

JIE GAO

University Address I

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Research Interests

Algorithms, Networking, Computational geometry.

1. **Geometric algorithms for wireless sensor networks:** location based algorithms for a number of important network architectural components including network localization, geometric routing, spatial gossip, data aggregation, and data-centric routing.
2. **Topological methods in wireless sensor networks:** the study of the morphology of a large sensor field, including the discovery and representation of non-trivial topological features (e.g., holes) of such a field, and applications in fundamental network operations; and the study of the structure of signal landscapes sampled by a field of distributed sensors, including the distributed processing (e.g., the topology extraction) and compact representation of the topological features embedded in the raw sensor readings, and applications in real-time monitoring, situation understanding and response.
3. **Social networks:** the study of online social networks and direct interactions of mobile wireless phones. We develop models and algorithms to study the structure of such networks, and develop innovative tools to aid social interactions.

Education

- Sep 1999 – Aug 2004 Ph.D. in Computer Science, **Stanford University**, Stanford, CA
Dissertation: Hierarchical Data Structures for Mobile Networks
Advisor: Prof. Leonidas J. Guibas
- Sep 1994 – Jul 1999 B.S., Computer Science, **Univ. of Sci. & Tech. China(USTC)**, Hefei, China
Special Class for the Gifted Young, 5-year program

Honors and Awards

- 2009 Best Paper Award from ACM SIGCOMM Internet Measurement Conference.
2006 National Science Foundation (NSF) Faculty Early Career Award
2003 IBM Ph.D Fellowship 2003-2004

Research Experience

- Sep 2011 – now Associate Professor, Computer Science Department,
Stony Brook University, Stony Brook, NY
- Aug 2005 – Sep 2011 Assistant Professor, Computer Science Department,
Stony Brook University, Stony Brook, NY
Hired for fall 2004. Deferred for a year for a postdoc at Caltech.
- Aug 2004 – Aug 2005 Postdoc Fellow, Center for the Mathematics of Information,
California Institute of Technology, Pasadena, CA
Worked with Prof. Jehoshua (Shuki) Bruck and Prof. Leonard Schulman
- Jan 2000 – Aug 2004 Research Assistant, **Stanford University**, Stanford, CA
Advisor: Prof. Leonidas J. Guibas
- Jun – Sep, 2003 Research Intern, **IBM T. J. Watson Research Lab**, Hawthorne, NY
Mentors: Dr. Gautam Kar and Dr. Parviz Kermani
- Jun – Sep, 2002 Research Intern, **Hewlett-Packard Labs**, Palo Alto, CA
Mentor: Dr. Li Zhang
- Jun – Sep, 2001 Research Intern, **Honda Research Institute USA**, Mountain View, CA
Mentor: Dr. Rakesh Gupta

Publications

Electronic versions are available at <http://www.cs.sunysb.edu/~jgao>.

Book chapters

1. Jie Gao, Leonidas Guibas, Geometric Algorithms for Sensor Networks, invited to *Philosophical Transactions of the Royal Society A*, 370, 27-51, 2012.
2. Jie Gao, Geometric Routing in Wireless Sensor Networks, invited to *Guide to Wireless Sensor Networks*, Springer-Verlag, 2009.
3. Jie Gao, Li Zhang, Well-Separated Pair Decomposition for Unit-Disk Graphs, *Encyclopedia of Algorithms*, 2007.

Journal publications

1. Rik Sarkar, Xianjin Zhu, Jie Gao, Distributed and Compact Routing Using Spatial Distributions in Wireless Sensor Networks, *ACM Transactions on Sensor Networks*, 9(4), Nov. 2013.
2. Jie Gao, Dengpan Zhou, The Emergence of Sparse Spanners and Well-Separated Pair Decomposition Under Anarchism, *Journal of Computational Geometry*, 3(1), 1-19, 2012.
3. Rik Sarkar, Xianjin Zhu, Jie Gao, Hierarchical Spatial Gossip for Multi-Resolution Representations in Sensor Networks, *ACM Transactions on Sensor Networks*, 8(1), February, 2012.
4. Steve Y. Oudot, Leonidas J. Guibas, Jie Gao, Yue Wang, Geodesic Delaunay Triangulations in Bounded Planar Domains, invited to a special issue of *ACM Transactions on Algorithms (TALG)*, 6(4), 2010.

