MIAO JIN

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University of Louisiana at Lafayette
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RESEARCH INTERESTS

My research interests lie at the boundary of geometry and broad engineering fields including Computer Vision, Computer Graphics, Mobile and Wireless Networks, Machine Learning, and Medical Imaging.

EDUCATION

2008 Ph.D. in Computer Science, State University of New York at Stony Brook
Thesis title: "General Surface Geometric Structures and Their Applications"
Advisor: Dr. Xianfeng David Gu

2006 M.S. in Computer Science, State University of New York at Stony Brook

2000 B.S. in Computer Science at Beijing University of Posts and Telecommunication

ACADEMIC APPOINTMENTS

2014-present Associate Professor
The Center for Advanced Computer Studies (CACS),
University of Louisiana at Lafayette

2008-2014 Assistant Professor
The Center for Advanced Computer Studies (CACS),
University of Louisiana at Lafayette

2004-2008 Research Assistant
Computer Science Department,
State University of New York at Stony Brook

2003-2004 Teaching Assistant

Department of Computer and Information Science and Engineering,
University of Florida

Summer 2005 Research Intern
Geometric Informatics, Somerville, MA

Summer 2004 Research Intern
Geometric Informatics, Somerville, MA

HONORS and AWARDS

2016 Lockheed Martin Corporation/BoRSF Professorship
Department of Computer Science, University of Louisiana at Lafayette

2013 Jack & Gladys Theall/BORSF Professorship
College of Science, University of Louisiana at Lafayette

2011 National Science Foundation (NSF) CAREER Award

2010 Cover Feature: International Society for Computer Graphics and Visualization, IEEE Transactions on Visualization and Computer Graphics, Vol. 16, No. 1

2007 Best Paper Award from the 10th International Conference on Computer-Aided Design and Computer Graphics

2000 Excellent Undergraduate Thesis Prize
Beijing Univ. of Posts & Telecommunications

2000 Excellent Undergraduate Student

Beijing University of Posts & Telecommunications (the top 5 out of 210 students)

BOOKS

1. M. Jin, X. Gu, Y. He, and Y. Wang, "Conformal Geometry - Computational Algorithms and Engineering Applications", *Publisher: Springer,* 2018. DOI: 10.1007/978-3-319-75332-4

JOURNAL PUBLICATIONS

2. M. Jin, and H. Wu, "Localization in 3D Surface Wireless Sensor Networks", *Encyclopedia of Wireless Networks,* to appear in 2019.
3. B. Ban, H. Wu, and M. Jin, "Resilient Routing for Wireless Sensor Networks on High Genus Surfaces", *IEEE Transactions on Mobile Computing (TOM),* under minor revision, 2019. Impact factor of 3.822
4. X. Li, and M. Jin, "A General Framework for Charger Scheduling Optimization Problems", *IEEE Transactions on Vehicular Technology (TVT),* under review, 2019. Impact factor of 5.339
5. X. Li, B. Ban, and M. Jin, "Localization of Networks on 3D Terrain Surfaces", *IEEE Transactions on Mobile Computing (TOM),* under review, 2019. Impact factor of 3.822
6. B. Ban, X. Li, and M. Jin, "Resilient Greedy Routing on GPS-free Surface Sensor Networks", *International Journal of Distributed Sensor Networks (IJDSN),* under review, 2019. Impact factor of 1.787
7. R. Hada, H. Wu, and M. Jin, "Scalable Minimum-Cost Balanced Partitioning of Large-Scale Social Networks: Online and Offline Solutions", *IEEE Transactions on Parallel & Distributed Systems (TPDS)*, Vol. 29, No. 7, pp.1636 – 1649, 2018. Impact factor of 3.971
8. M. Jin, S. Xia, H. Wu, and X. Gu, "Scalable and Fully Distributed Localization in Large-Scale Sensor Networks", *Axioms Special Issue: Discrete Geometry and its Applications,* Vol. 6, No. 2, pp. 1 – 15, 2017.
9. H. Zhou, H. Wu, S. Xia, and M. Jin, "Localized and Precise Boundary Detection in 3D Wireless Sensor Networks", *IEEE/ACM Transactions on Networking (TON),* Vol. 23, No. 6, pp. 1742 - 1754, 2015. Impact factor of 3.11
10. Y. Yang, M. Jin, Y. Zhao, and H. Wu, "Distributed Information Storage and Retrieval in 3D Sensor Networks with General Topologies", *IEEE/ACM Transactions on Networking (TON),* Vol. 23, No. 4, pp. 1149-1162, 2015. Impact factor of 3.11
11. Z. Zhong, L. Shuai, M. Jin, and X.-H. Guo, "Anisotropic Surface Meshing with Conformal Embedding", *Graphical Models,* Vol. 76, No. 5, pp. 468-483, 2014. Impact factor of 3.019

