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Education

- Ph.D. in Computer Science, Harvard University, March 2003,
  Advisors: Steven J. Gortler and Shing-Tung Yau
  Dissertation title: "Parameterization of Surfaces with Arbitary Topologies."

- M.S. in Computer Science, Harvard University, May 1996.

- B.S. in Computer Science (Minor: Mathematics), Tsinghua University, July 1994.
  GPA ranked 1st in the department (more than 300 students).

Employment

- Associate Professor, SUNY at Stony Brook, September, 2009 - *present*.

- Assistant Professor, SUNY at Stony Brook, July, 2004 - August, 2009.

- Assistant Professor, University of Florida, June, 2003 - June, 2004.

- Visiting Professor, Tsinghua University, June - September, Mathematics Science Center, 2010, 2011, 2012.

- Visiting Professor, Ecole Centrale Lyon, June, 2011.

Teaching at Stony Brook

1. CSE618 **Advanced Computer Graphics**,Fall 2004
   10 students enrolled.

2. CSE 328 **Fundamental of Computer Graphics**,Spring 2005
   21 students enrolled.

3. CSE 529AMS 553 **Simulation and Modeling**,Fall 2005
   24 students enrolled.

4. CSE 328 **Fundamental of Computer Graphics**,Spring 2006
   22 students enrolled.

5. CSE 528 **Computer Graphics**, Fall 2006
   19 students enrolled.

6. CSE 326 **Fundamental of Digital Image Processing**,Spring 2007
   10 students enrolled.

7. CSE 528 **Computer Graphics**, Fall 2007
   14 students enrolled.

8. ITS 102 **Graphics in Movies and Games**, Fall 2007
   20 students enrolled.

9. CSE 328 **Fundamental of Computer Graphics**, Spring 2008
   35 students enrolled.

10. CSE 590 **Topics in Computer Science-Digital Geometry Processing**, Fall 2008 5 students enrolled.

11. ITS 102 **Graphics in Movies and Games**, Fall 2008
    15 students enrolled.

12. CSE 648 **Seminar in Graphics**, from Fall 2004 to Fall 2008
    10-15 students participated each semester.

13. CSE 328 **Fundamental of Computer Graphics**, Spring 2009
    25 students enrolled.

14. CSE 594 **Advanced Topics in Computer Science - Digital Geometry Processing**, Spring 2009
    5 students enrolled.

15. CSE 300/ISE300 **Writing in Computer Science and Information Systems**, Spring 2009
    32 students enrolled.

16. CSE 328 **Fundamentals of Computer Graphics**, Spring 2009
    26 students enrolled.

17. CSE 529/AMS 553 **Simulation and Modeling**, Fall 2009
    10 students enrolled.

18. CSE 328 **Fundamental of Computer Graphics**, Spring 2010
    51 students enrolled.

19. CSE 325 **Computers and Sculpture**, Spring 2010
    16 students enrolled.

20. CSE 528 **Advanced Computer Graphics**, Fall 2010
    29 students enrolled.

21. CSE 594 **Advanced Topics in Computer Science - Digital Geometry Processing**, Spring 2011
    8 students enrolled.

22. ISE/CSE 325 **Computers and Sculpture**, Spring 2011
    30 students enrolled.

23. CSE 595 **Sculpture and Computer**, Fall 2011
    24 students enrolled.

24. CSE 564 **Advanced Visualization**, Spring 2012
    12 students enrolled.

25. CSE 595 **Sculpture and Computer**, Fall 2012
    24 students enrolled.

26. CSE 564 **Advanced Visualization**, Spring 2013
    30 students enrolled.

27. CSE 325 **Computers and Sculpture**, Fall 2013
    40 students enrolled.

28. CSE 564 **Advanced Visualization**, Spring 2014
    35 students enrolled.

29. CSE 328 **Fundamental of Computer Graphics**, Spring 2014
    74 students enrolled.

Other Teaching

1. CAP 4730 **Computational Structures in Computer Graphics**, Fall 2003
   Computer and Information Science and Engineering Department, University of Florida
   Approximately 40 students each semester.

2. CAP 5705 **Computer Graphics** , Spring 2004
   Computer and Information Science and Engineering Department, University of Florida
   Approximately 30 students each semester.

3. **Geometry, Graphics, Vision, Visualization Seminar**, Fall 2003, Spring 2004
   Computer and Information Science and Engineering Department, University of Florida
   Approximately 20 students each semester.

Honors and Awards

- Morningside Gold Medal in Applied Mathematics: International Congress of Chinese Mathematicians, July 14th, 2013, Taipei.

- NSF CAREER: Conformal Geometry Applied to Shape Analysis and Geometric Modeling, 2005.

- Research Excellence Award, Stony Brook University, 2010.

- Gaheon Award: The Best Paper in International Journal of CAD/CAM of 2009.
  Wei Zeng, Jing Hua and Xianfeng David Gu, Symmetric Conformal Mapping for Surface Matching and Registration, International Journal of CAD/CAM (IJCC), 9(1):103-109, 2009, (corresponding author: Wei Zeng). Prize (Korean Won 10,000,000 equivalent to USD 10,000),

- Gold Prize in the Shing-Tung Yau High School Mathematics Awards 2013, Project Title: 3D Surface Fabrication Using Conformal Geometry, Student: Zhang Yuanqi.

- Plenary Talk: The 6th International Congress of Chinese Mathematicians, Taipei, 2014.

- Plenary Talk: The 5th International Congress of Chinese Mathematicians, Beijing, 2010.

- Best Paper Award: The 10th International Conference on Computer Aided Design and Computer Graphics, 2007.

- Plenary Talk: The 4th International Congress of Chinese Mathematicians, 2007.

- Outstanding Overseas Young Scholar, National Science Foundation of China, 2006.

- Media Exposure: *New York Times*, Science Section front page, August 15, 2006.

- Media Exposure: *National Post*, August 21, 2006.

- Best Paper Award: International Conference on Computer, Communication and Control Technologies , 2003.

- Distinction in Teaching Award, Harvard University, 1999-2001.

- Harvard Fellowship, Harvard University, 1995-1996.

- Extraordinary Student Award, Tsinghua University, 1992
  (Awarded to 5 out of 10,000 students in Tsinghua University, each year).

- Excellent Graduate, Tsinghuat University, 1994.

- Three Merit Student Award, Tsinghua University, 1990-1994.

- National College Students Mathematics Competition Award, 1990.

- National Olympic Mathematic Completion, 2nd in Liaoning Province, 1988.

- Represented the Arizona Symposium as an oral presenter to attend the 52nd National JSHS in Washington D.C. from April 23-27, 2014 , Yuanqi Zhang, Mentor Xianfeng Gu. (http://jshs.org/nationalreg.h

- 2014 Arizona Junior Science and Humanities Symposium First Place Winner, March 22nd, 2014, Yuanqi Zhang, Mentor Xianfeng Gu (http://azjshs.org/news.php).

- 6th Shing-Tung Yau High School Mathematics Awards Gold Prize Winner, December, 16th, 2013, "3D Surface Fabrication using Conformal Geometry", Yuanqi Zhang, Mentor Xianfeng. (http://www.yau-awards.org/sec/Notice26-c.php)

NSF Grants

1. AFOSR FA9550-10-1-0294: **Discrete Ricci Flow in Higher Dimensions**. Award effective 09/2012-06/2015

2. NSF DMS-1221339 **Collaborative Research: ATD: Algorithmic Aspects of Geometry for Using LIDAR and Wireless Sensor Networks for Combating Chemical Terror Attacks.** Award effective: 09/2012 to 06/2015.

3. CoPI: Nets-1016829 **Small: Large Scale Sensor Network Routing using Conformal Geometry**. Total Amount: $450,000$. Gu's portion: 51%, $230,000$. Award effective: 07/01/2010-06/30/2013.

4. PI: IIS: III - 0916286 **Small: Conformal Geometry for Computer Vision**. Total Amount: $100,000$. Gu's portion: 50%, $50,000$. Award effective: 09/01/2009-08/31, 2011.

5. CoPI: NSF CCF-1081424 **NSF CCF: AF: Small: Volumetric Mesh Mapping**. Total Amount: $500,000$. Gu's portion: 100%, $250,000$. Award effective: 07/15/2009-06/30/2012.

6. CoPI: NIH **NIH ARRA: Conformal Geometry for Medical Imaging**. Total Amount: $375571,000$. Gu's portion: 100%, $250,000$. Award effective: 07/15/2009-06/30/2010.

7. PI: ONR N000140910228 **Shape Space and Shape Matching Using Differential and Algebra-geometric Approaches**. Total Amount: $360,000$. Gu's portion: 100%, $360,000$. Award effective: 12/01/2008-11/31/2011.

8. PI: NSF CCF-0841514 **SGER: Discrete Volumetric Curvature Flow for Graphics Applications**. Total amount: $78,999$. Gu's portion: 100%, $78,999$. Award effective: 08/01/2008-07/31/2009.

9. PI: NSF CCF-0830550 **Collaborative Research: CCF-TF: Computing Geometric Structures of 3-Manifolds** (with F.Luo, Rutgers University). Total amount: $373,734$. Gu's portion: 72.89%, $239,994$. Award effective: 07/01/2009-06/30/2012.

10. CoPI: NSF IIS-0713145 **III-CXT: Collaborative Research: Integrated Modeling and Learning of Multimodality Data across Subjects for Brain Disorder Study** (with PI Jing Hua, CoPI Ming Dong, Wayne State University). Total amount: $341,166. Gu's portion: 36.75%, $125,362. Award effective 09/01/2007-09/30/2010.

11. CoPI: NSF DMS-0626223 **MSPA-MCS: Discrete Curvature Flows on Graphics and Visualization** (with PI Feng Luo, Rutgers University). Total amount: $371,984. Gu's portion: 48.39%, $180,000. Award effective: 08/01/2006-07/31/2009.

12. CoPI: NSF DMS-0528363 **MSPA-MCS: Collaborative Research: Computer Graphics and Visualization Using Conformal Geometry**(with PI Baoquan Chen, CoPI Yousef Saad, University of Minnesota). Total amount: $499,419. Gu's portion: 37.52%, $187,372. Award effective: 09/01/2005-08/31/2008.

13. PI: NSF CCF-0448399 **CAREER: Conformal Geometry Applied to Shape Analysis and Geometric Modeling**. Total amount: $473,468.00. Gu's portion: 100%, $473,468.00. Award effective: 02/01/2005-01/31/2009.

Other Funding

7. CoPI: NRF2008IDM-IDM004-006: **Geometry Videos: Exploring Highly Detailed Motion Data in Co-Space** (with PI Ying He, Chu-Hong Hoi, Nanyang Technology University), Ministry of Education, Singapore. *SGD*$1,444,000 (equal to US $958,068). Award effective:12/15/2008 to 12/14/2011.

8. CoPI: AcRF RG69/07: **Conformal Geometry Images Applied to New Paradigm of Geometric Modeling**(with PI Ying He, Nanyang Technology University, Tian-Tsong Ng, Institute of Infocomm Research), by National Foundation of Research of Singapore (NRF). SGD 172,000 (equal to US $122,176). Award effective:03/2008 to 02/2011.