5. Jie Gao, Radu Sion, Sol Lederer, Collaborative Location Certification for Sensor Networks, *ACM Transactions on Sensor Networks (TOSN)*, 6(4), 2010.
6. Jie Gao, Michael Langberg, Leonard J. Schulman, Clustering Lines in High Dimensional Space: Classification of Incomplete Data, *ACM Transaction on Algorithms*, 7(1), 2010.
7. Rik Sarkar, Xianjin Zhu, Jie Gao, Double Rulings for Information Brokerage in Sensor Networks, *IEEE/ACM Transactions on Networking*, 17(6), 1902-1915, 2009.
8. Sol Lederer, Yue Wang, Jie Gao, Connectivity-based Localization of Large Scale Sensor Networks with Complex Shape, *ACM Transactions on Sensor Networks*, 5(4), November, 2009.
9. Xianjin Zhu, Rik Sarkar, Jie Gao, Segmenting a Sensor Field: Algorithms and Applications in Network Design, *ACM Transactions on Sensor Networks*, 5(2), 1-32, May, 2009.
10. Jie Gao, Li Zhang, Tradeoffs between Stretch Factor and Load Balancing Ratio in Routing on Growth Restricted Graphs, *IEEE Transactions on Parallel and Distributed Systems*, 20(2), 171-179, February, 2009.
11. Jehoshua Bruck, Jie Gao, Anxiao Jiang, Localization and Routing in Sensor Networks by Local Angle Information, *ACM Transaction on Sensor Networks*, 5(1), 1-31, February, 2009.
12. Jie Gao, Michael Langberg, Leonard J. Schulman, Analysis of Incomplete Data and an Intrinsic-Dimension Helly Theorem, *Discrete and Computational Geometry*, 40(4), 537-560, 2008.
13. Jehoshua Bruck, Jie Gao, and Anxiao Jiang, MAP: Medial Axis Based Geometric Routing in Sensor Networks, *Wireless Networks (WINET)*, 13(6), 835-853, 2007.
14. Jie Gao, Leonidas J. Guibas, An Nguyen, Deformable Spanners and Applications, *Computational Geometry : Theory and Applications*, vol. 35, Issues 1-2, 2-19, 2006.
15. Jie Gao, Li Zhang, Load Balanced Short Path Routing in Wireless Networks, *IEEE Transactions on Parallel and Distributed Systems, Special Issue on Localized Communications*, 17(4), 377-388, April, 2006.
16. Qing Fang, Jie Gao, Leonidas J. Guibas, Locating and Bypassing Routing Holes in Sensor Networks, *ACM Mobile Networks and Applications (MONET), Special Issue on Foundations of Mobile Computing*, 11(2), 187-200, 2006.
17. Jie Gao, Li Zhang, Well-Separated Pair Decomposition for the Unit-Disk Graph Metric and its Applications, *SIAM J. Computing*, 35(1), 151-169, 2005.
18. Jie Gao, Leonidas J. Guibas, John Hershberger, Li Zhang, An Zhu, Geometric Spanners for Routing in Mobile Networks, *IEEE Journal on Selected Areas in Communications (J-SAC), Special Issue on Wireless Ad Hoc Networks*, 23(1), 174-185, Jan, 2005.
19. Jie Gao, Leonidas J. Guibas, John Hershberger, Li Zhang, An Zhu, Discrete Mobile Centers, *Discrete and Computational Geometry*, 30(1), 45-65, 2003.

Refereed conference publications

1. Xiaokang Yu, Xiaotian Yin, Wei Han, Jie Gao, Xianfeng David Gu, Scalable Routing in 3D High Genus Sensor Networks Using Graph Embedding, *Proc. of the 31st Annual IEEE Conference on Computer Communications (INFOCOM'12)*, mini-conference, March, 2012.

2. Khuong Vu, Rong Zheng, Jie Gao, Efficient Algorithms for K -Anonymous Location Privacy in Participatory Sensing, *Proc. of the 31st Annual IEEE Conference on Computer Communications (INFOCOM'12)*, March, 2012.
3. Jie Gao, Dengpan Zhou, Resilient and Low Stretch Routing Through Embedding into Tree Metrics, *Proc. of the 12th Algorithms and Data Structures Symposium (WADS'11)*, 438-450, August, 2011.
4. Xiaomeng Ban, Rik Sarkar, Jie Gao, Local Connectivity Tests to Identify Wormholes in Wireless Networks, *Proc. of the 12th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'11)*, May, 2011.
5. Ruirui Jiang, Xiaomeng Ban, Mayank Goswami, Wei Zeng, Jie Gao, Xianfeng David Gu, Exploration of Path Space using Sensor Network Geometry, *Proc. of the 10th International Symposium on Information Processing in Sensor Networks (IPSN'11)*, 49-60, April, 2011.
6. Xiaokang Yu, Xiaomeng Ban, Rik Sarkar, Wei Zeng, Xianfeng David Gu, Jie Gao, Spherical Representation and Polyhedron Routing for Load Balancing in Wireless Sensor Networks, *Proc. of the 30th Annual IEEE Conference on Computer Communications (INFOCOM'11)*, 612-615, mini-conference, March, 2011. Also presented at 20th Fall Workshop on Computational Geometry, Oct 29-30, 2010.
7. Rik Sarkar, Jie Gao, Differential Forms for Target Tracking and Aggregate Queries in Distributed Networks, *Proc. of the 16th Annual International Conference on Mobile Computing and Networking (MobiCom'10)*, 377-388, September, 2010.
8. Navid Azimi, Himanshu Gupta, Xiaoxiao Hou, Jie Gao, Data Preservation Under Spatial Failures in Sensor Networks, *Proc. of the 11th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'10)*, 171-180, September, 2010.
9. Michele Albano, Jie Gao, In-Network Coding for Resilient Sensor Data Storage and Efficient Data Mule Collection, *Proc. of the 6th International Workshop on Algorithms for Sensor Systems, Wireless Ad Hoc Networks and Autonomous Mobile Entities (ALGO-SENSOR'10)*, 105-117, July, 2010.
10. Jie Gao, Dengpan Zhou, The Emergence of Sparse Spanners and Greedy Well-Separated Pair Decomposition, *Proc. of the 12th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT'10)*, 50-61, June, 2010. Also presented at 18th Fall Workshop on Computational Geometry, Oct 31-Nov 1, 2008.
11. Pankaj K. Agarwal, Jie Gao, Leonidas Guibas, Haim Kaplan, Vladlen Koltun, Natan Rubin, Micha Sharir. Kinetic Stable Delaunay Graphs, *Proc. of the 26th ACM Symposium on Computational Geometry (SoCG'10)*, 127-136, June, 2010.
12. Rik Sarkar, Wei Zeng, Jie Gao, Xianfeng David Gu, Covering Space for In-Network Sensor Data Storage, *Proc. of the 9th International Symposium on Information Processing in Sensor Networks (IPSN'10)*, 232-243, April, 2010.
13. Wei Zeng, Rik Sarkar, Feng Luo, Xianfeng David Gu, Jie Gao, Resilient Routing for Sensor Networks using Hyperbolic Embedding of Universal Covering Space, *Proc. of the 29th Annual IEEE Conference on Computer Communications (INFOCOM'10)*, 1694-1702, March, 2010. Also presented at 19th Fall Workshop on Computational Geometry, Nov 13-14, 2009.
14. Dengpan Zhou, Jie Gao, Maintaining Approximate Minimum Steiner Tree and k -center for Mobile Agents in a Sensor Network, *Proc. of the 29th Annual IEEE Conference on*

