. J. Lawrence, S. Arietta, M. Kazhdan, D. Lepage, C. O’Hagan. “**A user-assisted approach to visualizing multidimensional images**”. *IEEE Transactions on Visualization and Computer Graphics. Volume 17.* (2010)
- J-12. B. Wu, F. Ricchetti, G. Sanguineti, M. Kazhdan, P. Simari, R. Jacques, R. Taylor, T. McNutt. “**A data-driven approach to generating achievable DVH objectives in IMRT treatment planning**”. *International Journal of Radiation Oncology Biology Physics.* (2010)
- J-13. M. Kazhdan, D. Surendran, H. Hoppe. “**Distributed gradient-domain processing of planar and spherical images**”. *Transactions on Graphics. Volume 29.* (2010)
- J-14. D. Ghosh, N. Amenta, M. Kazhdan. “**Closed-form blending of local symmetries**”. *Computer Graphics Forum (Symposium on Geometry Processing). Volume 29.* (2010)
- J-15. B. Wu, F. Ricchetti, G. Sanguineti, M. Kazhdan, P. Simari, M. Chuang, R. Taylor, R. Jacques, T. McNutt. “**Patient geometry-driven information retrieval for IMRT treatment planning**”. *Journal of Medical Physics. Volume 36.* (2009)
- J-16. M. Chuang, L. Luo, B. Brown, S. Rusinkiewicz, M. Kazhdan. “**Estimating the Laplace-Beltrami operator by restricting 3D functions**”. *Computer Graphics Forum (Symposium on Geometry Processing). Volume 28.* (2009)

- J-17. M. Kazhdan, H. Hoppe. “**Streaming multigrid for gradient-domain operations on large images**”. *Transactions on Graphics (SIGGRAPH)*. Volume 27. (2008)
- J-18. M. Kazhdan. “**An approximate and efficient method for optimal rotation alignment of 3D models**”. *Transactions on Pattern Analysis and Machine Intelligence*. Volume 27. (2007)
- J-19. M. Kazhdan, T. Funkhouser, S. Rusinkiewicz. “**Shape matching and anisotropy**”. *Transactions on Graphics (SIGGRAPH)*. (2004)
- J-20. T. Funkhouser, M. Kazhdan, P. Shilane, P. Min, W. Kiefer, A. Tal, S. Rusinkiewicz, D. Dobkin. “**Modeling by example**”. *Transactions on Graphics (SIGGRAPH)*.
- J-21. M. Kazhdan, B. Chazelle, D. Dobkin, T. Funkhouser, S. Rusinkiewicz. “**A reflective symmetry descriptor for 3D models**”. *Algorithmica*. Volume 38. (2003)
- J-22. T. Funkhouser, P. Min, M. Kazhdan, J. Chen, A. Halderman, D. Dobkin, D. Jacobs. “**A search engine for 3D models**”. *Transactions on Graphics*. Volume 22. (2003)

Peer-Reviewed Conferences

- C-1. S. Furhmann, M. Kazhdan, M. Goesele, “**Accurate Isosurface Interpolation with Hermite Data**”. In the proceedings of *3D Vision* (2015)
- C-2. R. Burns, K. Lillaney, D. Berger, L. Grosenick, K. Deisseroth, C. Reid, Wi. Roncal, P. Manavalan, D. Bock, N. Kasthuri, M. Kazhdan, S. Smith, D. Kleissas, E. Perlman, K. Chung, N. Weiler, J. Lichtman, A. Szalay, J. Vogelstein, J. Vogelstein “**The open connectome project data cluster: scalable analysis and vision for high-throughput neuroscience**”. In the proceedings of *Scientific and Statistical Database Management* (2013)
- C-3. B. Lucas, M. Kazhdan, R. Taylor “**Multi-Object Spring Level Sets**”. In the proceedings of *Medical Imaging Computing and Computer Assisted Interventions (MICCAI)*. (2012)
- C-4. B. Lucas, M. Kazhdan, R. Taylor “**Multi-Object Geodesic Active Contours (MOGAC)**”. To appear in the proceedings of *Medical Imaging Computing and Computer Assisted Interventions (MICCAI)*. (2012)
- C-5. H. Tokgozoglu, E. Meisner, M. Kazhdan, G. Hager. “**Color-based hybrid reconstruction for endoscopy**”. In Proceedings of *Computer Vision and Pattern Recognition Workshops (CVPRW)*. (2012)
- C-6. B. Lucas, M. Kazhdan, R. Taylor. “**SpringLS: a deformable model representation to provide interoperability between meshes and level sets**”. Proceedings of *Medical Imaging Computing and Computer Assisted Intervention (MICCAI)*. (2011) [Acceptance Rate: 30%]
- C-7. P. Simari, B. Wu, R. Jacques, A. King, T. McNutt, R. Taylor, M. Kazhdan. “**A statistical approach for achievable dose querying in IMRT planning**”. Proceedings of *Medical Imaging Computing and Computer Assisted Intervention (MICCAI)*. (2010) [Acceptance Rate: 32%]
- C-8. E. Perlman, R. Burns, M. Kazhdan, R. Murphy, W. Ball, N. Amenta. “**Organization of data in non-convex spatial domains**”. Proceedings of *Scientific and Statistical Database Management Conference (SSDBM)*. (2010) [Acceptance Rate: 32%]