9. PI: NSFC 60628202 **Outstanding Overseas Young Scholars Award: Computational Conformal Geometry** (with CoPI Shi-Min Hu, Tsinghua University), National Science Foundation of China. US $58,820. Award effective: 07/01/2007-12/30/2009.

10. PI: SUNY Research Support Match Funding. US $150,000. 2006.

11. CoPI: CEWIT Seed Funding: **Dynamic Geometric Acquisition and Processing** (with PI Peisen Huang, Mechanics Department, Stony Brook University). $4,000. 2006.

Patents

1. **Registration of Scanned Organs Acquired from Different Orientations**
   Inventor: Arie E. Kaufman, Xianfeng Gu and Wei Zeng, Joseph Marino, Krishna C. Gurijala
   Pub No.: US20130170726 A1, July 4, 2013
   Abstract: Disclosed is a method for registration of scans of an object, such as a biological organ, by obtaining scans of the object that includes a first scan obtained with the object in a first position and a second scan obtained with the object in a second position different from the first position, extracting landmarks within each of the scans, flattening each of the scans, detecting feature points of each of the flattened scans, matching corresponding feature points of each of the flattened scans, performing a harmonic map registration using the matched corresponding feature points and displaying the registered scans.

2. **System and method for context preserving maps of tubular structures**
   Inventor: Arie E. Kaufman, Joseph Marino, Xianfeng Gu and Wei Zeng
   Pub No.:WO2013059807 A1, Apr 25, 2013

Abstract: A computer-based method for generating a context preserving mapping of tubular structures represented by a 3D dataset having the steps of projecting a skeleton of a 3D tubular structure on to a 2D plane, and adjusting the projected skeleton to correct projection imbued distortion in skeleton length. The 2D projected skeleton is processed to remove intersections, and a surface boundary around the 2D skeleton is determined for the map. The 3D surface of the skeleton is mapped to match the 3D boundary to create a 3D map of the tubular structure.

3. **System and Method for Computer Aided Polyp Detection**
   Inventors: Arie E. Kaufman, Wei Hong, Xianfeng Gu, Feng Qiu
   Pub No.: US 2010/0215226 A1, Aug 26, 2010; Licensed by Siemens Healthcare Sector of Germany
   Abstract: In the present methods, the automatic detection of polyps is converted into a 2D pattern recognition problem using conformal mapping and direct volume rendering. The colon surface is first segmented and extracted from the CT data set of the abdomen, which is then mapped to a 2D plane using conformal mapping. Ray casting is used to determine sub-surface density values and the flattened image is rendered using a volume rendering technique with a translucent electronic biopsy transfer function. Polyp candidates are detected by a clustering method which identifies regions of elevated sub-surface density. The potential for false positives is reduced by analyzing the volumetric shape and texture features of the polyp candidate regions.

4. **Method and Apparatus for Absolute-Coordinate Three-Dimensional Surface Imaging**
   Inventors: Song Zhang, Shing-Tung Yau, Xianfeng Gu, Yalin Wang, Dale Royer
   Pub No.: US2009/0238449 A1, Nov 9, 2006
   Abstract: A method and associated apparatus for capturing an image of a 3D object which encodes the surface geometry of at least a portion of the object, comprising: 1. projecting a plurality of fringe patterns onto the object; 2. capturing phase alterations in reflections of the fringe patterns from the object; 3. projecting a uniform image onto the object; 4. capturing a reflection of the uniform image from the object; and 5. combining captured phase alterations and captured uniform image reflection on a pixel-by-pixel basis, thereby forming a holoimage representation of the object.

5. **Analysis of Geometric Surfaces by Conformal Structure**
   Inventors: Shing-Tung Yau, Xianfeng Gu, Yalin Wang
   Pub No.: US 2006/0013505 A1, Nov 6, 2003
   Abstract: A method for analyzing, classifying, and recognizing geometric surfaces is disclosed. Geometric surfaces are treated as Riemann manifolds and the conformal structure corresponding to the surfaces is calculated. The conformal structure of the surface contains the intrinsic geometric information about the surface, but in a much more compact format as compared to other representations. Conformally mapping the surface to a canonical parameter domain, such as a disk, sphere, or plane retains the geometric information of the surface, and renders the calculation of conformal structure much easier. Various applications enabled by such a conformal representation include surface matching, surface cataloging, surface recognition, animation and morphing between surfaces, and other mathematical analysis.

6. **Fingerprint Recognition System**
   Inventor: Shing-Tung Yau, Xianfeng Gu, Zhiwu Zhang
   Patent No.: 6876757, Apr 5, 2005
   Abstract: A method of analyzing and recognizing fingerprint images that utilizes vector processing of a vector field that is defined as the tangential vector of the fingerprint ridge curves is disclosed. The raw fingerprint image is divided into blocks, filtered to remove noise, and

the orientation direction of each block is found. This allows the ridge curves to be enhanced and approximated by piece-wise linear approximations. The piece-wise linear approximations to the ridge curves allow the minutiae to be extracted and classified and a fingerprint minutiae template to be constructed. An enrollment process gathers multiple fingerprint images, creates fingerprint minutiae templates corresponding to the acquired fingerprint images, and stores the templates and other data associated with the respective individual or the enrolled fingerprint in a fingerprint database.

Book Publication

1. Xianfeng Gu and Shing-Tung Yau. **Computational Conformal Geometry**, *Series: Advanced Lectures in Mathematics, Vol 3, Publisher: International Press and Higher Education Press, ISBN 978-1-57146-171-1*, 2007.

2. Feng Luo, Xianfeng Gu and Junfei Dai. **Variational Principles for Discrete Surfaces**, *Series: Advanced Lectures in Mathematics, Vol 4, Publisher: International Press and Higher Education Press, ISBN 978-1-57146-172-8*, 2007.

3. Wei Zeng, Xianfeng Gu, **Ricci Flow for Shape Analysis and Surface Registration - Theories, Algorithms and Applications**, *Springer*, 2012.

Book Chapter Publication

4. Xianfeng Gu, **Conformal Geometry Applied in Engineering and Medical Imaging** in "Mathematics and Culture", 2013.

5. Huafeng Wang, Lihong Li, Hao Han, Yunhong Wang, Weifeng Lv, Xianfeng Gu and Zhenrong Liang, **A Novel Colon Wall Flattening Model for Computed Tomographic Colonography: Method and Validation** in "Bio-Imaging and Visualization for Patient-Customized Simulations", Springer 2014.

6. Wei Zeng, Rui Shi, Zhengyu Su and Xianfeng Gu, **Colon Surface Registration Using Ricci Flow** in "Abdomen and Thoracic Imaging - An Engineering & Clinical Perspective", ed. Yunqian Ma and Yun Fu, Springer. 2013.

7. Wei Zeng, Rui Shi, Zhengyu Su and Xianfeng Gu, **Efficient Topological Cleaning for Visual Colon Surface Flattening** in "Abdomen and Thoracic Imaging - An Engineering & Clinical Perspective", ed. Ayman El-baz, Springer. 2013.

8. Xianfeng Gu, Wei Zeng, Jian Sun, Ren Guo and Feng Luo, **Discrete Heat Kernel Determines Metric** in "Manifold Learning Theory and Applications", ed. Yunqian Ma and Yun Fu, Chapter VIII. 2011.

9. Wei Zeng, Feng Luo, Shing-Tung Yau and Xianfeng Gu, **3D Surface Representation Using Ricci Flow** in "Computer Vision: From Surfaces to 3D Objects", ed. Christopher W. Tyler, Chapter IV, 65-94. Boca Raton, FL: CRC Press. 2010.

10. Xianfeng Gu, Feng Luo, Wei Zeng and Shing-Tung Yau, **Discrete Ricci flow for Surface and 3-Manifold** in "Manifold Learning Theory and Applications", ed. Yunqian Ma and Yun Fu, Chapter VII. 2011.

11. Xiaotian Yin, Miao Jin, Feng Luo and Xianfeng Gu. **Discrete Curvature Flow for Surfaces and 3-Manifolds** in "Emerging Trends in Visual Computing", *Series:Lecture Notes on Computer Science, Publisher:Springer-Verlag, to appear*, 2009.

12. Xianfeng Gu, Yalin Wang, H.-S. Cheng, L.-T. Cheng and Shing-Tung Yau. **Geometric Methods in Engineering Applications** in "Mathematics and Computation, a Contemporary View", *Series: Abel Symposia, Vol.3, Editors: Hans Munthe-Kaas and Brynjulf Owren, Publisher:Springer-Verlag, ISBN:978-3-540-68848-8, to appear*, 2009.

13. Xianfeng Gu. **Yau's Contributions to Engineering Fiels**, in "Geometry and Analysis", Advanced Lectures in Mathematics 17, Vol. I, pp. 119–132, High Education Press, Editor L. Ji.

Refereed Journal Publications

14. Lok Ming Lui, Xianfeng Gu, Shing-Tung Yau, **Convergence of an Iterative Algorithm for Teichmüller Maps via Harmonic Energy Optimization**, accepted by AMS Mathematics of Computation (2014).

15. Min Zhang, Ren Guo, Wei Zeng, Feng Luo, Shing-Tung Yau and Xianfeng Gu, **The Unified Discrete Surface Ricci Flow**, accepted by Graphics and Models (2014).

16. Wei Luo, Zengyu Su, Min Zhang, Wei Zeng, Junfei Dai and Xianfeng Gu, **Shape Signature based on Ricci Flow and Optimal Mass Transportation**, accepted by SPIE Journal of Optical Engineering, Special issue on High-Speed 3-D Optical Metrology and Applications (2014).

17. Wei Zeng, Rui Shi, Yalin Wang, Shing-Tung Yau, Xianfeng Gu, **Teichmüller Shape Descriptor and Its Application to Alzheimer's Disease Study**, International Journal of Computer Vision, Vol 105 Issue , Pages 155-170 (2013).

18. L.M. Lui, K.C. Lam, T.W. Wong, X.F. Gu, **Texture map and video compression using Beltrami representation**, SIAM Journal on Imaging Sciences, Vol. 6, Issue 4, Pages 1880-1902, (2013)

19. Jin-shan Pan, Risheng Liu, Zhixun Su, Xianfeng Gu, **Kernel estimation from salient structure for robust motion deblurring**. Sig. Proc.: Image Comm. Vol. 28, Issue 9, Pages 1156-1170, (2013)

20. Jun Wang, Kai Xu, Ligang Liu, Junjie Cao, Shengjun Liu, Zeyun Yu and Xianfeng Gu, **Consolidation of Low-Quality Point Clouds from Outdoor Scenes**, Computer Graphics Forum, Vol. 32, Issue 5, pages 207-216, 2013.