- Computer Communications (INFOCOM'10)*, 511-515, mini-conference, March, 2010. Also presented at 19th Fall Workshop on Computational Geometry, Nov 13-14, 2009.
15. Xiaomeng Ban, Jie Gao, Arnout van de Rijt, Navigation in Real-World Complex Networks through Embedding in Latent Spaces, *Workshop on Algorithm Engineering and Experiments (ALENEX10)*, 138-148, January, 2010.
 16. Rupa Krishnan, Harsha V. Madhyastha, Sridhar Srinivasan, Sushant Jain, Arvind Krishnamurthy, Thomas Anderson, Jie Gao, Moving Beyond End-to-End Path Information to Optimize CDN Performance, *Proc. of the Internet Measurement Conference (IMC'09)*, 190-201, November, 2009. Received the **Best Paper Award**.
 17. Bin Tang, Xianjin Zhu, Anand Prabhu Subramanian, Jie Gao, DAL: A Distributed Localization in Sensor Networks Using Local Angle Measurement, *Proc. of the 18th International Conference on Computer Communications and Networks (ICCCN 2009)*, August, 2009.
 18. Rik Sarkar, Xiaotian Yin, Jie Gao, Feng Luo, Xianfeng David Gu, Greedy Routing with Guaranteed Delivery Using Ricci Flows, *Proc. of the 8th International Symposium on Information Processing in Sensor Networks (IPSN'09)*, 97-108, April, 2009. Also presented at the 19th Fall Workshop on Computational Geometry, Nov 13-Nov 14, 2009.
 19. Jie Gao, Leonidas J. Guibas, Nikola Milosavljević, Dengpan Zhou, Distributed Resource Management and Matching in Sensor Networks, *Proc. of the 8th International Symposium on Information Processing in Sensor Networks (IPSN'09)*, 121-132, April, 2009.
 20. Dengpan Zhou, Jie Gao, Opportunistic Processing and Query of Motion Trajectories in Wireless Sensor Networks, *Proc. of the 28th Annual IEEE Conference on Computer Communications (INFOCOM'09)*, 1197-1205, April, 2009.
 21. Yue Wang, Sol Lederer, Jie Gao, Connectivity-based Sensor Network Localization with Incremental Delaunay Refinement Method, *Proc. of the 28th Annual IEEE Conference on Computer Communications (INFOCOM'09)*, 2401-2409, April, 2009. Also presented at 18th Fall Workshop on Computational Geometry, Oct 31-Nov 1, 2008.
 22. Xianjin Zhu, Rik Sarkar, Jie Gao, Topological Data Processing for Distributed Sensor Networks with Morse-Smale Decomposition, *Proc. of the 28th Annual IEEE Conference on Computer Communications (INFOCOM'09), Mini-conference*, 2911-2915, April, 2009.
 23. Rik Sarkar, Xianjin Zhu, Jie Gao, Spatial Distributions in Routing Table Design for Sensor Networks, *Proc. of the 28th Annual IEEE Conference on Computer Communications (INFOCOM'09), Mini-conference*, 2766-2770, April, 2009. Also presented at 18th Fall Workshop on Computational Geometry, Oct 31-Nov 1, 2008.
 24. Jie Gao, Rik Sarkar, Xianjin Zhu, Morse Smale Decomposition, Cut Locus, and Applications in Wireless Sensor Networks, presented at 18th Fall Workshop on Computational Geometry, Oct 31-Nov 1, 2008.
 25. Huijia Lin, Maohua Lu, Nikola Milosavljevic, Jie Gao, Leonidas J. Guibas, Composable Information Gradients in Wireless Sensor Networks, *Proc. of the 7th International Symposium on Information Processing in Sensor Networks (IPSN'08)*, 121-132, April, 2008.
 26. Xianjin Zhu, Rik Sarkar, Jie Gao, Joseph S. B. Mitchell, Light-weight Contour Tracking in Wireless Sensor Networks, *Proc. of the 27th Annual IEEE Conference on Computer Communications (INFOCOM'08)*, 960-967, April, 2008.
 27. Rik Sarkar, Xianjin Zhu, Jie Gao, Leonidas J. Guibas, Joseph S. B. Mitchell, Iso-Contour