12. S. Xia, H. Wu, and M. Jin, “GPS-Free Greedy Routing with Delivery Guarantee and Low Stretch Factor on 2D and 3D Surfaces”, *IEEE Internet of Things Journal (IoT-J),* Vol. 1, No. 3, pp. 233-242, 2014.
13. Xia, X. Yin, H. Wu, M. Jin, and X. Gu, “Deterministic Greedy Routing with Guaranteed Delivery in 3D Wireless Sensor Networks”, *Axioms Special Issue: Discrete Differential Geometry and its Applications to Imaging and Graphics*, Vol. 3, No. 2, pp. 177-201, 2014.
14. M. Jin, N. Ding, Y. Yang, “Computing Shortest Homotopic Cycles on Polyhedral Surfaces with Hyperbolic Uniformization Metric”, *Computer-Aided Design (CAD)*, Vol. 45, No. 1, pp. 113-123, 2013. Impact factor of 2.947
15. L. Shuai, X.-H. Guo, M. Jin, “GPU-Based Computation of Discrete Periodic Centroidal Voronoi Tessellation in Hyperbolic Space*”, Computer-Aided Design (CAD),* (Special Issue of ACM SPM’12), Vol. 45, No. 2, pp. 463-472, 2013. Impact factor of 2.947
16. G. Rong, M. Jin, X.-H. Guo, L. Shuai, “Centroidal Voronoi Tessellation in Universal Covering Space of Manifold Surfaces”, *Computer-Aided Geometric Design (CAGD),* Vol. 28, No. 8, pp. 475-496, 2011. Impact factor of 1.522
17. Y. Lai, M. Jin, X. Xie, Y. He, J. Palacios, E. Zhang, S. Hu, X. Gu, “Metric-Driven RoSy Fields Design and Remeshing”, **Cover feature** of *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Vol. 16, No. 1, pp. 95-108, 2010. Impact factor of 3.078
18. M. Jin, W. Zeng, F. Luo, X. Gu, “Computing Teichmuller Shape Space”, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Vol. 15, No. 3, pp. 504-517, 2009. Impact factor of 3.078
19. M. Jin, W. Zeng, N. Ding, X. Gu, “Computing Fenchel-Nielsen Coordinates in Teichmüller Shape Space”, *Communications in Information and Systems (CIS),* Vol. 9, No. 2, pp. 213-234, 2009.
20. M. Jin, J. Kim, F. Luo, X. Gu, “Discrete Surface Ricci Flow”, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Vol. 14, No. 5, pp. 1030-1043, 2008. Impact factor of 3.078