21. Everett Kropf, Xiaotian Yin, Shing-Tung Yau and Xianfeng Gu, **Conformal Parameterization for Multiply-Connected Domains**, accepted by ACM Journal of Engineering with Computers (2013)

22. Zhengyu Su, Jian Sun, Xianfeng Gu, Feng Luo and Shing-Tung Yau, **Optimal Mass Transport for Geometric Modeling based on variational principles in convex geometry**, accepted by by ACM Journal of Engineering with Computers (2013)

23. Ka Chun Lam, Xianfeng Gu, Shing-Tung Yau, Lok Ming Lui, Teichmüller mapping (T-Map) and its applications to landmark matching registrations, accepted, SIAM Journal of Imaging Sciences(2013)

24. T.C. Ng, Xianfeng Gu, Lok Ming Lui, Teichmüller extremal map of multiply-connected domains using Beltrami holomorphic flow, accepted, Journal of Scientific Computing (2013)

25. R. Lai, Z. Wen, W. Yin, X.F. Gu, L.M. Lui, **Fast and Accurate Algorithms for Harmonic Energy Minimization on Genus-0 Surfaces, accepted**, Journal of Scientific Computing (2013)

26. L.M. Lui, C.F. Wen, X.F. Gu, **A conformal approach for surface inpainting**, accepted, *Journal of Inverse Problems and Imaging* (2013)

27. Krishna Chaitanya Gurijala, Rui Shi, Wei Zeng, Xianfeng Gu and Arie Kaufman, **Colon Flattening using heat diffusion Riemannian metric**, IEEE Transaction on Visualization and Computer Graphics, IEEE TVCG, 2013.

28. Xin Zhao, Zhengyu Su, Xianfeng David Gu, Arie Kaufman, Jian Sun, Jie Gao, Feng Luo, **Area-preservation Mapping using Optimal Mass Transport**, IEEE Transaction on Visualization and Computer Graphics, IEEE TVCG, 2013.

29. Xuejiao Chen, Huiguang He, Guangyu Zou, Xiaopeng Zhang, Xianfeng Gu and Jing Hua, **Ricci flow-based spherical parameterization and surface registration** *Computer Vision and Image Understanding*, Vol 117, Issue 9, Pages 1107-1118, September 2013.

30. Lok Ming Lui, Wei Zeng, Shing-Tung Yau and Xianfeng Gu, **Shape Analysis of Planar Multiply-connected Objects using Conformal Welding** *IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI)*, (accepted) 2013.

31. Rongjie Lai, Zaiwen Wen, Wotao Yin, Xianfeng Gu and Lok Ming Lui, **Folding-Free Global Conformal Mapping for Genus-0 Surfaces by Harmonic Energy Minimization**, Journal of Scientific Computing, Vol 58, Issue 3, Pages 705-725, 2014.

32. Wei Zeng, Rui Shi, Yalin Wang, Shing-Tung Yau, Xianfeng Gu, ADNI Group, **Teichmüller Shape Descriptor and Its Application to Alzheimer's Disease Study**, *International Journal of Computer Vision*, 105(2), pp.155-170, 2013.

33. X. Chen, H. He, G. Zhou, X. Zhang, Xianfeng Gu, Jing Hua, **Ricci flow-based spherical parameterization and surface registration**, *Computer Vision and Imaging Understanding* 2013.

34. Wei Zeng, Ren Guo, Feng Luo and Xianfeng Gu. **Discrete Heat Kernel Determines Discrete Reimannian Metric**. *Graphical Models*, 2012.

35. Min Zhang, Yinghua Li, Wei Zeng and Xianfeng Gu. **Canonical conformal mapping for high genus surfaces with boundaries**. *Computer and Graphics*, 2012.

36. Wei Zeng, Lok Ming Lui, Feng Luo, Tony Chan, Shing-Tung Yau and Xianfeng Gu. **Computing Quasiconformal Mappings on Riemann Surfaces Using Auxiliary Metric Based on Discrete Curvature Flow**. *Numerische Mathematik*, 2012.

37. Xin Zhao, Klaus Mueller, Wei Zeng, Arie Kaufman, Wei Xu and Xianfeng Gu. **Conformal Magnifier: A Fcous + Context Technique with Minimal Distortion**. *IEEE Transaction on Visualization and Computer Graphics*, September 2012.

38. Xiaotian Yin, Yinghua Li, Wei Han, Feng Luo, Xianfeng Gu and Shing-Tung Yau. **Computing Shortest Words via Shortest Loops on Hyperbolic Surfaces**. *Computer-Aided Design (CAD)*, 43(11), 2011.

39. Joe Marino, Wei Zeng, Xianfeng Gu and Arie Kaufman. **Context Preserving Maps of Tubular Structures**. *IEEE Transaction on Visualization and Computer Graphics (IEEE TVCG)*, 17(12):1997-2004, 2011.

40. Guangyu Zou, Jiaxi Hu, Xianfeng Gu, and Jing Hua. **Authalic Parameterization of General Surfaces Using Lie Advection**. *IEEE Transactions on Visualization and Computer Graphics (VIS)*, Vol. 17, No. 6, 2011.

41. Yanglin Wang, Jie Shi, Xiaotian Yin, Tony F. Chan, Arthur W. Toga, Shing-Tung Yau and Paul M. Thompson. **Brain Surface Conformal Parameterization with the Ricci Flow**. *IEEE Transaction on Medical Imaging*, September 2011.

42. Xianfeng Gu, Wei Zeng, Feng Luo and Shing-Tung Yau. **Numerical Computation of Surface Conformal Mappings**. *Computational Methods and Function Theory*, August , 2011.

43. Xianfeng Gu, Feng Luo and Shing-Tung Yau. **Fundamentals of Computational Conformal Geometry**. *Mathematics in Computer Science*, June 2011.

44. Wei Zeng, Dimitris Samaras and Xianfeng Gu. **Ricci Flow for 3D Shape Analysis**. *IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI)*, 32(4): 662-677, 2010.

45. Wei Zeng, Joseph Marino, Krishna C. Gurijala, Xianfeng Gu and A. Kaufman. **Supine and Prone Colon Registration Using Quasi-Conformal Mapping**. *IEEE Transactions on Visualization and Computer Graphics (IEEE TVCG)*, 16(6): 1348-1357, 2010.

46. Wei Zeng, Joseph Marino, Arie Kaufman and Xianfeng Gu. **Volumetric Colon Wall Unfolding Using Harmonic Differentials**. *Computer & Graphics (C&G)*, 35(3): 726-732, 2011.

47. Lok Ming Lui, T. W. Wong, Wei Zeng, Xianfeng Gu, Paul M. Thompson, Tony F. Chan, Shing-Tung Yau. **Optimization of Surface Registrations Using Beltrami Holomorphic Flow**. *Journal of Scientific Computing (JSC)*, 2011.

48. Lok Ming Lui, T. W. Wong, Wei Zeng, Xianfeng Gu, Paul M. Thompson, Tony F. Chan and Shing-Tung Yau. **Detecting Shape Deformations Using Yamabe Flow and Beltrami Coefficients**. *Journal of Inverse Problems and Imaging (IPI)*, 4(2):311-333, 2010.

49. Lok Ming Lui, Tsz Wai Wong, Wei Zeng, Xianfeng Gu, Paul M. Thompson, Tony F. Chan, Shing-Tung Yau, **Optimization of Surface Registrations using Beltrami Holomorphic Flow**. *Journal of Inverse Problem and Imaging (IPI)*, (to appear) 2011.

50. Xianfeng Gu, Feng Luo and Shing-Tung Yau, **Fundamentals of Computational Conformal Geometry**. *Mathematics in Computer Science*, 2011.

51. Lok Ming Lui, Tsz Wai Wong, Wei Zeng, Xianfeng Gu, Paul M. Thompson, Tony F. Chan and Shing-Tung Yau, **Detection of shape deformities using Yamabe flow and Beltrami coefficients**, *Inverse Problems and Imaging*, 4(2):311-333, 2010.

52. Wei Zeng, Jing Hua and Xianfeng Gu, **Symmetric Conformal Mapping for Surface Matching and Registration**. *International Journal of CAD/CAM*, 9(1):103-109, 2009.

53. Guodong Rong, Yang Liu, Wenping Wang, Xiaotian Yin, Xianfeng Gu and Xiaohu Guo. **GPU-Assisted Computation of Centroidal Voronoi Tessellation**. *IEEE Transaction on Visualization and Computer Graphics (TVCG)*, 17(3):345-356, March 2011.

54. Wei Luo, Junfei Dai, Xianfeng Gu and Shing-Tung Yau, **Numerical Conformal Mapping of Multiply Connected Domains to Regions with Circular Boundaries**. *Journal of Computational and Applied Mathematics*, 233(11):2940-2947, 2010.

55. Ye Duan, Qing He, Xiaotian Yin, Xianfeng Gu, Kevin Karsch, and Judith Miles. **Detecting corpus callosum abnormalities in autism subtype using planar conformal mapping**. *International Journal for Numerical Methods in Biomedical Engineering*, 26(2):164-175, February 2010.

56. Yongliang Yang, Ren Guo, Feng Luo, Shimin Hu and Xianfeng Gu. **Generalized Discrete Ricci Flow**. *Computer Graphics Forum*, 28(7):2005-2014, October 2009.

57. Guangyu Zou, Jinghua Hua, Z. Lai, Xianfeng Gu and Ming Dong. **Intrinsic Geometric Scale Space by Shape Diffusion**. *IEEE Transaction on Visualization and Computer Graphics (TVCG)*, 15(6):1193-1200, 2009.

58. Xianfeng Gu, Feng Luo and Shing-Tung Yau. **Recent Advancements in Computational Conformal Geometry**. *Communication on Information and System*, 2009.

59. Miao Jin, Wei Zeng, Ning Ding, Xianfeng Gu and Shing-Tung Yau. **Computing Fenchel-Nielsen Coordinates in Teichmüller Shape Space**. *Communication on Information and System*, 2009.

60. Kyle Hegeman, Hongyu Wang, Michael Ashikhmin, Xianfeng Gu, Hong Qin, **GPU-based Conformal Flow on Surfaces**. *Communication on Information and System*, 2009.

61. Lok Ming Lui, Xianfeng Gu, Tony F. Chan and Shing-Tung Yau, **Variational Method on Riemann Surfaces using Conformal Parameterization and its Applications to Image Processing**. *Journal of Methods and Applications of Analysis (MAA)*, 15(4):513-538, 2008.

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182. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Conformal Slit Mapping and Its Applications to Brain Surface Conformal Parameterization**. *Proceeding of 11th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI08)*, New York, USA, September 6-10, 2008.

183. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Brain Surface Conformal Slit Mapping**. *14th Annual Meeting of the Organization for Human Brain Mapping (HBM08)*, Melbourne, Australia, June 15-19, 2008.

184. Yalin Wang, Xiaotian Yin, J. Zhang, Xianfeng Gu, Tony F. Chan, P. Thompson and Shing-Tung Yau. **Brain Mapping with the Ricci Flow Conformal Parameterization and Multivariate Statistics on Deformation Tensors**. *Proceedings of the 2nd MICCAI Workshop on Mathematical Foundations of Computational Anatomy (MFCA2008)*, Pages:36-47, New York, USA, September 6, 2008.

185. Miao Jin, Junho Kim, Feng Luo, and Xianfeng Gu. **Variational Method on Discrete Ricci Flow**. *International Workshop on Combinatorial Image Analysis 2008 (IWCIA)*, Buffalo, NY, USA, April 7-9, 2008.