- C-9. M. Bolitho, M. Kazhdan, R. Burns, H. Hoppe. “**Parallel Poisson surface reconstruction**”. Proceedings of *International Symposium on Visual Computing (ISVC)*. (2009) [Acceptance Rate: 30%]
- C-10. M. Kazhdan, N. Amenta, S. Gu, D. Wiley, B. Hamann. “**Symmetry restoration by stretching**”. Proceedings of *Canadian Conference on Computational Geometry*. (2009) [Acceptance Rate: 69%]
- C-11. M. Kazhdan, P. Simari, T. McNutt, B. Wu, R. Jacques, M. Chuang, R. Taylor. “**A shape relationship descriptor for radiation therapy planning**”. Proceedings of *Medical Imaging Computing and Computer Assisted Intervention (MICCAI)*. (2009) [Acceptance Rate: 32%]
- C-12. M. Kazhdan, A. Klein, K. Dalal, H. Hoppe. “**Unconstrained isosurface extraction on arbitrary octrees**”. Proceedings of *Symposium on Geometry Processing*. (2007) [Acceptance Rate: 28%]
- C-13. M. Bolitho, M. Kazhdan, R. Burns, H. Hoppe. “**Multilevel streaming for out-of-core surface reconstruction**”. Proceedings of *Symposium on Geometry Processing*. (2007) [Acceptance Rate: 28%]
- C-14. M. Kazhdan, M. Bolitho, H. Hoppe. “**Poisson surface reconstruction**”. Proceedings of *Symposium on Geometry Processing*. (2006) [Acceptance Rate: 26%]
- C-15. M. Kazhdan. “**Reconstruction of solid models from oriented point sets**”. Proceedings of *Symposium on Geometry Processing*. (2005) [Acceptance Rate 25%]
- C-16. M. Kazhdan, T. Funkhouser, S. Rusinkiewicz. “**Symmetry descriptors and 3D shape matching**”. Proceedings of *Symposium on Geometry Processing*. (2004) [Acceptance Rate: 29%]
- C-17. P. Shilane, P. Min, M. Kazhdan, T. Funkhouser. “**The Princeton shape benchmark**”. Proceedings of *Shape Modeling International*. (2004) [Acceptance Rate: 37%]
- C-18. P. Min, M. Kazhdan, T. Funkhouser. “**A comparison of text and shape matching for retrieval of online 3D models**”. Proceedings of *European Conference on Digital Libraries*. (2004) [Acceptance Rate: 32%]
- C-19. M. Kazhdan, T. Funkhouser, S. Rusinkiewicz. “**Rotation invariant spherical harmonic representation of 3D shape descriptors**”. Proceedings of *Symposium on Geometry Processing*. (2003) [Acceptance Rate: 35%]
- C-20. P. Min, A. Halderman, M. Kazhdan, T. Funkhouser. “**Early experiences with a 3D model search engine**”. Proceedings of *Web3D Symposium*. (2003) [Acceptance Rate: Not Available]
- C-21. M. Kazhdan, B. Chazelle, D. Dobkin, A. Finkelstein, T. Funkhouser. “**A reflective symmetry descriptor**”. Proceedings of *European Conference on Computer Vision*. (2002) [Acceptance Rate: 38%]
- C-22. A. Klein, W. Li, M. Kazhdan, W. Correa, A. Finkelstein, T. Funkhouser. “**Non-photorealistic virtual environments**”. Proceedings of *SIGGRAPH*. (2000) [Acceptance Rate: 19%]