- Queries and Gradient Descent with Guaranteed Delivery in Sensor Networks, *Proc. of the 27th Annual IEEE Conference on Computer Communications (INFOCOM'08)*, 1175-1183, April, 2008.
28. Anand Prabhu Subramanian, Pralhad Deshpande, Jie Gao, Samir R. Das, Drive-by Localization of Roadside WiFi Networks, *Proc. of the 27th Annual IEEE Conference on Computer Communications (INFOCOM'08)*, 718-725, April, 2008.
 29. Sol Lederer, Yue Wang, Jie Gao, Connectivity-based Localization of Large Scale Sensor Networks with Complex Shape, *Proc. of the 27th Annual IEEE Conference on Computer Communications (INFOCOM'08)*, 789-797, April, 2008.
 30. Sol Lederer, Jie Gao, Radu Sion, Collaborative Location Certification for Sensor Networks, invited to the *Proc. of the 2008 IEEE Sarnoff Symposium*. April, 2008. Under the title "On Certifying Location claims in Sensor Networks" presented at the *Conference of Applied Cryptography and Network Security (ACNS)*, industrial track, 2007.
 31. Jie Gao, Leonidas J. Guibas, Steve Y. Oudot, Yue Wang, Geodesic Delaunay Triangulations and Witness Complexes in the Plane, *Proc. of the ACM-SIAM Symposium on Discrete Algorithms (SODA'08)*, 571-580, January, 2008.
 32. Jie Gao, Leonidas Guibas, John Hershberger, Nikola Milosavljevic, Sparse Data Aggregation in Sensor Networks, *Proc. of the 6th International Symposium on Information Processing in Sensor Networks (IPSN'07)*, 430-439, April, 2007.
 33. Rik Sarkar, Xianjin Zhu, Jie Gao, Hierarchical Spatial Gossip for Multi-Resolution Representations in Sensor Networks, *Proc. of the 6th International Symposium on Information Processing in Sensor Networks (IPSN'07)*, 420-429, April, 2007.
 34. Xianjin Zhu, Rik Sarkar, Jie Gao, Shape Segmentation and Applications in Sensor Networks, *Proc. of the 26th Annual IEEE Conference on Computer Communications (INFOCOM'07)*, 1838-1846, May, 2007.
 35. Ritesh Maheshwari, Jie Gao, Samir Das, Detecting Wormhole Attacks in Wireless Networks Using Connectivity Information, *Proc. of the 26th Annual IEEE Conference on Computer Communications (INFOCOM'07)*, 107-115, May, 2007.
 36. An Nguyen, Nikola Milosavljevic, Qing Fang, Jie Gao, Leonidas J. Guibas, Landmark Selection and Greedy Landmark-descent Routing for Sensor Networks, *Proc. of the 26th Annual IEEE Conference on Computer Communications (INFOCOM'07)*, 661-669, May, 2007.
 37. Rik Sarkar, Xianjin Zhu, Jie Gao, Double Rulings for Information Brokerage in Sensor Networks, *Proc. of the 12th Annual International Conference on Mobile Computing and Networking (MobiCom'06)*, 286-297, September, 2006.
 38. Yue Wang, Jie Gao, Joseph S.B. Mitchell, Boundary Recognition in Sensor Networks by Topological Methods, *Proc. of the 12th Annual International Conference on Mobile Computing and Networking (MobiCom'06)*, 122-133, September, 2006.
 39. Jehoshua Bruck, Jie Gao, Anxiao Jiang, Weighted Bloom Filter, *2006 IEEE International Symposium on Information Theory (ISIT'06)*, 2304-2308, July, 2006.
 40. Amitabh Basu, Jie Gao, Joseph S.B. Mitchell, Girishkumar Sabhnani, Distributed Localization by Noisy Distance and Angle Information, *Proc. of the 7th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'06)*, 262-273, May, 2006.