186. Hongyu Wang, Miao Jin, Ying He, Xianfeng Gu and Hong Qin. **User-controllable Polycube Map for Manifold Spline Construction**. *Proceedings of the 2008 ACM Symposium on Solid and Physical Modeling*, Pages:397-404, Stony Brook, New York, USA, June 2-4, 2008.

187. Xin Li, Xianfeng Gu and Hong Qin. **Surface Matching Using Consistent Pants Decomposition**. *Proceedings of the 2008 ACM Symposium on Solid and Physical Modeling*, Pages:125-136, Stony Brook, New York, USA, June 2-4, 2008.

188. Xiaotian Yin, Junfei Dai, Shing-Tung Yau and Xianfeng Gu. **Slit Map: Conformal Parameterization for Multiply Connected Surfaces**. *Proceedings of the 5th International Conference Advances in Geometric Modeling and Processing (GMP 2008)*, Pages:410-422, Hangzhou, China, April 23-25, 2008.

189. Xianfeng Gu, S. Wang, J.Kim, Y. Zeng, Y.Wang, Hong Qin and D.Samaras. **Ricci Flow for 3D Shape Analysis**. *Proceedings of The Eleventh IEEE International Conference on Computer Vision (ICCV 2007)*, Rio de Janeiro, Brazil, October 14-20, 2007.

190. Xin Li, Xianfeng Guo, Hongyu Wang, Ying He, Xianfeng Gu and Hong Qin. **Harmonic Volumetric Mapping for Solid Modeling Applications**. *Proceedings of the 2007 ACM Symposium on Solid and Physical Modeling (SPM'07)*, Pages:109-120, Tsinghua University, Beijing, China, June 4-6, 2007.

191. Xianfeng Gu, Ying He, Miao Jin, Feng Luo, Hong Qin and Shing-Tung Yau. **Manifold Splines with Single Extraordinary Point**. *Proceedings of the 2007 ACM Symposium on Solid and Physical Modeling (SPM'07)*, Pages:61-72, Tsinghua University, Beijing, China, June 4-6, 2007.

192. Hongyu Wang, Ying He, Xin Li, Xianfeng Gu and Hong Qin. **Polycube Splines**. *Proceedings of the 2007 ACM Symposium on Solid and Physical Modeling (SPM'07)*, Pages:241-251, Tsinghua University, Beijing, China, June 4-6, 2007.

193. Miao Jin, Feng Luo and Xianfeng Gu. **Computing Geodesic Spectra of Surfaces**. *Proceedings of the 2007 ACM Symposium on Solid and Physical Modeling (SPM'07)*, Pages:387-393, Tsinghua University, Beijing, China, June 4-6, 2007.

194. J. Yu, Xiaotian Yin, Xianfeng Gu, L. McMillan and S. Gortler. **Focal Surfaces of Discrete Geometry**. *Proceedings of the Fifth Eurographics Symposium on Geometry Processing (SGP'07)*, Pages:23-32, Barcelona, Spain, July 4-6, 2007.

195. Xianfeng Gu, Miao Jin, Junho Kim and Shing-Tung Yau. **Computational Conformal Geometry Applied in Engineering Fields**. *Proceedings of the Fourth International Congress of Chinese Mathematicians (ICCM'07)*, Zhejiang University, Hangzhou, China, Decemter 17-22, 2007. (Plenary Talk)

196. Junfei Dai, Junho Kim, H. Zeng and Xianfeng Gu. **Visualizing the Evolutions of Silhouettes**. *Computer Graphics International 2007 (CGI'07)*,Petropolis,RJ,Brazil, May 30-June 2, 2007.

197. Xiaotian Yin, Miao Jin and Xianfeng Gu. **Computing Shortest Cycles using Universal Covering Spaces**. *Proceedings of the 10th International Conference on Computer Adided Design and Computer Graphics (CAD/Graphics2007)*,Pages:25, Peking University, Beijing, China, October 15-18, 2007. (Best Student Paper Award)

198. Miao Jin, Junho Kim, and Xianfeng Gu. **Discrete Surface Ricci Flow: Theories and Applications**. *Mathematics of Surfaces 2007 Proceedings of Mathematics of Surfaces XII, 12th IMA International Conference*, Pages:209-232, Sheffield, UK, September 4-6, 2007.

199. Xianfeng Gu, Yalin Wang, H.-B. Cheng, L.-T. Cheng and Shing-Tung Yau. **Geometric Methods in Engineering Applications**. *The Abel Symposium 2006:Mathematics and Computation, a Contemporary View*, Alesund, Norway, May 25-27,2006.

200. Miao Jin, Feng Luo and Xianfeng Gu. **Computing Surface Hyperbolic Structure and Real Projective Structure**. *Proceedings of the Tenth ACM Symposium on Solid and Physical Modeling 2006 (SPM'06)*, Pages:105-116, Cardiff University, Wales, UK, June 6-8, 2006.

201. Xianfeng Gu, Song Zhang, Ralph Martin, Peisen Huang and Shing-Tung Yau. **Holoimages**. *Proceedings of the Tenth ACM Symposium on Solid and Physical Modeling 2006 (SPM06)*, Pages:129-138, Cardiff University, Wales, UK, June 6-8, 2006.

202. W.Hong, Xianfeng Gu, Feng Qiu, Miao Jin and Arie E. Kaufman. **Conformal Virtual Colon Flattening**. *Proceedings of the Tenth ACM Symposium on Solid and Physical Modeling 2006 (SPM'06)*, Pages:85-93, Cardiff University, Wales, UK, June 6-8, 2006.

203. S. Wang, Yang Wang, Miao Jin, Xianfeng Gu and Dimitris Samaras. **3D Surface Matching and Recognition Using Conformal Geometry**. *Proceedings of the IEEE Computer Vision Pattern Recognition (CVPR06)*, Pages:2453-2460, New York, USA, June 2006.

204. Ying He, Kexiang Wang, Hongyu Wang, Xianfeng Gu and Hong Qin. **Manifold T-Spline**. *Proceedings of the 4th International Conference on Geometric Modeling and Processing*, Pages:409-422, Pittsburgh, PA, USA, July 26-28, 2006.

205. Junfei Dai, Wei Luo, Shing-Tung Yau and Xianfeng Gu. **Geometric Accuracy Analysis for Discrete Surface Approximation**. *Proceedings of the 4th International Conference on Geometric Modeling and Processing*, Pages:59-72, Pittsburgh, PA, USA, July 26-28, 2006.

206. Xin Li, Xianfeng Gu and Hong Qin. **Curve Spaces on Genus Zero Surfaces**. *2006 International Conference on Shape Modeling and Applications (SMI 2006)*, Pages:38, Matsushima, Japan, 14-16 June 2006.

207. K. Wang, Ying He, Xianfeng Guo, Xianfeng Guo and Hong Qin. **Spline Thin-Shell Simulation of Manifold Surface**. *Proceedings of Advances in Computer Graphics, 24th Computer Graphics International Conference (CGI2006) LNCS*, Pages:570-577, Hangzhou, China, June 26-28, 2006.

208. Guangyu Zou, Jing Hua, Xianfeng Gu, and O. Muzik. **An Approach for Intersubject Analysis of 3D Brain Images based on Conformal Geometry**. *Proceedings of the International Conference on Image Processing, (ICIP 2006)*, Pages:1193-1196, Atlanta, Georgia, USA, October 8-11,2006.

209. Guangyu Zou, Y. Xi, G. Heckenberg, Ye Duan, Jing Hua, and Xianfeng Gu. **Integrated Modeling of PET and DTI Information based on Conformal Brain Mapping**. *Medical Imaging 2006: Physiology, Function, and Structure from Medical Images. Proceedings of the SPIE*, Volume 6143, Pages 631-639, 2006.

210. Yalin Wang, Xianfeng Gu, P. Thompson, Tony F. Chan and Shing-Tung Yau. **Brain Surface Conformal Parameterization with Algebraic Functions**. *Proceedings of the 9th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2006)*, Pages:946-954, Copenhagen, Denmark, October 1-6, 2006.

211. Shengying Li, Zhe Fan, Xiaotian Yin, Klaus Muller, Arie E. Kaufman and Xianfeng Gu. **Real-Time Reflection Using Ray Tracing using Geometry Fields**. *Eurographics*, Vienna, September 2006.

212. C. Carner, Miao Jin, Xianfeng Gu and Hong Qin. **Topology-driven Surface Mappings with Robust Feature Alignment**. *Proceedings of the 16th IEEE Visualization Conference (VIS 2005)*, Pages:69, Minneapolis, MN, USA, October 23-28, 2005.

213. Yang Wang, M. Gupta, Song Zhang, S. Wang, Xianfeng Gu, Dimitris Samaras and P. Huang. **High Resolution Tracking of Non-Rigid 3D Motion of Densely Sampled Data Using Harmonic Maps**. *Proceedings of the 10th IEEE International Conference on Computer Vision (ICCV 2005)*,Pages:388-395, Beijing, China, October 17-20, 2005.

214. Yalin Wang, Xianfeng Gu, Kiralee M. Hayashi, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Surface Parameterization using Riemann Surface Structure**. *Proceedings of the 10th IEEE International Conference on Computer Vision (ICCV 2005)*, Pages:1061-1066, Beijing, China, October 17-20, 2005.

215. Yalin Wang, Xianfeng Gu, Kiralee M. Hayashi, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Brain Surface Parameterization using Riemann Surface Structure**. *Proceedings of the 8th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Pages:657-665,Palm Springs, CA, USA, October 26-29 2005.

216. Yalin Wang, Xianfeng Gu, Kiralee M. Hayashi, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Brain Surface Conformal Parameterization**. *Proceedings of the Eighth IASTED International Conference on Computer Graphics and Imaging (CGIM)*, Pages:76-81, Honolulu, HI, USA, August 15-17, 2005.

217. Yalin Wang, Xianfeng Gu, Kiralee M. Hayashi, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Brain Surface Parameterization with Holomorphic Differential Forms**. *11th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*, Toronto, Canada, June 12-16, 2005.

218. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Direct Painting Software for Tracing on 3D Brain Surfaces with Global Conformal Parameterization**. *11th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*, Toronto, Canada, Jun. 12-16, 2005.

219. Ying He, Miao Jin, Xianfeng Gu, and Hong Qin. **A C^1 globally interpolatory spline of arbitrary topology**. *Proceedings of the 3rd IEEE Workshop on Variational, Geometric and Level Set Methods in Computer Vision (VLSM'05) (in conjunction with ICCV'05)*, Pages:295-306, Beijing China, October 16, 2005.

220. Ying He, Xin Li, Xianfeng Gu, and Hong Qin. **Brain Image Analysis Using Spherical Splines**. *Proceedings of the 5th International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR'05)*, Pages:633-644, St. Augustine FL, USA, November 9-11, 2005.

221. L. Wang, Xianfeng Gu, K. Mueller, Shing-Tung Yau. **Uniform Texture Synthesis and Texture Mapping Using Global Parameterization**. *Proceedings of Pacific Graphics (PG'05)*, Macao, China, 2005.

222. Ying He, Xianfeng Gu, and Hong Qin. **Fairing Triangular B-splines of Arbitrary Topology**. *Proceedings of Pacific Graphics (PG05)*, short paper, Macao, China, 2005.