- A-1. M Kazhdan, K Lillaney, W Roncal, D Bock, J Vogelstein, R Burns. “**Gradient-Domain Fusion for Color Correction in Large EM Image Stacks**”. *ArXiv*. (2015)
- A-2. M Kazhdan, G Singh, A Pilleboue, D Coeurjolly, V Ostromoukhov. “**Variance Analysis for Monte Carlo Integration: A Representation-Theoretic Perspective**”. *ArXiv*. (2015)
- A-3. M Chuang, M Kazhdan. “**A Connectivity-Aware Multi-level Finite-Element System for Solving Laplace-Beltrami Equations**”. *ArXiv*. (2015)
- A-4. A Sinha, WG Roncal, N Kasthuri, JW Lichtman, R Burns, M Kazhdan. “**Automatic Annotation of Axoplasmic Reticula in Pursuit of Connectomes using High-Resolution Neural EM Data**”. *ArXiv*. (2014)
- A-5. M Kazhdan, R Burns, B Kasthuri, J Lichtman, J Vogelstein, J Vogelstein. “**Gradient-domain processing for large EM image stacks**”. *ArXiv*. (2013)
- A-6. M Kazhdan, J Solomon, M Ben-Chen. “**Can Mean-Curvature Flow Be Made Non-Singular?**” *ArXiv* (2012)
- A-7. Y Ahmad, R Burns, M Kazhdan, C Meneveau, A Szalay, A Terzis. “**Scientific data management at the Johns Hopkins institute for data intensive engineering and science**”. *ACM SIGMOD Record*. (2011)
- A-8. E. Perlman, R. Burns, M. Kazhdan. “**Organizing and indexing non-convex regions**”. *In proceedings of International Conference on Very Large Databases (VLDB)*. (2008)
- A-9. B. Wu, M. Kazhdan, F. Ricchetti, P. Simari, R. Jaques, G. Sanguineti, M. Chuang, R. Taylor, T. McNutt. “**Using a dabase of patient geometric and dosimetric information for quantitative IMRT plan quality control**”. *Journal of Medcal Physics. Volume 36*. (2009)
- A-10. B. Wu, F. Ricchetti, G. Sanguineti, M. Kazhdan, P. Simari, R. Jaqcues, M. Chuang, R. Taylor, T. McNutt. “**A data-driven approach to generating achievable dose volume histograms (DVH) objectives in Intensity Modulated Radiation Therapy (IMRT) treatment planning**”. *Proceedings of the 51st ASTRO Annual Meeting*. (2009)
- A-11. M. Kazhdan, T. Funkhouser. “**Harmonic 3D shape matching**”. *In proceedings of SIGGRAPH* (2002)

Invited Presentations

1. “**Fast and Exact (Poisson) Solvers on Surfaces of Revolution**”, Mathematisches Forschungsinstitut Oberwolfach, 2015 (Organizers:Alexander Bobenko, Richard Kenyon, and Peter Schroder)
2. “**The Poisson System: From Images to Geometry**”, *Keynote Shape Modeling International*, 2014.
3. “**Searching for Structure in Geometry Processing**”, *Keynote Symposium on Geometry Processing*, 2014.
4. “**The Poisson Equation in Image Stitching, Geometry Processing, and Surface Reconstruction**”, Technion-Israel Institute of Technology. March, 2013. (Host: Mirela Ben-Chen)
5. “**Reconstructing Solid Models from Oriented Points Sets**”, Stanford University. October, 2010. (Host: Leo Guibas)
6. “**Gradient Domain Processing of Large Images**”, Adobe. April, 2009.
7. “**Reconstructing Solid Models from Oriented Points Sets: FFT vs. Poisson**”, Texas A&M University. October, 2008. (Host: Scott Schaefer)