41. Qing Fang, Jie Gao, Leonidas J. Guibas, Landmark-Based Information Storage and Retrieval in Sensor Networks, *Proc. of the 25th Conference of the IEEE Communication Society (INFOCOM'06)*, 1-12, April, 2006.
42. Jie Gao, Michael Langberg, Leonard J. Schulman, Analysis of Incomplete Data and an Intrinsic-Dimension Helly Theorem, *Proc. of ACM-SIAM Symposium on Discrete Algorithms (SODA'06)*, 464-473, January, 2006.
43. Jehoshua Bruck, Jie Gao, and Anxiao Jiang, MAP: Medial Axis Based Geometric Routing in Sensor Networks, *Proc. of the 11th Annual International Conference on Mobile Computing and Networking (MobiCom'05)*, 88-102, August, 2005.
44. Pankaj K. Agarwal, Mark de Berg, Jie Gao, Leonidas J. Guibas, Sarel Har-Peled, Staying in the Middle: Exact and Approximate Medians in R1 and R2 for Moving Points, *Proc. of the 17th Canadian Conference on Computational Geometry (CCCG'05)*, 42-45, August, 2005.
45. Jehoshua Bruck, Jie Gao, Anxiao Jiang, Localization and Routing in Sensor Networks by Local Angle Information, *Proc. of the Sixth ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'05)*, 181-192, May, 2005.
46. Jie Gao, Leonidas J. Guibas, An Nguyen, Distributed Proximity Maintenance in Ad Hoc Mobile Networks, *Proc. IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS'05)*, 4-19, June, 2005.
47. Qing Fang, Jie Gao, Leonidas J. Guibas, Vin de Silva, Li Zhang, GLIDER: Gradient landmark-based distributed routing for sensor networks, *The 24th Conference of the IEEE Communications Society (INFOCOM'05)*, vol. 1, 339-350, March, 2005.
48. Jie Gao, Li Zhang, Tradeoffs between Stretch Factor and Load Balancing Ratio in Routing on Growth Restricted Graphs, *ACM Symposium on Principles of Distributed Computing (PODC'04)*, 189-196, July, 2004.
49. Jie Gao, Leonidas J. Guibas, An Nguyen, Deformable Spanners and Applications, *Proc. of the 20th ACM Symposium on Computational Geometry (SoCG'04)*, 190-199, June, 2004.
50. Jie Gao, Leonidas J. Guibas, John Hershberger, Li Zhang, Fractionally Cascaded Information in a Sensor Network, *Proc. of the 3rd International Symposium on Information Processing in Sensor Networks (IPSN'04)*, 311-319, April, 2004.
51. Jie Gao, Gautam Kar, Parviz Kermani, Approaches to Building Self Healing Systems using Dependency Analysis, *IEEE/IFIP Network Operations and Management Symposium (NOMS)*, vol. 9, no. 1, 119-132, Apr 2004.
52. Jie Gao, Li Zhang, Load Balanced Short Path Routing in Wireless Networks, *The 23rd Conference of the IEEE Communications Society (INFOCOM)*, vol. 23, no. 1, 1099-1108, March 2004.
53. Qing Fang, Jie Gao, Leonidas J. Guibas, Locating and Bypassing Routing Holes in Sensor Networks, *The 23rd Conference of the IEEE Communications Society (INFOCOM)*, vol. 23, no. 1, 2458-2468, March 2004.
54. Jie Gao, Li Zhang, Well-Separated Pair Decomposition for the Unit-Disk Graph Metric and its Applications, *Proc. the 35th ACM Symposium on Theory of Computing (STOC'03)*, 483-492, June, 2003.
55. Jie Gao, Rakesh Gupta, Efficient Proximity Search for 3-D Cuboids, *Proc. 3rd Interna-*

tional Workshop on Computational Geometry and Applications, Lecture Notes in Computer Science 2669, 817 - 826, May, 2003.

56. Pankaj K. Agarwal, Jie Gao, Leonidas J. Guibas, Kinetic Medians and kd -trees, *Proc. of the 10th Annual European Symposium on Algorithms (ESA'02)*, Lecture Notes in Computer Science 2461, 5-16, September 2002.
57. Jie Gao, Leonidas J. Guibas, John Hershberger, Li Zhang, An Zhu, Geometric Spanner for Routing in Mobile Networks, *Proc. of the 2nd ACM Symposium on Mobile Ad Hoc Networking & Computing (MobiHoc'01)*, 45-55, October 2001.
58. Jie Gao, Leonidas J. Guibas, John Hershberger, Li Zhang, An Zhu, Discrete Mobile Centers, *Proc. of the 17th ACM Symposium on Computational Geometry (SoCG'01)*, 188-196, June 2001.

Dissertation

1. Jie Gao, Hierarchical Data Structures for Mobile Networks, Ph.D Dissertation, Stanford University, August, 2004.

Invited Talks

Differential Forms for Target Tracking and Queries in Wireless Sensor Networks, Computer Science Department, Northwestern University, January 13th, 2012.

Local Curvature, Ricci Flow and Greedy Routing in Wireless Networks, Workshop on Geometry of Large Networks, American Institute of Mathematics (AIM), Palo Alto, CA, Nov 4th, 2011.

Geometric Algorithms for Wireless Sensor Networks, University of Science and Technology of China, Hefei, Anhui, China, August 12, 2011.

Differential Forms for Target Tracking and Aggregate Queries in Distributed Networks, Microsoft Research Asia, Beijing, China, August 3rd, 2011.

Range Queries in Distributed Networks, Dagstuhl Seminar on Computational Geometry, Schloss Dagstuhl, Wadern, Germany, March 13-18, 2011.

Geometric Routing in Wireless Sensor Networks, Research in Science and Technology Fields, The Center for Teaching and Scholarly Excellence, Hofstra University, November 3rd, 2010.

Greedy Routing with Guaranteed Delivery Using Ricci Flows, Emerging Trends in Mobile, Sensor, and Social Networks (MSS 2010), the CReWMaN 10th Anniversary Celebration/Workshop, Arlington, TX, October 7-8, 2010.

Sensor Network Geometry, GuibasFest, Stanford University, July 31st-August 1st, 2010.

Greedy Routing with Guaranteed Delivery Using Ricci Flows, WINLAB, Rutgers University, April 7th, 2010.