223. Xianfeng Gu, Ying He, and Hong Qin. **Manifold splines**. *Proceedings of the Ninth ACM Symposium on Solid and Physical Modeling 2005(SPM'05)*, Pages:27-38, Cambridge, Massachusetts, USA, June 13-15, 2005.

224. Ying He, Xianfeng Gu, and Hong Qin. **Rational spherical splines for genus zero shape modeling**. *Proceedings of IEEE Shape Modeling International (SMI 05)*, Pages 82-91, Cambridge, MA, USA, June 15-17, 2005.

225. Yukun Lai, Shimin Hu, Xianfeng Gu and R.R.Martin. **Geometric Texture synthesis and transfer via geometry images**. *Proceedings of the Ninth ACM Symposium on Solid and Physical Modeling 2005(SPM'05)*, Pages:15-26, Cambridge, Massachusetts, USA, June 13-15, 2005.

226. Miao Jin, Yalin Wang, Shing-Tung Yau and Xianfeng Gu. **Optimal Global Conformal Surface Parameterization for Visualization**. *Proceedings of the IEEE conference on Visualization (IEEE Vis'04)*, Pages:267-274, Austin, TX, USA, October. 2004.

227. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Volumetric Harmonic Brain Mapping using a Variational Method**. *10th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*, Budapest, Hungary, June 13-17, 2004.

228. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Volumetric Harmonic Brain Mapping**. *Proceedings on IEEE International Symposium on Biomedical Imaging: From Nano to Macro (ISBI)*, Pages:1275-1278, Washington D.C., USA, April 2004.

229. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Brain Surface Conformal Mapping and Brain Volumetric Harmonic Map with Variational Methods**. *SIAM Conference on Imaging Science*, Salt Lake City, Utah, May 2004.

230. Yalin Wang, Xianfeng Gu, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Intrinsic Brain Surface Conformal Mapping using a Variational Method**. *In SPIE International Symposium on Medical Imaging*, Pages:241-253, 2004.

231. Xianfeng Gu and B. C. Vemuri. **Matching 3D Shapes Using 2D Conformal Representations**. *Proceedings of the 7th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2004)*, Pages:771-780, Saint-Malo, France, September 26-29, 2004.

232. Xianfeng Gu, Yalin Wang, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Genus Zero Surface Conformal Mapping and Its Application to Brain Surface Mapping**. *Proceedings of the 18th International Conference on Information Processing in Medical Imaging (IPMI 2003)*, Pages:172-184,Ambleside, UK, July 2003.

233. Xianfeng Gu, Yalin Wang, Tony F. Chan, Paul M. Thompson and Shing-Tung Yau. **Brain Surface Conformal Mapping**. *9th Annual Meeting of the Organization from Human Brain Mapping (OHBM)*, New York City, NY, Jun. 18-22, 2003.

234. Xianfeng Gu, Yalin Wang, and Shing-Tung Yau. **Multiresolution Computation of Conformal Structures of Surfaces**. *International Conference on Computer, Communication and Control Technologies (CCCT'03)*, (Best paper),2003.

235. Xianfeng Gu and Shing-Tung Yau. **Global Conformal Surface Parameterization**. *First Eurographics Symposium on Geometry Processing (SGP03)*, Pages:127-137, Aachen, Germany, June 23-25, 2003.

236. Xianfeng Gu and Shing-Tung Yau. **Surface Classification Using Conformal Structures**. *Proceedings of the 9th IEEE International Conference on Computer Vision (ICCV 2003)*, Pages:701-708, Nice, France, 14-17 October 2003.

237. Craig Gotsman, Xianfeng Gu and Alla Sheffer. **Fundamentals of Spherical Parameterization for 3D Meshes**. *Proceedings of ACM SIGGRAPH*, Pages 358-363, 2003.

238. Xianfeng Gu, Steven J. Gortler and Hugues H. Hoppe. **Geometry Images**. *Proceedings of ACM SIGGRAPH*, Pages 355-361, 2002.

239. Pedro V. Sander, Xianfeng Gu, Steven J. Gortler, Hugues H. Hoppe, John Snyder. **Silhouette Clipping**. *Proceedings of ACM SIGGRAPH*, Pages 327-334, 2000.

240. Xianfeng Gu, Steven J. Gortler and Michael F. Cohen. **Polyhedral Geometry and the Two-Plane Parameterization**. *Proceedings of the Eurographics Workshop on Rendering Techniques '97*, Pages:1-12, St. Etienne, France, June 16-18, 1997.

Invited Speeches

1. 06/17/2014, Methods in Computational Conformal Geometry, LIRIS, Ecole Centrale Lyon

2. 06/16/2014, Methods in Computational Conformal Geometry, LIRIS, Ecole Centrale Paris

3. 06/13/2014, A Discrete Uniformization Theorem, Curves and Surfaces 2014, Paris.

4. 08/18/2013, Key Note Speech: Computational Conformal Geometry, Theory, Algorithms and Applications, the Fifth National Conference on Computer and Mathematics, ChangChun, 2013

5. 07/31/2013, Tutorial on Conformal Geometry for Computer Vision, Graduate Summer School: Computer Vision, IPAM UCLA

6. 07/31/2013, Tutorial on Surface Ricci Flow for Shape Registration and Analysis, Graduate Summer School: Computer Vision, IPAM UCLA

7. 07/31/2013, Tutorial on Optimal Mass Transportation Theory for Computer Vision, Graduate Summer School: Computer Vision, IPAM UCLA

8. 07/21/2013, Diffeomorphic registration with Large deformation using Quasi-conformal maps, International Workshop on Compressive Sensing: Theory and Application, National Defense Science and Technology University, Changsha, 2013

9. 07/19/2013, Key Note Speech: Computational Conformal Geometry, The Sixth National Geometric Design and Computation, 2013

10. 07/15/2013, Computational Conformal Geometry, theory, algorithm and application, 45 minutes talk, International Congress of Chinese mathematicians, 2013, Taipei.

11. 07/17/2013, Optimal Mass Transportation, Theory and Algorithm, The Sixth National Geometric Design and Computation, 2013

12. 07/15/2013, Computational Conformal Geometry, International Congress of Chinese Mathematicians.

13. 06/20/2013, Computational methods in conformal geometry based on Hodge theory and Ricci flow, Plenary talk, AMMP Workshop: Conformal Geometry in Mapping, Imaging and Sensing, Imperial College London.

14. 12/17/2012, Computational Conformal geometry, Theories and Applications, Imaging Science, A Conference dedicated to Professor Stanley Osher, Mathematics Science Center, Tsinghua University, Beijing

15. 12/14/2012, Optimal Transport Map and Teichmüller Map, International Conference on Imaging Science 2012, in honor of Prof. Stanley Osher's 70th birthday, Hong Kong University of Science and Technology, Hong Kong Baptist University, The Hong Kong Polytechnic University

16. 08/06/2012, Computational Conformal Geometry, Theory and Applications, International Conference on Applied Mathematics, Morningside Center of Mathematics, Chinese Academy of Science.

17. 7/21/2012, Discrete Ricci Flow. 3D Geometry and Imaging International Conference in Kunming University of Science and Technology, Yunnan, China.

18. 5/23/2012, Tutorial: Surface-, Flow-, and Volume-Based Techniques for Shape Modeling, with Giuseppe Patane, Xin Shane Li and Michela Spagnuolo, Shape Modeling International, College State, Texas.

19. 5/21/2012, Surface Ricci Flow and its Applications, SIAM conference on Imaing Science, Philadelphia PA.

20. 3/18/2012, Ricci flow in Wireless Sensor Networks,AMS Special session on Dynamics of Complex Networks, George Washington University, DC.

21. 12/19/2011, Discrete Riccci Flow, Tsinghua Sanya International Mathematics Forum,

22. 9/21/2011, Applications of Ricci Flow in Engineering Fields, Mathematics Department, Lehigh University

23. 8/23/2011, Computational Conformal Geometry, Electronic Engineering Department, Tsinghua University

24. 8/12/2011, Computational Conformal Geometry, University of Science and Technology of China

25. 6/19/2011 - 6/24/2011, Computational Conformal Geometry, Ecole Centrale Lyon, France.

26. 02/24/2011, Computational Conformal Geometry: Theories and Applications, Computer Science Department, Ohio State University, Columbus, Ohio.

27. 02/9/2011, Conformal Geometry Applied in Medical Imaging, Center of Excellence Wireless and Information Technology (CEWIT), New York.

28. 01/20/2011, 3D Human Face Tracking and Identification, Research and Technology Summit, Applied Science Foundation for Homeland Security Headquarters of Long Island.

29. 01/15/2011, Surface and Volume Parameterization Methods, Isogeometric Analysis 2011: Integrating Design and Analysis, The University of Texas at Austin.

30. 01/14/2011, Computational Conformal Geometry, theories and applications, Science Academy of China.

31. 01/05/2011-01/12/2011, Computational Conformal Geometry, Kunming Technology University, Kunming Yunnan, China.

32. 01/05/2011, Collaborative Research: Developing, Testing and Validating Brain Alignment Algorithm . AFOSR 2011 Cognition and Decision Program Review, Dayton, Ohio, USA.

33. 12/21/2010, Computational Conformal Geometry in Engineering and Medicine Fields, Invited 45 minutes talk, International Congress of Chinese Mathematician, ICCM 2010.

34. 12/24/2010, Fundamentals for Computational Conformal Geometry, Software Engineering Institute, Multimedia Laboratory, Dalian Technology University.

35. 12/24/2010, Fundamentals for Computational Conformal Geometry, Mathematics Department, Dalian Technology University.

36. 12/15/2010, Fundamentals for Computational Conformal Geometry, Brain Computer Interface Laboratory, South China University (Hua Nan University).

37. 10/22/2010, Fundamentals for Computational Conformal Geometry, CSE600, Computer Science Department, Stony Brook University.

38. 10/04/2010, Fundamentals for Computational Conformal Geometry, School of Computer Science, Kookmin University, Seoul, Korea.

39. 09/29/2010, Fundamentals for Computational Conformal Geometry, National Chiao Tung University, Taiwan.

40. 08/18/2010, Computational Conformal Geometry, Department of Electrical and Computer Engineering National University of Singapore.

41. 08/07/2010, Fundamentals of computational conformal Geometry, Qingdao University.

42. 07/03/2010, Digital Geometry processing, Kunming University.

43. 06/01/2010-07/30/2010, Computational Conformal Geometry Lectures, Tsinghua University.

44. 2010 Barret Memorial Lectures, the University of Tennessee, May 17-21, Discrete Differential Geometry and Applications, Discrete Conformal Geometry

45. Invited Speaker for **16th US National Congress of Theoretical and Applied Mechanics**, June27-July 2, 2010. State College, PA. **Computational Conformal Geometry Method for Geometric Modeling**

46. Invited Speaker for **AFOSR 2010 Complex Netowrks Program Review**, Dr.Bob Bonneau, 19-22 January, 2010. Arlington, VA.

47. Invited Speaker for **AMS Special Session on Topological Methods in Applied Mathematics**, Washington DC, December 2008.