8. “**Reconstruction of Solid Models from Oriented Point Sets**”, SIAM Geometric Design and Computing Conference. November, 2007.
9. “**Reconstruction of Solid Models from Oriented Point Sets**”, University of Virginia. October, 2007. (Host: Jason Lawrence)
10. “**Unconstrained Isosurface Extraction on Arbitrary Octrees**”, Technion University. June 2007. (Host: Craig Gotsman)
11. “**Reconstruction of Solid Models from Oriented Point Sets**”, University of Texas. April, 2007. (Host: Chandrajit Bajaj)
12. “**Reconstruction of Solid Models from Oriented Point Sets**”, Drexel University. May, 2006. (Host: David Brin)
13. “**Reconstruction of Solid Models from Oriented Point Sets**”, University of Maryland. November, 2005. (Host: Amitabh Varshney)
14. “**3D Scan Matching and Registration**”, International Conference on Computer Vision. October, 2005.
15. “**Modeling by Example**”, Imagina. February, 2005.
16. “**Shape Matching and Model Alignment**”, Tel-Aviv University, September 2003. (Host: Dani Cohen-Or)
17. “**Shape Matching and Model Alignment**”, IBM. November, 2003.
18. “**A Reflective Symmetry Descriptor**”, McGill University. June, 2002. (Host: Kaleem Siddiqi)
19. “**A Reflective Symmetry Descriptor**”, Workshop on Shape-Based Retrieval and Analysis of 3D Models. October, 2001.

SOFTWARE ARTIFACTS AND PATENTS

- **PoissonRecon.** PoissonRecon is an octree-based, streaming, out-of-core, implementation of the Poisson Surface Reconstruction algorithm, supporting the processing of large datasets that exhibit noise and non-uniform sampling. The software has been included in several packages, including **CGAL** , **MeshLAB**, and the **VTK Journal**, and has been used by **NASA** in reconstruction of the Marsian landscape data acquired by the Curiosity rover.
Available from: <http://www.cs.jhu.edu/~misha/Code/PoissonRecon>
- **DMG.** DMG is a distributed and streaming system for performing gradient-domain processing of images. The software supports standard operations such as image stitching and contrast enhancement over both planar and spherical domains, and supports the processing of images up to one terapixel in size. The software has been included in the **Autopano** package, is used as a key step in processing the EM data used in the **Connectome Project**, and is used by **NASA** for stitching together the panoramas of Mars from the images acquired by the Curiosity rover.
Available from: <http://www.cs.jhu.edu/~misha/Code/DMG/>
- **Gradient Domain Fusion for Large EM Image Stacks.** This work provides an approach for performing color-correction of 3D EM data, supporting the processing of huge (teravoxel) datasets, thereby facilitating down-stream processing such as segmentation. This code is currently used for processing the EM data for the **Connectome Project** and is being integrated into the 3D image processing pipeline at **Janelia Farms**.

Available from: <http://www.cs.jhu.edu/~misha/Code/GradientDomainFusion/>

- **PoissonMesh.** PoissonMesh is an octree-based finite-elements solver that supports seamless stitching of textures over arbitrary meshes, geometry editing, and interactive surface evolution through the solution of the associated Laplace-Beltrami system of equations.

Available from: <http://www.cs.jhu.edu/~misha/Code/PoissonMesh>

- **System and Method for Shape Based Retrieval of Prior Patients for Automation and Quality Control of Radiation Therapy Treatment Plans.** Patent Application #12/820,852. Filed June 22, 2010.
Licensed to Varian Medical Systems on 9/22/2014 for \$350,000.