21. X. Yin, M. Jin, F. Luo, X. Gu, "Computing Constant-Curvature Metrics for Hyperbolic 3-Manifolds with Boundaries Using Truncated Tetrahedral Meshes", *International Journal of Shape Modeling*, Vol. 14, Mo. 2, pp. 169-188, 2008.
22. X. Li, Y. Bao, X. Guo, M. Jin, X. Gu, and H. Qin, "Globally Optimal Surface Mapping for Surfaces with Arbitrary Topology", *IEEE Transaction on Visualization and Computer Graphics (TVCG)*, Vol. 14, No. 4, pp. 805-819, 2008. Impact factor of 3.078
23. X. Gu, Y. He, M. Jin, F. Luo, H. Qin, "Manifold Splines with Single Extraordinary Point", *Computer-Aided Design (CAD)*, Vol. 40, No. 6, pp. 676-690, 2008. Impact factor of 2.947
24. M. Jin, F. Luo, and X. Gu, "Computing General Geometric Structures on Surfaces Using Ricci Flow", *Computer-Aided Design (CAD)*, Vol. 39, No. 8, pp. 663-675, 2007. Impact factor of 2.947
25. S.Wang, Y.Wang, M. Jin, X. Gu, and D. Samaras, "3D Surface Matching and Recognition Using Conformal Geometry", *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, Vol. 29, No. 7, pp.1209-1220, 2007. Impact factor of 9.455
26. M. Jin, Y. Wang, X. Gu, and S.-T. Yau, "Optimal Global Conformal Surface Parameterization for Visualization", *Communications in Information and Systems (CIS),* Vol. 4, No. 2, pp. 117-134, 2005.
27. X. Yin, M. Jin, and X. Gu, "Computing shortest cycles using universal covering space", *The Visual Computer*, Vol. 23, No. 12, pp. 999-1004, 2007.
28. J. Dai, W. Luo, M. Jin, W. Zeng, Y. He, S.-T. Yau, and X. Gu, "Geometric accuracy analysis for discrete surface approximation", *Computer-Aided Geometric Design (CAGD)*, Vol. 24, No. 6, pp.323-338, 2007. Impact factor of 1.522

CONFERENCE PUBLICATIONS

29. X. Li, and M. Jin, "Charger Scheduling Optimization Framework", *IEEE International Symposium on Network Computing and Applications (NCA'19),* 2019.
30. R. Hada, M. Jin, Y. Xie, and L. Le, "Link Prediction Based Minimum Cost and Balanced Partition of Large Online Social Networks", *IEEE International Symposium on Network Computing and Applications (NCA'19),* 2019.

31. B. Ban, M. Jin and H. Wu, "Optimal Marching of Autonomous Networked Robots", *Proc. of the 36th International Conference on Distributed Computing Systems (ICDCS'16),* pp. 149-158, 2016. (Acceptance ratio: 17.6%).
32. S. Katragadda, M. Jin, and V. Raghavan, "An Unsupervised Approach to Identify Location based on the Content of User's Tweet History", *International Conference on Active Media Technology (AMT'2014),* pp. 311-323, 2014.
33. S. Xia, H. Wu, and M. Jin, "Trace-Routing in 3D Wireless Sensor Networks: A Deterministic Approach with Constant Overhead", *Proc. of the 15th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'14),* pp. 357-366, 2014. (Acceptance ratio: 18.9%).
34. Y. Yang, M. Jin, and H. Wu, "3D Surface Localization with Terrain Model", *Proc. of the 33rd Annual IEEE Conference on Computer Communications (INFOCOM'14),* pp. 46-54, 2014. (Acceptance ratio: 19.4%).
35. Z. Zhong, L. Shuai, M. Jin, and X.-H. Guo, "Anisotropic Surface Meshing with Conformal Embedding", *Geometric Modeling and Processing (GMP),* 2014.
36. Y. Zhao, H. Wu, M. Jin, Y. Yang, H. Zhou, S. Xia, "Cut-and-Sew: A Distributed Autonomous Localization Algorithm for 3D Surface Wireless Sensor Networks", *Proc. of the 14th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'13),* pp. 69-78, 2013. (Acceptance ratio: 10%)
37. H. Zhou, M. Jin, H. Wu, "A Distributed Delaunay Triangulation Algorithm Based on Centroidal Voronoi Tessellation for Wireless Sensor Networks", *Proc. of the 14th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'13),* pp. 59-68, 2013. (Acceptance ratio: 10%)
38. Y. Yang, M. Jin, Y. Zhao, and H. Wu, "Cut Graph Based Information Storage and Retrieval in 3D Sensor Networks with General Topology", *Proc. of the 32nd Annual IEEE Conference on Computer Communications (INFOCOM'13), mini-conference*, pp. 465-469, 2013. (Acceptance ratio: 25%)
39. S. Xia, N. Ding, M. Jin, H. Wu, and Y. Yang, "Medial Axis Construction and Applications in 3D Wireless Sensor Networks", *Proc. of the 32nd Annual IEEE Conference on Computer Communications (INFOCOM'13), mini-conference*, pp. 305-309, 2013. (Acceptance ratio: 25%)