Greedy Routing with Guaranteed Delivery Using Ricci Flows, Joint Math & CS Colloquium, Temple University, March 26, 2010.

Greedy Routing with Guaranteed Delivery Using Ricci Flows, IEEE seminar, Department of Electrical and Computer Engineering, New Jersey Institute of Technology, March 25, 2010.

Sensor Network Localization, Barbados Workshop 2010: Rigidity Theory and Applications, Bellairs Research Institute, Jan 2-7, 2010.

- Greedy Routing with Guaranteed Delivery Using Ricci Flows, Department of Computer Science, University of Southern California, Nov 9th, 2009.
- Greedy Routing with Guaranteed Delivery Using Ricci Flows, Center for the Mathematics of Information, California Institute of Technology, Nov 9-10, 2009.
- Geometric Algorithms for Wireless Sensor Networks, keynote speech, The Third China Conference on Wireless Sensor Networks, October 21-23, 2009.
- Network Metric Approximation and Mobile Agent Coordination in Sensor Networks, Dagstuhl Seminar on Algorithmic Methods for Distributed Cooperative Systems, Schloss Dagstuhl, Wadern, Germany, September 6-11, 2009.
- Greedy Routing with Guaranteed Delivery Using Ricci Flows, Bertinoro International Center for Informatics, Bologna, Italy, July 20-24, 2009.
- Fractional Cascading in Wireless Sensor Networks, CS Colloquium, Department of Computer Science, Hofstra University, May 6, 2009.
- Discovery of Sensor Network Geometry, Banff International Research Station, Workshop on Rigidity, Flexibility, and Motion: Theory, Computation and Applications to Biomolecules, Banff, Calgary, Canada, July 6-11, 2008.
- Contour Tracking in Wireless Sensor Networks, US-France Young Engineering Scientists Workshop, Washington, DC, October 22, 2007.
- Landmark-based Routing and Localization of Wireless Sensor Networks, CS Colloquium, Department of Computer Science, Rensselaer Polytechnic Institute, September 14, 2007.
- Discovery of Sensor Network Geometry, Dagstuhl Seminar on Geometry in Sensor Networks, Schloss Dagstuhl, Wadern, Germany, April 10, 2007.
- Discovery of Sensor Network Geometry, Max-Planck-Institut für Informatik, Saarbrücken, Germany, April 5, 2007.
- Geometric Algorithms for Wireless Sensor Networks, CSE600 Ongoing Research Seminar, Computer Science Department, Stony Brook University, September 22, 2006.
- Road Systems for Sensor Networks, NSF Workshop on Geometric Approaches to Ad Hoc and Sensor Networks, Santa Barbara, CA, June 11, 2006.
- Distributed Localization by Noisy Distance and Angle Information, Distributed Information Systems Group, California Institute of Technology, May 18, 2006.
- Landmark-based Routing and Information Brokerage in Sensor Networks, Department of Computer Science and Department of Electrical and Computer Engineering, Texas A&M University, October, 2005.
- Geometric Routing in Wireless Sensor Networks, CSE600 Ongoing Research Seminar, Computer Science Department, Stony Brook University, September, 2005.
- Kinetic Data Structures I & II, Center for the Mathematics of Information (CMI) Seminar, California Institute of Technology, Jan, 2005.
- Simple Smooth Stable Mobile Structures, Computer Science Department, Rice University, March, 2004.

Simple Smooth Stable Structures for Mobile Networks, Computer Science Department, State University of New York, Stony Brook, March, 2004.

Simple Smooth Stable Mobile Structures, Division of Information Science and Technology, California Institute of Technology, March, 2004.

Simple Smooth Stable Mobile Structures, Computer Science Department, Dartmouth College, February, 2004.

Efficient Geometric Structures for Mobile Networks, IBM T. J. Watson Research Lab, Hawthorne, NY, September, 2003.

Kinetic Medians and *kd*-trees, DIMACS (Center for Discrete Mathematics and Theoretical Computer Science) Workshop on Algorithmic Issues in Modeling Motion, Rutgers University, Piscataway, NJ, November, 2002.

Patents

Geometric Routing in Wireless Networks, with Jehoshua Bruck and Anxiao Jiang, patent application filed on April 18, 2006 with United States. Application Serial No. 11/379,196.

Environmental Reasoning using Geometric Data Structure, with R. Gupta, US patent filed, September, 2002.

Grants

NSF CNS-1116881 **NeTS: Small: Algorithmic Foundations for Joint Information Processing and Optimization in a Hybrid Mobile Sensor Network**, \$257,581, 07/01/2011-06/30/2014. Single PI.

DARPA **GLAD-PC - Graph Learning for Anomaly Detection using Psychological Context**, 2-year project starting in summer 2011. This project is joint with three other PI and co-PIs: Dr. Oliver Brdiczka (Palo Alto Research Center, leading role), Dr. Kamalika Das (NASA Ames), and Dr. Elise Weaver (HumRRO). I lead the subcontract of Stony Brook University. Total amount: \$3,514,890.

NSF CNS-1016829 **NeTS: Small: Large Scale Sensor Network Routing using Conformal Geometry**, \$450,000, 07/01/2010-06/30/2013. PI: Jie Gao, co-PI: Xianfeng Gu.