CONTRACTS AND GRANTS

1. National Science Foundation: *III:CGV: Small: Designing an Adaptive Method for Solving Large Linear Systems of Equations in Two- and Three-Dimensional space.* PI M. Kazhdan, \$499,999. Funding Period: 09/2014 – 09/2017.
2. NIH *CRCNS: Collaborative Research: Data Sharing: The EM Open Connectome Project.* Co-PI with PI R. Burns, \$583,683. Funding Period: 09/2012 – 09/2015.
3. National Science Foundation *CAREER: Reconstructing 3D Models from Today's Scanning Devices.* PI. CCF-0746039, \$400,001. Funding Period: 08/2008-07/2012.
4. Paul Maritz Fund *JHU Maritz: E-Science Meets Radiation Oncology: A Proposal for Information-Based Closed Loop Interventional Medicine.* Co-PI with PI R. Taylor, \$246,089. Funding Period: 04/2007-12/2008.
5. National Science Foundation: *MRI: The Development of Data-Scope – A Multi-Petabyte Generic Data Analysis Environment for Science.* Senior personnel with PI A. Szalay, OCI-1040114, \$2,087,760. Funding Period: 01/2011 – 12/2012.

AWARDS AND RECOGNITION

Software Award, Symposium on Geometry Processing (SGP) 2009.

Research on large image processing show-cased at Microsoft's Faculty Summit 2010. (Article in HPCWire)

Second Best Paper Award, Symposium on Geometry Processing (SGP) 2009.

Finalist, Microsoft Young Researcher Fellowship 2009.

Recipient of NSF Career Award 2008.

GRADUATE STUDIES AWARDS

Best Paper Award, Web3D, 2003

UNDERGRADUATE STUDIES AWARDS

Magna Cum Laude from the Mathematics Department, Harvard University, 1997

SERVICE

Professional Service

- Papers Chair
 - 2012

- Geometric Modeling and Processing (Co-chair)
- **2009**
 - Symposium on Geometry Processing (Co-chair)
- Associate Editor
 - **2013-Present**
 - Transactions on Graphics
 - **2010-Present**
 - Graphical Models
- Program Committee Member
 - **2016**
 - SIGGRAPH
 - Symposium on Geometry Processing
 - Shape Modelling International
 - **2015**
 - Symposium on Geometry Processing
 - SIGGRAPH Asia
 - GMP
 - **2014**
 - GMP
 - SIGGRAPH
 - SIGGRAPH Asia
 - **2013**
 - Eurographics
 - CAD/Graphics
 - SIGGRAPH
 - **2012**
 - 3DIMPVT
 - MeshMed
 - Symposium on Geometry Processing
 - Shape Modeling International
 - NORDIA (Non-Rigid Shape Analysis and Deformable Image Alignment)
 - **2011**
 - Conference on Geometric and Physical Modeling
 - MeshMed
 - Symposium on Geometry Processing
 - Shape Modeling International
 - NORDIA (Non-Rigid Shape Analysis and Deformable Image Alignment)
 - **2010**
 - Symposium on Geometry Processing
 - SIGGRAPH (Special Interest Group on GRAPHics and interactive techniques)
 - Geometry Modeling and Processing
 - NORDIA (Non-Rigid Shape Analysis and Deformable Image Alignment)
 - **2009:**
 - ISVC (International Symposium on Visual Computing)

- NORDIA (Non-Rigid Shape Analysis and Deformable Image Alignment)
 - SIGGRAPH (Special Interest Group on GRAPHics and interactive techniques)
- **2008**
 - Symposium on Geometry Processing
- **2007**
 - EUROGRAPHICS (European Association for Computer Graphics)
 - Symposium on Geometry Processing
- Other
 - **2013-Present**
 - Symposium on Geometry Processing – Software Award Committee Chair
- Reviewer
 - SIGGRAPH,
 - SIGGRAPH Asia
 - EUROGRAPHICS
 - Symposium on Geometry Processing
 - Geometry Modeling and Processing
 - Non-Rigid Shape Analysis and Deformable Image Alignment
 - International Symposium on Visual Computing
 - Transactions on Visualizations and Computer Graphics
 - Transactions on Graphics
 - Transactions on Pattern Analysis and Machine Intelligence
 - International Journal of Computer Vision
 - Computers & Graphics
 - IEEE Visualization
 - Graphics Interface
 - Shape Modling International
 - Grapical Models
 - SIAM Journal on Imaging Sciences
 - IEEE Computer Graphics and Applications
 - IEEE Transactions on Multimedia
 - Pacific Graphics
 - Journal of Mathematical Imaging and Vision
 - Computer Aided Design
 - Journal on Applied Signal Processing.
 - Computer Vision and Image Understanding