40. L. Shuai, X.-H. Guo, M. Jin, "GPU-Based Computation of Discrete Periodic Centroidal Voronoi Tessellation in Hyperbolic Space*", Proc. of ACM Symposium of Solid & Physical Modeling (SPM'12),* 2012. (Oral)
41. S. Xia, M. Jin, H. Wu, H. Zhou, "Bubble Routing: A Scalable Algorithm with Guaranteed Delivery in 3D Sensor Networks", *Proc. of the 9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON'12),* pp. 245-253, 2012.
42. M. Jin, G. Rong, H. Wu, L. Shuai, X-H. Guo, "Optimal Surface Deployment Problem in Wireless Sensor Networks", *Proc. of the 31st Annual IEEE Conference on Computer Communications (INFOCOM'12),* pp. 2345-2353, 2012. (Acceptance ratio: 18%)
43. H. Zhou, H. Wu, M. Jin, "A Robust Boundary Detection Algorithm Based on Connectivity Only for 3D Wireless Sensor Networks*", Proc. of the 31st Annual IEEE Conference on Computer Communications (INFOCOM'12)*, pp. 1602-1610, 2012. (Acceptance ratio: 18%)
44. Y. Zhao, H. Wu, M. Jin, S. Xia, "Localization in 3D Surface Sensor Networks: Challenges and Solutions", *Proc. of the 31st Annual IEEE Conference on Computer Communications (INFOCOM'12)*, pp. 55-63, 2012. (Acceptance ratio: 18%)
45. S. Xia, X. Yin, H. Wu, M. Jin, X. Gu, "Deterministic Greedy Routing with Guaranteed Delivery in 3D Wireless Sensor Networks*", Proc. of the 12th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'11),* pp. 1-10, 2011. (Acceptance ratio: 19.7%)
46. H. Zhou, N. Ding, M. Jin, S. Xia, H. Wu, "Distributed Algorithms for Bottleneck Identification and Segmentation in 3D Wireless Sensor Networks*", Proc. of the 8th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON'11),* pp. 494-502, 2011. (Acceptance ratio: 27%)
47. M. Jin, S. Xia, H. Wu, X. Gu, "Scalable and Fully Distributed Localization with Mere Connectivity", *Proc. of the 30th Annual IEEE Conference on Computer Communications (INFOCOM'11),* pp. 3164-3172, 2011. (Acceptance ratio: 16%)
48. H. Zhou, H. Wu, S. Xia, M. Jin, N. Ding, "A Distributed Triangulation Algorithm for Wireless Sensor Networks on 2D and 3D Surface*", Proc. of the 30th Annual IEEE*

Conference on Computer Communications (INFOCOM'11), pp. 1053-1061, 2011. (Acceptance ratio: 16%)