48. Invited Speaker for **Emerging Trends in Visual Computing**, Computer Science department of Ecole Polytechnique, France, November 18-20, 2008.

49. Invited Speaker for **IEEE International Conference on Shape Modeling and Applications (SMI'08)**, Stony Brook, NY, USA, June 4-6, 2008.

50. Invited Speaker for **First International Workshop on Algebraic Geometry and Approximation Theory**, Department of Mathematics, Towson University, April 11-12, 2008.

51. Plenary Speaker for **International Congress of Chinese Mathematician**, Hangzhou, China, Decemter 17-22, 2007.

52. Keynote Speaker for **12th IMA International Conference, Mathematics of Surfaces XII**, Sheffield, UK, September 4-6, 2007.

53. Invited Speaker for **New perspectives in Geometric Analysis**, Department of Mathematics of University of Toledo, May 9-11, 2006,

Conference Presentations

1. **Mapping Polar Factorization**, SIAM Conference on Imaging Science, Hongkong, May 12, 2014.

2. **Discrete Curvature Flow and Conformal Geometry**, 2009 SIAM/ACM joint conference on Geometry and Physical Modeling, San Francisco, October 5-8, 2009

3. **Surface Quasi-Conformal Mapping by Solving Beltrami Equations**, Mathematics of Surfaces XIII, York UK, September 8, 2009

4. **Discrete surface Ricci Flow and Teichmuüller Space Theory**, Research in Imaging Sciences – ONR PIs Meeting, Guillermo Sapiro and Tristan Nguyen, October 5-7, 2009

5. **Digital Geometry Acquisition and Processing**, Geometric Analysis:Present and Future, An International Conference to Celebrate the Birthday of Shing-Tung Yau, August 30, 2008

6. **Discrete Ricci Curvature Flow on Surfaces**, IEEE Shape Modeling International 2008

7. **Variation Method on Discrete Ricci Flow**, International Workshop on Combinatorial Image Processing 2008

8. **Computing Surface Hyperbolic Structure and Real Projective Structure**, ACM Solid and Physical Modeling 2006

9. **Holoimages**, ACM Solid and Physical Modeling 2006

10. **Computational Conformal Geometry theories and practices**, Microsoft Research 2006.

11. **Geometric Accuracy Analysis for Discrete Surface Approximation**, Geometric Modeling and Processing 2006

12. **Manifold T-Splines**, Geometric Modeling and Processing 2006

13. **Manifold Splines**, ACM Solid and Physical Modeling 2005

14. **Geometry Images**, SIGGRAPH 2002 Conference.

Public Talks

1. **Introduction to Conformal Geometry Modeling System (CGMS)**, Digital Technology Lab, Mori Seiki, Davis, California, October 9, 2009.

2. **Computational conformal geometric methods**, SUNY Binghamton, August 19, 2009.

3. **Computational conformal geometric methods**, 10th US National Congress on Computational Mechanics, July 16, 2009.

4. **Tutorial to Computational Conformal Geometry**, School of Computer Science and Technology, Sandong University, July 27, 2009.

5. **Canonical homotopy class representative using hyperbolic structure**, IEEE International Conference on Shape Modeling and Applications (SMI), Tsinghua University China, June 28, 2009.

6. **Computational Conformal Geometry**, CAD&CG Lab, Zhejiang University, China, July 6th,2009.

7. **Computing Teichmüller Shape Space**, Courant Institute, New York University, May 1st,2009.

8. **Computational Conformal Geometry, theory and applications**, Computer Science Department, Kent State University, April 10, 2009.

9. **Curvature Flows for Quasi-Conformal Mappings**, Computational Mathematics of Discrete Surfaces, Banff International Research Station, Canada, February 16, 2009.

10. **Discrete Curvature Flows and Their Applications**, Stony Brook University, February 6, 2009.

11. **Discrete Curvature Flows and Their Applications**, Joint Mathematics Meetings, Washington DC, January 5, 2009.

12. **Computational Conformal Geometry**, Computer Science Department, Wayne State University, Detroit Michigan, November 24, 2008.

13. **Ricci flow for Surface Representation**, AFOSR Workshop on Full-cue Surface Representation in Mid-Level Vision, Smith-Kettlewell Eye Research Institute, San Francisco, October 30, 2008.

14. **Ricci flow for Conformal Brain Mapping and Medical Imaging**, Dana & David Dornsife Cognitive Neuroscience Imaging Center at the University of Southern California, January 28, 2008.

15. **Conformal Geometric Methods for Brain Imaging**, Laborartory of Neuro Imaging, UCLA, January 28, 2008.

16. **Computing Conformal Structures using Discrete Ricci Flow and Holomorphic Forms**, Mathematics Department, Columbia University, January 31, 2008.

17. **Computational Conformal Geometry, Theories and Applications**, Mathematics Department, George Washington University, February 4, 2008.

18. **Discrete Curvature Flows for Manifold Splines**, 1st Workshop on Algebraic geometry and approximation theory, mathematics department, Towson University, April 12, 2008.

19. **Discrete Ricci Flow for Shape Analysis**, International Workshop on Combinatorial Image Processing, SUNY Bufflo, April 8, 2008.

20. **Variational Principles for Discrete Surfaces**, IEEE International Conference on Shape Modeling and Applications, SUNY Stony Brook, June 6, 2008.

21. **Discrete Ricci Flow for Computer Vision and Medical Imaging**, Computer Science Department, University of Delaware, May 2, 2008.

22. **Computational Conformal Geometry for Geometric Modeling**, School of Applied Mathematics, University of Texas at Austin, December 2007.

23. **Discrete Curvature Flow Method**, Courant Institute, New York University, April 2007.

24. **Affine Structure and Manifold Splines**, Mathematics Department, Drexell University, February, 2007.

25. **Circle Packing and Ricci Flow**, Mathematics Department, UC Irvine, February, 2007.

26. **Discrete Metric Design by Minimizing Ricci Energy**, Computer Science Department, California Institute of Technology, November 2006.

27. **Conformal Parameterization and Mesh Spline Conversion**, Solid Works, Boston, October 2006.

28. **Computational Conformal Geometry, theories and Applications**, Mathematics Department, Leheigh University, October, 2006.

29. **Global Surface Parameterizations**, Computer Science Department, University of Washington at St. Louis, September, 2006.

30. **Manifold Splines**, Mathematics Department, Brigham Young University, September, 2006.

31. **Computational Conformal Geometry**, Computer Science Department, Tsinghua University, July, 2006.

32. **Holoimages**, Microsoft Research Asia, July 2006.

33. **Computing Conformal Structures**, Computer Science Department, University of Delaware, 2006.

34. **Manifold Splines using conformal structure**, Mathematics Department, Drexel University, 2006.

35. Talks in Colloquiums at Princeton, UW, UCLA, USC, UCSB, UCSD, UFL etc., 2004-2005.

Selected Professional Activities

1. Chief Editor of Journal of Geometry, Imaging and Computation.

2. Scientific Committee member of the SIAM Conference on Imaging Science, Hongkong May 12-14, 2014.

3. Symposium organizer of Geometry, Imaging and Computing, SIAM Conference on Imaging Science, Hongkong, May 12, 2014.

4. International Program Committee member of the 13th International Conference on Computer-Aided Design and Computer Graphics (CAD/Graphics 2013), Hong Kong, November 16-18, 2013, co-located with SIGGRAPH Asia 2013 and SIGGRAPH VRCAI 2013.

5. Organizing Chair: International Conference on Imaging Science and Applied Mathematics, Tsinghua Sanya Mathematics Forum, Shanya, China, Dec 15-18, 2012

6. Organizing Committee: International Conference on Imaging Science and Applied Mathematics, A Conference dedicated to Professor Stanley Osher, Mathematics Science Center, Tsinghua University, Dec 15-18, 2012, Beijing

7. Committee: **S.-T. Yau High School Student Mathematics Contest**, December 19th-22th ,2012.

8. Committee: **S.-T. Yau College Student Mathematics Contest**, August 5th-6th ,2012.

9. Organizing Committee: **3D Geometry and Imaging International Conference**, July 19-21, 2012 in Kunming University of Science and Technology, Yunnan, China.

10. Organizer: **Numerical Ricci flow in Computer Science, Geometry and Physics**, July 14-16, University of British Columbia, (Pacific Institute of Mathematics) PIMS' Thematic Program on Applied Mathematics Perspectives.This is one of the official satellite workshops of the International Congress of Industrial and Applied Mathematics (ICIAM 2011). Co-organizers: Charles Doran, University of Alberta; Robert Gulliver, University of Minnesota ; Suneeta Vardarajan, IISER Pune.

11. Panelist: **Office of Naval Research (ONR) Computational Mechanics and Signatures Program**, April 25-27, 2011.

12. Panelist: **NSF CCF-FODAVA (Foundations of Data and Visual Analytics)** , May 16-17, 2011

13. Panelist: **NSF panel P121042-Computational Geometry**, Mar 13-14, 2012.

14. Panelist: **NSF CGV-Medium-14 (computational photography, computer graphics, visualization, and their applications)** , March 20-21, 2014

15. Reviewer: **IEEE Transactions on Pattern Analysis and Machine Intelligence**,

16. Reviewer: **IEEE International Conference on Computer Vision and Pattern Recognition**, CVPR12, June 18-20, 2012, Providence, Rhode Island, USA

17. Reviewer: Israel Science Foundation

18. Program Committee, **2012 Symposium on Solid and Physical Modeling, October 29-31, 2012 in Dijon, France**

19. International Program Committee, **2012 Pacific Graphics, Hongkong**

20. Program Committee, **2012 Symposium on Geometry Processing, 22-25 May in College Station, TX (SMI2012)**

21. Program Committee, **IEEE Visualization 2011 (Vis 2011)**

22. International Program Committee, **International Conference on Computer Vision (ICCV 2011)**

23. International Program Committee, **IASTED International Conference on Graphics and Virtual Reality (GRVR 2011)**

24. Session Chair **Workshop: Challenges and Opportunities in Virtual Colonoscopy and Abdominal Imaging, the 13th International Conference on Medical Image Computing and Computer Assisted Intervention, MICCAI 2010.**