TEACHING EXPERIENCE

-
- **Spring 2016:** 600.459: “Computational Geometry”. [Number of students: 13] **(New Course)**
 - **Fall 2015:** 600.357/457: “Computer Graphics”. [Number of students: 33]
 - **Spring 2015:** 600.660 “*FFTs in Graphics and Vision*”. [Number of students: 10]
 - **Fall 2014:** 600.357/457 “Computer Graphics”. [Number of students: 30]
 - **Spring 2014:** 600.659: “*Introduction to Computational Geometry*”. [Number of students: 4] **(New Course)**
 - **Fall 2013:** 600.660: “*Survey of Methods in Computer Graphics*”. [Number of students: 5] **(New Course)**
 - **Fall 2013:** 600.357/457: “*Comptuer Graphics*”. [Number of students: 35]

- ❑ **Fall 2013:** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 3]
- ❑ **Fall 2012:** 600.660: "*FFTs in Graphics & Vision*". [Number of students: 7]
- ❑ **Fall 2012:** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 5]
- ❑ **Spring 2010.** 600.357/457: "*Computer Graphics*". [Number of students: 15]
- ❑ **Spring 2011:** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Fall 2011:** 600.657: "*Advanced Topics for Computer Graphics: Rendering*". [Number of students: 4] **(New Course)**
- ❑ **Fall 2011:** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Spring 2011.** 600.357/457: "*Computer Graphics*". [Number of students: 23]
- ❑ **Spring 2011:** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 3]
- ❑ **Fall 2010.** 600.657: "*Advanced Topics for Computer Graphics: Mesh Processing*". [Number of students: 4] **(New Course)**
- ❑ **Fall 2010:** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Spring 2010.** 600.357/457: "*Computer Graphics*". [Number of students: 28]
- ❑ **Fall 2009.** 600.657: "*Advanced Topics for Computer Graphics: Discrete Differential Geometry*". [Number of students: 5] **(New course)**
- ❑ **Spring 2009.** 600.357/457: "*Computer Graphics*". [Number of students: 25]
- ❑ **Spring 2009.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 3]
- ❑ **Fall 2008.** 600.660: "*FFTs in Graphics & Vision*". [Number of students: 8]
- ❑ **Fall 2008.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Spring 2008.** 600.357/457: "*Computer Graphics*". [Number of students: 25]
- ❑ **Spring 2008.** 600.758: "*Graduate Seminar in Computational Geometry*". [Number of students: 4] **(New course)**
- ❑ **Spring 2008.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Fall 2007.** 600.657: "*Advanced Topics in Computer Graphics: The Poisson Equation*". [Number of students: 12] **(New course)**
- ❑ **Fall 2007.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 4]
- ❑ **Spring 2007.** 600.357/457: "*Computer Graphics*". [Number of students: 18]
- ❑ **Spring 2007.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 1]
- ❑ **Fall 2006.** 600.660: "*FFTs in Graphics and Vision*". [Number of students: 7] **(New course)**
- ❑ **Fall 2006.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Spring 2006.** 600.357/457: "*Computer Graphics*". [Number of students: 28]
- ❑ **Spring 2006.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 2]
- ❑ **Fall 2005.** 600.659: "*3D Model Reconstruction*". [Number of students: 7] **(New course)**
- ❑ **Fall 2005.** 600.757: "*Selected Topics in Computer Graphics*". [Number of students: 4]
- ❑ **Spring 2005.** 600.357/457: "*Computer Graphics*". [Number of students: 33] **(New Course)**
- ❑ **Fall 2004.** 600.658: "*Seminar in Shape Analysis and Retrieval*". [Number of students: 11] **(New course)**

CO-TEACHING EXPERIENCE

- ❑ **Fall 2010.** 600.205: "*M&Ms: Freshman Experience*". [Number of students: 27] (Offered 3 lectures)
- ❑ **Spring 2009.** 600.255: "*Introduction to Video Game Design*". [Number of students: 38] (Offered 6 lectures)
- ❑ **Fall 2006.** 600.205: "*M&Ms: Freshman Experience*". [Number of students: 22] (Offered 2 lectures)
- ❑ **Fall 2005.** 600.205: "*M&Ms: Freshman Experience*". [Number of students: 14] (Offered 2 lectures)