49. H. Zhou, S. Xia, M. Jin and H. Wu, "Localized Algorithm for Precise Boundary Detection in 3D Wireless Networks*", Proc. of the 30th International Conference on Distributed Computing Systems (ICDCS'10),* pp. 744-753, 2010. (Acceptance ratio: 14.4%)
50. G. Rong, M. Jin, X.-H. Guo, "Hyperbolic Centroidal Voronoi Tessellation*", Proc. of ACM Symposium of Solid & Physical Modeling (SPM'10),* pp. 117-126, 2010. (Oral)
51. M. Jin, W. Zeng, N. Ding, X. Gu, "Computing Fenchel-Nielsen Coordinates in Teichmüller Shape Space*", Proc. of IEEE International Conference on Shape Modeling and Applications (SMI'09),* pp. 193-200, 2009. (Oral)
52. W. Zeng, M. Jin, F. Luo, X. Gu, "Canonical Homotopy Class Representative Using Hyperbolic Structure*", Proc. of IEEE International Conference on Shape Modeling and Applications (SMI'09),* pp. 171-178, 2009. (Oral)
53. J. Kim, M. Jin, Q. Zhou, F. Luo, X. Gu, "Computing Fundamental Group of General 3-Manifold*", Proc. of International Symposium on Visual Computing (ISVC'08),* pp. 965-974, 2008. (Oral)
54. X. Yin, M. Jin, F. Luo, X. Gu, "Discrete Curvature Flow for Hyperbolic 3-Manifold with Complete Geodesic Boundaries", *Proc. of International Symposium on Visual Computing (ISVC'08),* pp. 720-730, 2008. (Oral)
55. H.Wang, M. Jin, Y. He, X. Gu, H. Qin, "User-controllable Polycube Map for Manifold Spline Construction", *Proc. of ACM Symposium of Solid & Physical Modeling (SPM'08),* pp. 397-404, 2008.
56. M. Jin, J. Kim, F. Luo, X. Gu, "Variational Method on Discrete Ricci Flow", *International Workshop on Combinatorial Image Analysis 2008 (IWCIA)*, 2008.
57. X. Gu, M. Jin, J. Kim, S.-T. Yau, "Computational Conformal Geometry Applied in Engineering Fields", *ICCM 2007.* **(Invited talk)**
58. M. Jin, J. Kim, F. Luo, X. Gu, "Discrete Surface Ricci Flow: Theory and Applications", *Mathematics of Surfaces XII*, Vol. 4647, pp. 209-232, 2007. (Oral)

59. X. Yin, M. Jin, and X. Gu, "Computing shortest cycles using universal covering space", *10th International Conference on Computer-Aided Design and Computer Graphics (CAD/Graphics 2007)*, pp. 999-1004, 2007. **(The Best Paper Award)**
60. X. Gu, Y. He, M. Jin, F. Luo, H. Qin, "Manifold splines with single extraordinary point", *Proc. of ACM Symposium of Solid & Physical Modeling (SPM'07),* pp. 61-72, 2007. (Oral)
61. M. Jin, F. Luo, X. Gu, "Computing Geodesic Spectra of Surfaces", *Proc. of ACM Symposium of Solid & Physical Modeling (SPM'07)*, pp. 387-393, 2007.
62. M. Jin, F. Luo, X. Gu, "Computing Surface Hyperbolic Structure and Real Projective", *Proc. of ACM Symposium of Solid & Physical Modeling (SPM'06),* pp. 105-116, 2006. (Oral)
63. Sen Wang, Yang Wang, M. Jin, X. Gu, D. Samaras, "3D Surface Matching and Recognition Using Conformal Geometry", *Proc. of IEEE Computer Vision Pattern Recognition (CVPR'06),* pp. 2453-2460, 2006.
64. W. Hong, X. Gu, F. Qiu, M. Jin, A. Kaufman, "Conformal Virtual Colon Flattening", *Proc. of ACM Symposium of Solid & Physical Modeling (SPM'06),* pp. 85-93, 2006. (Oral)
65. C. Carner, M. Jin, X. Gu, H. Qin, "Topology-driven Surface Mappings with Robust Feature Alignment", *Proc. of IEEE Visualization (Vis'05)*, pp. 543-550, 2005. (Oral)
66. Y. He, M. Jin, X. Gu, H. Qin, "A C1 Globally Interpolatory Spline of Arbitrary Topology", *Lecture Notes in Computer Science*, Vol. 3752, pp. 295-306, 2005.
67. M. Jin, Y. Wang, S.-T. Yau, X. Gu, "Optimal Global Conformal Surface Parameterization", *Proc. of IEEE Visualization (Vis'04)*, pp. 267-274, 2004. (Oral)

CHAPTER IN BOOK

68. X. Yin, M. Jin, F.Luo, and X.Gu, "Discrete Curvature Flow for Surfaces and 3-Manifolds", *Emerging Trends in Visual Computing Series: Lecture Notes on Computer Science*, Publisher: Springer-Verlag, 2009.