25. Associate Editor, **Graphical Models**

26. Program Committee, **IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2013**

27. Program Committee, **IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2011**

28. Program Committee, **The 9th IEEE Conference on Automatic Face and Gesture Recognition 2011**

29. Program Committee, **The 6th International Symposium on Visual Computing (ISVC10)**

30. Technical Program Committee, **the 20th International Conference on Pattern Recognition (ICPR 2010)**

31. Program Committee, **Pacific Graphics (PG) 2010**

32. Program Committee, **Geometric Modeling and Processing (GMP) 2010**

33. Session Chair **Institute of Mathematics and Applications Mathematics of Surfaces XIII, September 7-9 2009.**

34. Program Chair **IEEE International Conference on Shape Modeling and Applications (SMI) 2008.**

35. Session Chair **ACM Solid and Physical Modeling (SPM) 2006.**

36. Organizing Committee Member **Computer Graphics International (CGI) 2005.**

37. Organizing Committee Member **Volumetric Graphics 2005.**

38. Session Chair **International Mesh Round Table 2004.**

39. International Program Committee, **IEEE Shape Modeling International (SMI) 2009**

40. International Program Committee, **IEEE Shape Modeling International (SMI) 2010**

41. Program Committee, **Video/Multimedia (SoCG) 2010**

42. Program Committee, **SIAM/ACM Joint Conference on Geometric and Physical Modeling (SPM) 2009**

43. Program Committee, **SIAM/ACM Joint Conference on Geometric and Physical Modeling (SPM) 2010**

44. Program Committee, **IMA Mathematics of Surfaces XIII conference 2009**

45. Program Committee, **CVPR Workshop on 3D Face Processing (3DFP) 2008**

46. Program Committee, **Pacific Graphics (PG) 2008**

47. Program Committee, **Symposium on Geometry Processing (SGP) 2008**

48. Program Committee, **Geometric Modeling and Processing (GMP) 2006,2008**

49. Program Committee, **ACM Symposium on Solid and Physical Modeling (SPM) 2008**

50. Program Committee, **ACM Symposium on Solid and Physical Modeling (SPM) 2009**

51. Program Committee, **The Tenth IASTED International Conference on Computer Graphics and Imaging, CGIM 2008**

52. Program Committee, **International Symposium on Visual Computing (ISVC) 2008**

53. Program Committee, **International Conference on Computer Vision (ICCV) 2007,2009**

54. Program Committee, **Pacific Graphics (PG) 2007**

55. Program Committee, **Pacific Graphics (PG) 2009**

56. Program Committee, **International Conference on CAD/Graphics 2007**

57. Program Committee, **International Conference on CAD/Graphics 2009**

58. Program Committee, **International Symposium on Visual Computing (ISVC)** 2007

59. Program Committee, **International Conference on Entertainment Computing (ICEC)** 2007,2008

60. Program Committee, **Computer Graphics International 2006**

61. Program Committee, **Geometric Modeling and Processing (GMP) 2006**

62. Program Committee, **IEEE Visualization (Vis) 2009**

63. Reviewer, **Computer Methods and Programs in Biomedicine**

64. Reviewer, **IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2010**

65. Reviewer, **Computers and Graphics, 2010**

66. Reviewer, **CAD, 2010**

67. Reviewer, **the Notices of the AMS, 2010**

68. Reviewer, **EuroGraphics, 2010**

69. Reviewer, **ICPR (International Conference on Pattern Recognition), 2010**

70. Reviewer, **SoCG, 2010**

71. Reviewer, **Computers in Biology and Medicine, Dec 30, 2009** A Mesh-Based Deformation Method for Neuroanatomical Structures Inspired in Diffusion Models

72. Reviewer, **Medical Image Analysis (MEDIA), May 15,2009** Algorithms to Improve the Isometry of Spherical Mappings of Brain Surface Meshes

73. Reviewer, **IEEE Signal Processing Letters (IEEE SPL), May 28,2009** A Scale-Space of Cortical Feature Maps

74. Reviewer, **Graphical Model, May 29,2009** New families of parametric polynomial minimal surfaces and their properties

75. Reviewer, **Computer and Graphics, May 15,2009** Quality Simplification of 3D Polygonal Model Using Quadric Error metric Through MAYA API

76. Reviewer, **IEEE Transaction on Visualization and Computer Graphics (TVCG)**

77. Reviewer, **IEEE Transaction on Visualization and Computer Graphics (TVCG), May 9** Texture Mapping via Optimal Mass Transport

78. Reviewer, **IEEE Transaction on Pattern Analysis and Machine Intelligence (PAMI)**

79. Reviewer, **International Journal of Computer Vision (IJCV)**

80. Reviewer, **ACM Transaction on Graphics (TOG)**

81. Reviewer, **ACM Transaction on Graphics (TOG), May 2009** Topology- and error-driven extension of scalar functions from surfaces to volumes

82. Reviewer, **IEEE Transaction on Medical Imaging (TMI)**

83. Reviewer, **IEEE Transaction on Biomedical Engineering (TBME)**

84. Reviewer, **IEEE Transactions on Automation Science and Engineering(TASE)**

85. Reviewer, **Visual Computer**

86. Reviewer, **Computer Aided Design (CAD)**

87. Reviewer, **Computer Aided Geometric Design (CAGD)**

88. Reviewer, **Computers and Mathematics with Applications (CAM)**

89. Reviewer, **Computer Methods in Applied Mechanics and Engineering (CMAME)**

90. Reviewer, **Graphical Models (GMOD)**

91. Reviewer, **The Computer Journal (COMPJ)**

92. Reviewer, **Computers and Mathematics with Applications (CAM)**

93. Reviewer, **Computer Methods in Applied Mechanics and Engineering (CMAME)**

94. Reviewer, **Communications in Information and Systems (CIS)**

95. Reviewer, **Journal of Computer Science and Technology (JCST)**

96. Reviewer, **International Journal of Biomedical Imaging (IJBI)**

97. Reviewer, **The Computer Journal (COMPJ)**

98. Reviewer, **Journal of Mathematical Imaging and Vision (JMIV)**

99. Panelist: **NSF Mathematics Science and Computer Science (MCS) panel of DMS and CCF**, April 8, 2009

100. Panelist: **NSF Numeric, Symbolic and Geometric Computation panel**, February 2006

101. Panelist: **NSF Computational Geometric panel**, February 2005

102. Panelist: **Research Grants Council**, Hongkong, 2006-2008

103. Panelist: **National Science Foundation**, China, 2006-2008

104. Reviewer: **SIGGRAPH (SIG) 2005-1008, EuroGraph (EG) 2007-2008, Pacific Graph (PG) 2006-2007, IEEE Visualization (Vis) 2007-2008, Solid and Physical Modeling (SPM) 2005-1008, Symposium on Geometry Processing (SGP) 2005-2008, International Symposium on Visual Computing (ISVC) 2007-2008, Computer Graphics International (CGI) 2005-2006, Geometric Modeling and Processing (GMP) 2006,2008, Computer Vision and Pattern Recognition (CVPR) 2006-2008, International Conference on Computer Vision (ICCV) 2007, Europe Conference on Computer Vision (ECCV) 2008, International Conference on Computer Graphics Theory and Application (GRAPP) 2007-2008**

105. Reviewer: **Computers in Biology and Medicine**

Members

1. SPIE

2. ACM SIGGRAPH

3. IEEE

Department and University Service

1. Member, Graduate Admission Committee of Computer Science Department, 2004-current.

2. Member, Qualify Committee of Computer Science Department, 2007-current.

3. Member, Library Committee of Computer Science Department, 2006-current.

4. Member, CEWIT Building Committee, 2008.

5. Coordinator, Graduate Orientation of Computer Science Department, 2007-current.

6. Member of Organizing Committee, Computer Graphics International, Stony Brook, 2005

7. Member of Organizing Committee, Volume Graphics, Stony Brook, 2005

8. Organizer, ACM Solid and Physical Modeling, Stony Brook, 2008

9. Organizer, IEEE Shape Modeling and Applications, Stony Brook, 2008

10. Advisor for Honors undergraduate students, 2006-current.

11. Instructor for ITS 102, Spring 2007.

12. Research Talks in CSE600, 2004, 2006, 2007, 2008

13. Graduate Ceremony: 2005-current

14. Host for visiting scholars, Emil Saucan, Technion, September 2008.

15. Organize the domestic Graduate Candidates visiting, Mar 19,2010.

16. Host faculty candidate Qian-Yi Zhou, March 13 - 17, April 4-6, 2014.

17. Host faculty candidate Xiaojun Bi, April 6-8, 2014.

18. Host visiting Scholar Emil Saucan, April 29-May 5, 2014.

   - Yong Li *Zhejiang Normal University*, 2013-2014
   - Jielin Zhang *Dalian Science and Technology University*, 2012-2013
   - Yaping Zhang *Zhejiang University*, 2009-2010
   - Xiaokang Yu *Shangdong University*, 2009-2011
   - Yu-Kun Lai *Tsinghua University*,2007-2008
   - Xin Pan *Dalian University of Technology*, 2007-2008
   - Yong-liang Yang *Tsinghua University*, 2008-2009
   - Wei Han *Zhejiang University*, 2008-2009
   - Luke Domanski *University of Western Sydney*, 2005-2006

Thesis Committee

   - Francesco Gallarotti, Ms 2005
     Thesis: CLAYSKETCH-3D Shape Sculptor Using 2D Freehand Sketches

- Xiaohu Guo, PhD 2005
  Thesis: Point-Based Graphics: A Modeling, Animation, and Simulation Paradigm

- Song Zhang, PhD 2005, Mechanical Engineering Department
  High-resolution, Real-time 3-D Shape Measurement

- Yang Wang, PhD 2006
  Thesis:Facial Modeling on High Resolution Geometry and Appearance Data

- Ying He, PhD 2006
  Thesis: Manifold Splines

- Ye Zhao, PhD 2006
  Thesis: Modeling Natural Phenomena with Lattice Boltzmann Method

- Fuxiang Yu, PhD 2007
  Thesis: Computational complexity of real and complex functions defined on a two-dimensional domain

- Haodu Hu, PhD 2006
  Thesis: Cache Oblivious Data Structures for Massive Data Sets

- Lujin Wang, PhD 2007
  Thesis: Feature-Driven Illustrative Visualization and Graphics

- Hong Wei, PhD 2007
  Thesis: Computer Aided Diagnosis for Virtual Endoscopy

- Xin Li, PhD 2008
  Thesis: Shape Mapping and Its Applications

- Kexiang Wang, 2008
  A Variational Framework of Multivariate Splines and Its Applications

- Lei Zhang, Ms 2008
  Thesis: Analysis and Visualization of Facial Expression Subtlety Using Dynamic High Resolution Data

- Shengying Li, PhD 2008
  Thesis: Refraction in Graphics and Medical Imaging

- Zhe Fan, PhD 2008
  Thesis: Flow Simulation and Visualization on GPU Clusters

- Guangyu, Zou, PhD 2008
  Thesis: Multiscale Geometry Constrained Shape Diffeomorphism

- Sen Wang, PhD 2008
  Thesis: Shape Registration and Analysis Framework for Computer Vision and Graphics

- Wei Zhang, PhD 2008
  Thesis:Feature Representation for Generic Object Detection and Recognition: Computer Vision and Human Vision

- Jihun Yu, PhD Courant Institute, NYU, August 10th, 2009
  Thesis Proposal: Adaptive Simulation of Particle Based Fluid

- Xue Tu, PhD in Electrical Engineering, July 20th, 2009
  Thesis:Image based 3D Sensing and Modeling Technology for High-end Digital Cameras

- Hao Huang, Ms 2010, May 3rd
  Heterogeneous Objects Scalar Modeling and Visualization Using Trivariate T-splines

- Xiaotian Yin, PhD 2010, August 10th
  Discrete Metric Designs and Discrete Tangent Bundles: from Surfaces to 3-Manifolds

- Long Lin, PhD 2011, August 25th, Courant Institute, New York University
  Adaptive Isotopic Approximation of Nonsingular Curves and Surfaces

- Xiaohua Huang, MS 2011, December 13rd
  Bag of Feature Graphs: A New Method for Non-rigid 3D Shape Retrieval