Department Service

□ Graduate Board Oral Exams

- 2015
 - Xi Zhao (CE), Sue Kulason (BME), Will Gray (CS), Nathan Cho (CS), Purnima Rajan (CS), Hari Menon (CS), Chi Li (CS)
- 2011
 - Ming Chuang (CS), Blake Lucas (CS)
- 2010
 - Andre Harrison (ECE), Nolan Li (CS), Jae Hyun Ahn (CS), Xiaoxo Kang (BME)
- 2009
 - Zachary Pezzementi (CS), Rizwan Chaudry (CS), Raphael Snitzman (CS), Robert Jacques (BME), Omar Ahamad (CS)
- 2008
 - Matthew Bolitho (CS), Eric Perlman (CS)
- 2007
 - Daniel Abretske (CS)

□ PhD thesis reader

- Vitaly Lorman, 2016. Thesis title: *“Real Johnson-Wilson Theories and Computations”*.
- Ming Chuang, 2014. Thesis title: *“Grid-based Finite Elements System for Solving Laplace-Beltrami Equations on 2-Manifolds”*.
- Blake Lucas, 2012. Thesis title: *“Unifying triangle Mesh, Level Set, and Label Mask Representations in Image Analysis”*.
- Eric Perlman, 2012. Thesis title: *“Indexing and Processing Spatial Range Functions in Data-Intensive Scientific Databases”*.
- Oliver van Kaick, 2011. Thesis title: *“Matching Dissimilar Shapes”*.
- Zachary Pezzementi, 2011. Thesis title: *“Object Recognition Using Tactile Array Sensors”*.
- Yuan Chen, 2008. Thesis title: *“Techniques for 3D Scalar and Vector Field Visualization with Error Evaluation”*.
- Budrijanto Purnomo, 2008. Thesis title: *“Mesh Processing Techniques on Graphics Hardware”*.
- Ofri Sadowsky, 2008. *“Image Registration and Hybrid Volume Reconstruction of Bone Anatomy Using a Statistical Shape Atlas”*.
- Krzysztof Niski, 2007. Thesis title: *“View-Dependent Level of Detail for the Parallel Rendering of Complex Models”*.

□ Department Committees

- Masters Admissions Committee (Chair): 2015-Present
- Graduate Admissions Committee (Chair): 2014-2015
- Graduate Admissions Committee: 2009-Present
- Diversity Committee: 2013-2015
- WSE Graduate Committee: 2011-2013
- Faculty Hiring Committee: 2005-2007, 2008-2012

- Curriculum Committee: 2007-2013
- University Committees
 - Graduate Committee: 2010-2012 and 2014-Present
 - Siebel Scholar Selection Committee: 2014-2015

ADVISING

Current

1. Fabian Prada Nino, PhD Student (2nd year)
2. Alex Baden PhD Student (1st year) (co-advising with R. Burns)
3. Mengtie Hu, Masters Student (1st year)

Past

□ Postdoctoral Scholars

- Patricio Simari, June 2008 – June 2010.

□ PhDs

- Ming Chuang. June 2014. PhD thesis title: “*Grid-based Finite Elements System for Solving Laplace-Beltrami Equations on 2-Manifolds*”.
- Blake Lucas (co-advised with R. Taylor), June 2012. PhD thesis title: “*Unifying Deformable Model Representations through New Geometric Data Structures*”.
- Matthew Bolitho. June 2010. PhD thesis title: “*The Reconstruction of Large Three-Dimensional Meshes*”.

□ Masters

- Alex King, Supervised MSE project, 2010.
- Pao-Hahn Shih. Supervised MSE project, 2008.
- Bhaskar Kishore. Supervised MSE project, 2008.

□ Undergraduates

1. James Doverspike
2. Junkei Hong
3. Spencer Ong. Supervised PURMA Fellowship, Fall 2010
4. Spencer Ong. Supervised Pistorito Fellowship, Summer 2010
5. Laura Briskin. Supervised Pistorito Fellowship, Summer 2006

□ High School

1. Jack Phoebus, Summer 2013