OTHER PUBLICATIONS

69. M. Jin, “General Surface Geometric Structures and Their Applications”, Ph.D. Thesis, Stony Brook University, 2008.

RESEARCH GRANTS

NSF GRANTS UNDER REVIEW

- **RII Track-1: Louisiana Materials Design Alliance (LAMDA)**

  Principal Investigator: Miao Jin

  Co-Investigators: Henry Chu, Xiali Hei, Ahmed Khattab, Xiao-DongZhou, Jonathan Raush

  Funding Agency: US National Science Foundation EPSCoR

  Amount of Grant: $2,670,985

  Time Period: 08/01/2020-07/31/2025

NSF GRANTS FUNDED

- **NeTS: Small: Distributed In-network Data Storage and Retrieval in 3D Wireless Sensor Networks**

  Principal Investigator: Miao Jin

  Co-Investigators: Hongyi Wu

  Funding Agency: US National Science Foundation (CNS-1320931)

  Amount of Grant: $372,513

  Time Period: 10/01/2013 – 09/30/2019

- **CAREER: Theorem, Algorithm, and Applications of Computational Quasiconformal Geometry**.

  Principal Investigator: Miao Jin

  Co-Investigators: none

  Funding Agency: US National Science Foundation (CCF-1054996)

  Amount of Grant: $419,779

  Time Period: 05/01/2011 – 09/30/2017

- **NeTS: Small: Scalable Routing in 3D Wireless Sensor Networks**

  Principal Investigator: Hongyi Wu

  Co-Investigators: Miao Jin

  Funding Agency: US National Science Foundation (CNS-1018306)

  Amount of Grant: $425,000

  Time Period: 08/01/2010 – 07/31/2016

OTHER FUNDED GRANTS

- **RCS: Geometric Structures and Their Applications**

  Principal Investigator: Miao Jin

  Co-Investigators: none

  Funding Agency: Louisiana Board of Regents Sponsored Programs (RCS-3737)

  Amount of Grant: $112,230

  Time Period: 06/01/2009 – 05/31/2013

SELECTED INVITED TALKS AND PRESENTATIONS

- "Geometry and Deep Learning", Invited talk at the Gulf Coast Deep Learning Workshop, Lafayette, October 2018.
- "Conformal Geometry in Wireless Sensor Networks", Invited talk at International Workshop for Mathematical Imaging and Digital Geometry, Capital Normal University, Beijing, China, from June 12-13, 2017.
- "Computational Conformal Geometry", Invited talk at the 1st Mid-South Theory Day, Baton Rouge, LA. December 2016.
- "Optimal Marching of Autonomous Networked Robots*",* Proc. of the 36th International Conference on Distributed Computing Systems, Nara, Japan, June 2016.
- "Trace-Routing in 3D Wireless Sensor Networks: A Deterministic Approach with Constant Overhead", Proc. of the 15th ACM International Symposium on Mobile Ad Hoc Networking and Computing, Philadelphia, PA. August 2014.
- "3D Surface Localization with Terrain Model", Proc. of the 33rd Annual IEEE Conference on Computer Communications, Toronto, Canada. April 2014.

- "Computational Conformal Geometry and Applications", Invited talk at Department of Computer Science, Florida State University, Tallahassee, FL. February 2013.
- "Computational Conformal Geometry and Applications", Invited talk at School of Informatics and Computing, Indiana University Bloomington, Bloomington, IN. February 2013.
- "Computational Conformal Geometry and Applications", Invited talk at Department of Electrical Engineering & Computer Science, Colorado School of Mines, Golden, CO. February 2013.
- "Discrete Ricci Curvature Flow – Theory and Algorithms", Invited talk at the Mathematics Department, University of Louisiana at Lafayette, Lafayette, LA. November 2012.
- "Computational Geometry – Theory, Algorithms, and Applications", Invited talk at the Institute for Pattern Recognition and Artificial Intelligence, Huazhong University of Science and Technology, Wuhan, China. June 2012.
- "Bubble Routing: A Scalable Algorithm with Guaranteed Delivery in 3D Sensor Networks*",* Proc. of the 9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks, Seoul, Korea. June 2012.
- "Optimal Surface Deployment Problem in Wireless Sensor Network", Proc. of the 31st Annual IEEE Conference on Computer Communications, Orlando, FL. March 2012.
- "The Power of Geometry – Theory and Applications", Invited talk at Department of Computer Science, Georgia State University, Atlanta, GA. March 2012.
- "The Power of Geometry II", Invited talk at the Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, LA. October 2010.
- "Discrete Geometry Processing", Invited summer course at the Mathematical Science Center, Tsinghua University, Beijing, China. August 2010.
- "The Power of Geometry I", Invited talk at the Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, LA. February 2009.
- "Conformal Geometry and Their Applications in Medical Imaging", Invited talk at the Methodist Hospital Research Institute, Houston, TX. November 2008.