- Wenxin Guo, PhD 2011, December 8th, Mathematics Department
  Sasakian structures from two perspective

- Shan Chu, PhD 2011, December 12th, Electronic Engineering Department
  Cross-layer Modeling and Algorithm Design for MIMO Ad hoc Networks

- Tingbo Hou, PhD Prelim 2011, December 13rd
  Dynamic Shape Analysis and Synthesis Based on Heat Diffusion

- Joseph Marino, PhD Prelim 2011, December 13rd
  Improving Cancer Detection Through Visualization

- Jun Zeng, PhD Defense, 2012, June 22nd
  Coupling Techniques for Dense Surface Registration: A Continuous-Discrete Approach

- Yinghua Li, PhD defense, 2012, July 25th
  Algorithms in Computational Conformal Geometry

- Duo Wang, PhD Defense 2012, August 21st
  Numerical Differential Geometry and Its Applications

- Lei Wang, Prelim 2012, September 25th
  Visual Perception Enhancement in Volume Rendering

- Joseph Marino, PhD defense, 2012, November 14
  Improving Cancer Detection Through Visualization

- Ziyi Zeng, PhD defense, 2012, December 4
  Efficient Reconstruction and Visualization of CT Data

- Xiaomeng Ban, PhD defense, 2012, December 5
  Exploring Advanced Communication Primitives Using Greedy Routing in Sensor Networks

- Bo Li, PhD defense, 2012, December 6
  A Spline-based Volumetric Data Modeling Framework and Its Applications

- Ruirui Jiang, PhD defense, 2013, April 26
  Applications of Computational Conformal Geometry

- Lei Wang, PhD defense, 2013, May 22
  Perception based Volume Rendering for Shape Enhancement

- Le Hou, Master Thesis Defense, 2014, May 1
  Rat's Orofacial Activity Recognition and Its Applications

- Min Zhang, PhD Thesis Defense, 2014, May 27
  Ricci Flow and Its Applications

- Xiaojie Wang, PhD Thesis Defense, 2014, July 1
  Uniqueness of Ricci Flow Solution on Non-compact Manifolds and Integral Scalar Curvature Bound

Thesis Examiner

- Luke Domanski, University of Western Sydney, *Thesis: Creation and Spatial Partitioning of Mip-mappable Geometry Images*

- Ka Chun Lam, Chinese University of Hong Kong, 2013, *Thesis: Medical Imaging and Computer Graphics Using Quasi-Conformal Teichmüller Theory*

- Chengfeng, Wen, Chinese University of Hong Kong, 2013, *Thesis: Geometric Processing Using Computational Riemannian Geometry*

RPE Committee

- Jin Zhou, 2005
  Title: GPU based Graphics

- Yunfan Bao, 2005
  Title: Surface Parameterizations

- Hongyu Wang, 2006
  Title: Manifold Splines

- Xin Li, 2005
  Title: Parameterization based Shape Comparison

- Miao Jin, 2005
  Title: Computational Conformal Geometry

- Alex Panagopoulos , 2007
  Title: Surface Reflectance Estimation from a Single or Multiple Views

- Xiaotian Yin, 2007
  Title: Discrete Curvature Flow

- Lei Zhang, 2007
  Automatic Spatial-Temporal Analysis of Facial Expression

- Joe Marino, 2007
  Virtual Colonoscopy

- Kaloian Petkov, 2007
  Lattice-based Simulations and Their Applications on Graphics Hardware

- Yun Zeng, May 13, 2009
  A Survey on Geometric Surface Mapping and Its Applications in Computer Vision

- Tingbo Hou, May 13, 2009
  A Survey on Model Representation, Registration and Completion

- Bo Li, May 18, 2009
  A Survey on Volumetric Modeling and Analysis

- Ziyi Zeng, September 1, 2009
  Imaging across the Electromagnetic Spectrum: A Survey

- Ruirui Jiang, September 14, 2009
  Conformal Geometry

- Lei Wang, Jan 29, 2010
  Medical Image Registration in CT and MR Images

- Xin Zhao, Jan 22, 2010
  Segmentation and Computer Aided Detection of MR Prostate Images

- Lei Wang, Jan 29, 2010
  Medical Image Registration of CT and MRI data

- Krishna Chaitanya Gurijala, February 5th, 2010
  Detection and Representation of 3D Geometric Features in Geometric Scale-Space

- Siming Li, September 8th, 2011
  A Survey on Triangulation Schemes for Moving Points in the Plane and their Applications

- Rui Shi, September 8th, 2011
  Computational Conformal Geometry and it's Applications in Medical Image, Graphics and Wireless Sensor Network

- Min Zhang, September 8th, 2011
  A Survey on Computational Conformal Geometry

- Yang Zhao, September 12nd, 2011
  A Survey On Surface Mapping Methods and Its Application In Medical Imaging

- Ziyi Zheng, April 18th, 2012
  Efficient Reconstruction and Visualization of CT Data (Prelim)

- Xiaomeng Ban, April 26th, 2012
  Exploring Advanced Communication Primitives Using Greedy Routing in Sensor Networks and Other Complex Networks (Prelim)

- Dengpan Zhou, May 10th, 2012
  Distributed Algorithms for Online Coordination in Wireless Sensor Networks (PhD Defense)

- Phanindra Bhagavatula, May 10th, 2012
  Variational Delaunay Triangulation (Master Defense)

- Zhengyu Su, September 5th, 2012
  Volumetric Parameterization by Computational Conformal Geometry (RPE)

- Saad Nadeem, September 5th, 2012
  Augmented Colonoscopy (RPE)

- Hao Peng, February 6th, 2013
  Colonoscopy Biomedical Metrics (RPE)

- Kaloian Petkov, March 8th, 2013
  Lattice-Based Immersive Visualization (Prelim)

- Chien-Chun Ni, August 6th, 2013
  Capacitated Wireless Base Station Allocation in Mobile Networks by Optimal Transportation Theory (Prelim)

- Ming Ma, May 2nd, 2014
  Discrete Surface Ricci Flow and Its Applications (RPE)

- Koosha Mirhosseini, May 22nd, 2014
  Visualization on Large High Resolution Displays(RPE)

- Jiaxin Ding, July 8th, 2014
  Understanding Information Dissemination Characteristics on Vehicle-to-Vehicle Networks (RPE)

Advised Students

PhD Alumni

1. Min Zhang, PhD 2014
   Ricci Flow and Its Applications

2. Mayank Goswami, PhD 2013
   Computing Teichmüller Maps and Applications of Conformal Geometry to Sensor Networks
   Max Planck Institute

3. Ruirui Jiang, PhD 2013
   Perception based Volume Rendering for Shape Enhancement
   Software engineer, Google Inc.

4. Yinghua Li, PhD 2013
   Generalized Delaunay Refinement Algorithms on the Hyperbolic Plane
   Assistant Professor, Huanan Science and Technology University

5. Yun Zeng, PhD 2012
   Conformal Geometry and Markov Random Field Method for Non-rigid Surface Tracking
   Postdoc Researcher, Harvard University

6. Wei Zeng, PhD 2009
   Computational Conformal Geometry for Shape Analysis
   Assistant Professor, Computer Science Department, Florida International University

7. Xiaotian Yin, PhD 2010
   Discrete Metric Designs and Discrete Tangent Bundles: from Surfaces to 3-Manifolds
   Postdoc Researcher, Harvard University

8. Guangyu Zou (with Jing Hua in Wayne State University), PhD (Wayne State University)
   Graduation: December 30, 2008
   Multiscale Geometry Constrained Shape Diffeomorphism
   Researcher, General Motor

9. Yongliang Yang, PhD (Tsinghua University) 2009 (with Shimin Hu in Tsinghua University)
   Thesis: Inverse Curvature Map
   Senior researcher, King Abdullah University of Science and Technology (KAUST)

10. Miao Jin, PhD 2008
    Thesis:General Surface Geometric Structures and Their Applications
    Assistant professor in Computer Science Department, University of Louisiana at Lafayette.

11. Xin Li (with H. Qin), PhD 2008
    Thesis:Shape Matching and its Applications
    Assistant professor in Computer Science Department, Louisiana State University.

12. Wei Zeng (with H. Shum), PhD 2008
    Thesis:Computational Conformal Geometry Based Shape Analysis
    Postdoc Researcher, Harvard University

13. Junho Kim, Postdoc Researcher 2008
    Assistant professor in Computer Science Department, Dong-Eui University, Korea.

14. Ying He (with H. Qin), PhD 2006
    Thesis: Manifold Splines
    Assistant professor in Computer Science Department, Nanyang Technological University.

15. Yang Wang (with D. Samaras), PhD 2006
    Thesis:Facial Modeling on High Resolution Geometry and Appearance Data
    Research Scientist, Siemens of Corporate Research.

16. Alexandre Gouaillard (with R. Prost, National Institute of Applied Sciences, France), PhD (NIAS, France) 2005
    Thesis: Wavelet-Based Bi-Multiresolution Framework For Active Contour Models
    Research Scientist, Harvard Medical School

External Thesis Examiner

1. Ka-Chun Lam, Mathematics Department, *Surface Registration Using Quasi-conformal Teichmüller Theory and Its Application to Texture Mapping*, Chinese University of Hong Kong, August, 2013

2. Chengfeng Wen, Mathematics Department, *Geometric Processing Using Computational Riemannian Geometry*, Chinese University of Hong Kong, August, 2013

Current PhD Students

1. Min Zhang, PhD Expected Graduation: 2013
   Conformal Geometry for Medical imaging

2. Rui Shi, PhD Expected Graduation: 2015
   Surface Registration and Tracking

3. Zhengyu Su, PhD Expected Graduation: 2015
   Optimal Mass Transportation

4. Yu-Yao Lin, PhD Expected Graduation: 2017
   Geometric Approximation Theory

5. Tian-Tian Guo, PhD Expected Graduation: 2018
   Discrete Riemannian Geometry

6. Junwei Zhang, PhD Expected Graduation: 2018
   Computational Conformal Geometry

MS Alumni

1. Duo Xu, MS 2013

2. Xin Xu, MS 2013

3. Lei Fan, MS 2013
   Amazon

4. Yueying Cui, MS 2013

5. Phanindra Bhagavatula, MS 2012, Mathworks

6. Ibtisam Ul Haque, MS 2012

7. Hao Peng, MS 2012

8. Peng Chen, MS 2011

9. Min Zhang, MS 2010

10. Peng Chen, MS 2009

11. Yang Zhao, MS 2010

12. Dapeng Ding, MS 2006
    Shape Analysis, Medical Imaging

13. Yunfan Bao (with H.Qin), MS 2006
    Shape Matching and Registration
    Computational Conformal Geometry Renaissance Inc.

14. Huayi Zeng, MS 2006
    Computational Conformal Geometry

Undergradute Alumni

1. Xixi Huang, BS 2014

2. Nam Wook Kim, BS 2008
   Digital geometric processing, Standford University.

3. Johnathan Huang, BS 2007
   Efficient Rendering, Pixar Inc.

4. Joe Marino, BS 2006
   Real time Rendering,Stony Brook University.