- "General Surface Geometric Structures and Their Applications", Invited talk at Department of Computer Science, University of Hong Kong, Hong Kong, China. July 2008.
- "General Surface Geometric Structures and Their Applications", Invited talk at Department of Computer Science and Engineering, Hong Kong University of Science and Technology, Hong Kong, China. July 2008.
- "General Surface Geometric Structures and Their Applications", Invited talk at Department of Computer Science, Stony Brook University, Stony Brook, NY, May 2008.
- "Discrete Surface Ricci Flow: Theoretical Foundation and Applications", Invited talk at the Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, LA. May 2008.
- "Discrete Surface Ricci Flow: Theoretical Foundation and Applications", Invited talk at Department of Computer Science, University of Chicago, Chicago, IL. March 2008.
- "Discrete Surface Ricci Flow", Invited talk at Mathematics of Surfaces XII, Sheffield, UK, Sept. 2007.
- "Computing Geodesic Spectra of Surfaces", Proc. of ACM Symposium of Solid & Physical Modeling, Beijing, China. June 2007.
- "Computing Surface Geometric Structures", Proc. of SIAM Geometric Design and Computing, Phoenix, AZ. October 2005.
- "Topology-driven Surface Mappings with Robust Feature Alignment", Proc. of IEEE Visualization, Minneapolis, MN. October 2005.

STUDENT ADVISING

- Current Ph.D students:
    - Brad Burkman(since 2019)
    - Zachary Kirby (since 2019)
    - Xuan Li (since 2015)
- Graduated Ph.D. students:
    - Romas James (Dissertation: Minimum Cost Balanced Partitioning of Social Networks. Graduated at December 2019, first job at)

- Buri Ban (Dissertation: Network Resilience Against Dynamic Changes. Graduated at December 2018, first job at WePay)
- Yang Yang (Dissertation: Geometry in Wireless Sensor Networks: In-network Information Processing and Localization. Graduated at December 2013)
- Su Xia (co-advised with Professor Hongyi Wu. Dissertation: Scalable and Deterministic Routing with Guaranteed Delivery in 3D Wireless Sensor Networks. Graduated at August, 2012, first job at CISCO)

- Graduated M.S. students:
  - Zhiqian You (Graduated May 2019, first job at Amazon)
  - Ning Ding (Graduated at December, 2010, first job at Amazon.com).
  - Yendru Revanth (Graduated at August, 2010, first job at WellCare Health Plans).
- PhD Dissertation Committee:
  - Chase J Gaudet (Dissertation: Deep Quaternion Networks.)
  - Baijun Wu (Dissertation: Using Machine Learning to Improve Type Error Debugging. Graduated at December 2019)
  - Mingmin Bai (Dissertation: Performance-Driven Hierarchical Design and Management of Network-on-Chip in Many-core System. Graduated at December 2018)
  - Satya Katragadda (Dissertation: A Framework for Real Time Event Detection for Emergency Situations from Social Media Streams. Graduated at December 2016)
  - Sumi Singh (Dissertation: Protein 3-D Structure Comparison Using Triangular Spatial Relationships. Graduated at August 2015)
  - Yao Zhao (Dissertation: Autonomous Localization in 3D Surface Wireless Sensor Networks. Graduated at August 2014)
  - Hongyu Zhou (Dissertation: Distributed Boundary Detection Algorithms for 3D Sensor Networks. Graduated at December 2012)
  - Xiaojuan Xie (Dissertation: Stimulating Cooperation in Selfish Ad Hoc Network based on 3-D Markov Chain and Two-Person Bargaining Game Models. Graduated at December 2010).
- M.S. Thesis Committee:

- Vaughan Veillon (Title: Fog Computing for Low Latency, Interactive Video Streaming, Graduated at August 2019)
- James Gentry (Title: Robust Resource Allocation of Independent Tasks in Heterogeneous Computing Systems via Probabilistic Task Pruning, Graduated at August 2018)
- Shristi Adwkari (Graduated at December 2010).

SYNERGISTIC ACTIVITIES

- Computational results of discrete surface Ricci flow in [20, 47] have been used as the illustration of the proof of Poincaré conjecture in *New York Times* and the cover of a Mathematics book entitled *Mathematics for Elementary Teachers: A Contemporary Approach (eighth edition)*.
- Conformal colon flattening method proposed in [64] has been licensed by Siemens Healthcare Sector of Germany for colon cancer detection.
- Optimal global conformal surface parameterization algorithm proposed in [67] has been integrated into products of Geometric Informatics, Somerville, MA.
- Special topic courses developed and taught:
  - CSCE 598 **Discrete Geometry Processing**: This is a special topic course. The major objectives of this course are to introduce algorithms and applications of discrete three-dimensional surface processing and provide students hands-on experience. The course focuses on data structures and algorithms for creating, manipulating, editing and analyzing discrete geometry models.
  - CMPS 499/CSCE 572 **Reinforcement Learning and Geometric Algorithms**: this class provides a solid introduction to the field of reinforcement learning, exploring automated decision-making. This course also covers a range of topics related to two-dimensional geometric representation and computation..
- Associate Editor of Knowledge and Information Systems (KAIS) since 2017
- Guest editor of International Journal of Distributed Sensor Networks Special Issue (2016)
- NSF Panelist: NSF CCF 2012, 2013, 2015
- N2WOMEN Panelist: SECON 2012
- N2WOMEN Mentor since 2012

- TPC Member of Geometric Modeling and Processing (GMP) 2014, 2015, 2016, 2017
- TPC Member of ALGOSENSORS 2014, 2015
- TPC Member of INNOV 2012, 2013, 2014, 2015, 2016
- TPC Member of SENSORCOMM 2013, 2014, 2015, 2016, 2017

- Proposal review: US National Science Foundation, Georgian National Science Foundation
- Book proposal reviewer: Bentham Science Publishers
- Reviewers for international journals and conferences:
    - IEEE/ACM Transactions on Networking (TON), IEEE Transactions on Wireless Communications (TWC), IEEE Transaction on Parallel and Distributed Systems (TPDS), IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), ACM Solid and Physical Modeling (SPM), Geometric Modeling and Processing (GMP), Computer Aided Design (CAD), Computer-Aided Geometric Design (CAGD), IEEE Transaction of Visualization and Computer Graphics (TVCG), Pacific Graphics (PG), IEEE International Conference on Computer Vision (ICCV), IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), IEEE Visualization (Vis), Geomatica Journal, IEEE Sensors Journal.
- Department and University Service:
    - University Graduate Fellowships committee member (since fall 2017)
    - Faculty Senate (since fall 2018)
    - CMIX graduate committee chair (since fall 2018)
    - CMIX executive committee member (since fall 2019)
    - CMIX assessment and instructional improvement committee member (since fall 2016)
    - CMIX faculty search committee member (since spring 2016)
    - CMIX Online MS in Computer Science committee member (since spring 2017)
    - Faculty coordinator for algorithm seminar
    - Research talks in CSCE 500: 2008, 2009, 2011, 2012, 2014, 2016.
    - Graduate ceremony: 2008 - current.
    - Junior faculty advising: Dr. Xiali Hei, Dr. Li Chen