NSF CNS-0643587 **CAREER: Geometric Algorithms for Wireless Sensor Networks**, \$400,000, 01/01/2007-12/31/2011. Single PI.

Sensor Network Algorithms for Dynamic Tracking and Monitoring, Stony Brook CEWIT seed funding, \$9,000, PI Jie Gao, co-PI Joseph S.B. Mitchell, 01/01/2007-12/31/2007.

Real-world Mobility Trace Collection and Modeling for Wireless Simulation Environments, Stony Brook CEWIT seed funding, \$9,000, co-PI: Jie Gao, co-PI: Jennifer Wong, 01/01/2007-12/31/2007.

Location Assurances in Wireless Sensor Networks, Stony Brook CEWIT seed funding, \$9,000, co-PI: Jie Gao, co-PI Radu Sion, 01/01/2007-12/31/2007.

Secure Data Aggregation in Wireless Sensor Networks, Stony Brook CEWIT seed funding, \$21,000, co-PI: Jie Gao, co-PI Radu Sion, 01/01/2006-12/31/2006.

Teaching Experience

	Department of Computer Science, Stony Brook University , Stony Brook, NY
Fall 2011	CSE310 Data Communication and Networks (undergraduate)
Fall 2011	CSE642 Algorithm Seminar
Spring 2011	CSE590 Special Topics: Sensor Networks (graduate)
Spring 2011	CSE390 Special Topics: Social Networks (undergraduate)
Spring 2011	CSE642 Algorithm Seminar
Fall 2010	CSE310 Data Communication and Networks (undergraduate)
Fall 2010	CSE642 Algorithm Seminar
Spring 2010	CSE590 Special Topics: Sensor Networks (graduate)
Spring 2010	CSE370 Wireless and Mobile Networks (undergraduate)
Spring 2010	CSE642 Algorithm Seminar
Fall 2009	CSE590 Wireless and Mobile Networks (graduate)
Fall 2009	CSE642 Algorithm Seminar
Spring 2009	CSE595 Special Topics: Sensor Networks (graduate)
Spring 2009	CSE302 Ethics in Computer Science (undergraduate)
Fall 2008	CSE548 (AMS542) Advanced Analysis of Algorithms (graduate)
Fall 2008	CSE642 Algorithm Seminar
Spring 2008	CSE548 (AMS542) Advanced Analysis of Algorithms (graduate)
Spring 2008	CSE642 Algorithm Seminar
Spring 2008	CSE658 Wireless Networking Seminar: Topological Methods for Wireless Networking
Fall 2007	CSE548 (AMS542) Advanced Analysis of Algorithms (graduate)
Fall 2007	CSE642 Algorithm Seminar
Spring 2007	CSE370 Wireless and Mobile Networking (undergraduate)
Spring 2007	CSE642 Algorithm Seminar
Fall 2006	CSE590 Special Topics: Sensor Networks (graduate)
Fall 2006	CSE642 Algorithm Seminar
Spring 2006	CSE370 Wireless and Mobile Networking (undergraduate)
Spring 2006	CSE642 Algorithm Seminar
Spring 2006	CSE659 Wireless Security Seminar
Fall 2005	CSE590 Special Topics: Sensor Networks (graduate)
	Mathematical Sciences Center, Tsinghua University , Beijing, China
Summer 2011	Computational Geometry and Applications, 16-hour crash course

Departmental Services

- Graduate Admission Committee.
- Faculty Coordinator for Women in Computer Science.
- Faculty Coordinator for Algorithm Seminar.
- Ph.D. Qualifying Exam Committee.
- Advisor for Honor Undergraduate Students.

Professional Activities

- Associate editor for ACM Transactions on Sensor Networks, since Jan 2009.
- Associate editor for IEEE Transactions on Automation Science and Engineering, since March 2010.

Proposal reviewer for Research Grant Council, Hong Kong, Jan 2010.

Proposal reviewer for Natural Sciences and Engineering Research Council of Canada, Oct, 2009, Dec, 2010.

National Science Foundation (NSF) panelist, Jan, 2007; reviewer, Feb 2009; Dec 2010.

Proposal reviewer for U.S.-Israel Binational Science Foundation, Feb, 2007.

Proposal reviewer for Israel Science Foundation, March, 2006.

Technical program chair for:

The Ad-Hoc, Sensor, and Dynamic Networks Track, 12th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2010),
IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), algorithm track, 2012.

Technical program committee member for:

Annual IEEE Conference on Automation Science and Engineering (CASE 2011);
IEEE International Symposium on Consumer Electronics 2011;
The International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSORS), 2008, 2010, 2011;
The ACM Conference on Embedded Networked Sensor Systems (SenSys), 2011, 2012;
The European Conference on Wireless Sensor Networks (EWSN), 2010, 2011;
The International Conference on Distributed Computing Systems (ICDCS'11),
The IEEE Wireless Communications and Networking Conference (WCNC'11),
The IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS), 2009, 2010, 2011,
Video/Multimedia Program Committee for International Symposium on Computational Geometry (SoCG'2010);
IEEE GLOBECOM, Next Generation Networking Symposium (2011), Wireless Networking Symposium (2008, 2009), Ad-hoc and Sensor Networking Symposium (2009, 2010, 2011);
International Conference on Wireless Information Networks and Systems, 2009;
The International Conference on Ad Hoc Networks and Wireless (ADHOCNOW), 2009, 2011;
International Workshop on Robotic Wireless Sensor Networks, 2009;
IEEE International Conference on Computer Communication and Networks (ICCCN 2009);
The ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc, '08, '09);
IEEE International Conference on Communications (ICC), Wireless Networking Symposium, 2008; Ad-hoc, Sensor and Mesh Networking Symposium, 2010, 2011, 2012;
International Workshop on Algorithms and Mobile Ad hoc Networks (WAMAN'08);
The 37th International Conference on Parallel Processing (ICPP), algorithms and applications area, 2008;
ACM International Workshop on Foundations of Wireless Ad Hoc and Sensor Networking and Computing (FOWANC), 2008;
The International Symposium on Information Processing in Sensor Networks (IPSN), 2007, 2008, 2012
International Conference on Sensor Technologies and Applications (SENSORCOMM), 2007,
IEEE International Conference on Wireless Algorithms, Systems, and Applications (IEEE WASA), 2007,
International Workshop on Theoretical and Algorithmic Aspects of Sensor and Ad-hoc Networks, 2007,

IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), algorithm track, 2007, 2009, 2010, 2011
 The Annual ACM Symposium on Computational Geometry (SoCG), 2007,
 The International Conference on Algorithmic Aspects in Information and Management (AAIM), 2007, 2011,
 The Annual Fall Workshop on Computational Geometry, 2006, 2010
 IEEE International Workshop on Localized Communication and Topology Protocols for Ad hoc Networks, 2005, 2006.
 IEEE WirelessCom, Symposium on emerging networks, technologies and standards, 2005.

Reviewers for theory and networking conferences/journals:

ACM Symposium on Theory of Computing (STOC) ('01, '07),
 ACM Symposium on Computational Geometry (SoCG) ('06, '08, '09),
 ACM-SIAM Symposium on Discrete Algorithms (SODA) ('07, '08, '09, '10, '11),
 European Symposium on Algorithms (ESA) ('09, '10),
 ACM Symposium on Principles of Distributed Computing (PODC),
 International Conference in Automata, Languages and Programming (ICALP),
 Scandinavian Workshop on Algorithm Theory (SWAT) ('06),
 Workshop on Algorithms and Data Structures (WADS),
 Latin American Theoretical Informatics Symposium (LATIN) ('08),
 International Symposium on Theoretical Aspects of Computer Science (STACS),
 SIAM J. Computing,
 Discrete and Computational Geometry (DCG),
 Journal of Computational Geometry (JoCG),
 Computational Geometry: Theory and Applications (CGTA),
 International Journal on Computational Geometry and Applications (IJCGA),
 Algorithmica,
 ACM Transactions on Algorithms,
 Theoretical Computer Science,
 Discrete Applied Mathematics,
 ACM Journal on Experimental Algorithms,
 Information Sciences,
 ACM Annual International Conference on Mobile Computing and Networking (MobiCom) ('06, '07, '09),
 IEEE Communications Society (INFOCOM) ('04, '09, '10),
 ACM Conference on Embedded Networked Sensor Systems (SenSys) ('04, '07),
 International Symposium on Distributed Computing (DISC),
 International Workshop on the Algorithmic Foundations of Robotics (WAFR)('10),
 International Conference on Distributed Computing Systems (ICDCS),
 IEEE/RSJ International Conference on Intelligent Robots and Systems (RTOS) ('09),
 IEEE Trans on Computers,
 IEEE Transactions on Knowledge and Data Engineering,
 IEEE Trans on Networking,
 IEEE Trans on Mobile Computing,
 IEEE Trans on Wireless Communications,
 IEEE Trans on Parallel and Distributed Systems,
 IEEE Trans on Embedded Computing Systems,
 IEEE Trans on Automatic Control,
 IEEE Trans on Robotics,
 IEEE Trans on Signal Processing,
 ACM Transactions on Sensor Networks (ToSN),

ACM Transactions on Embedded Computing Systems,
 ACM Mobile Networks and Applications (MONET),
 IEEE Journal on Selected Areas in Communications (J-SAC),
 IEEE Communications Letters,
 Wireless Networks,
 Computer Networks,
 Networks,
 Sensors,
 Pervasive and Mobile Computing,
 Computer Communications,
 Wireless Communications and Mobile Computing,
 Journal of Parallel and Distributed Computing,
 Ad Hoc Networks,
 EURASIP Journal on Wireless Communications and Networking,
 Computing and Informatics,
 Journal of Networks.

Web chair for the International Symposium on Information Processing in Sensor Networks (IPSN'08, IPSN'09).

Publications chair for the International Symposium on Information Processing in Sensor Networks (IPSN'09, IPSN'12).

Association for Computing Machinery (ACM) member.

Institute of Electrical and Electronics Engineers (IEEE) member.

Student Advising

Graduated Ph.D students:

Xianjin Zhu (co-advised with Prof. Himanshu Gupta. Dissertation: Collaborative Information Processing and Query Evaluation in Wireless Sensor Networks. Graduated August, 2008, now at Microsoft),

Yue Wang (co-advised with Prof. Joseph Mitchell. Dissertation: Geometry Discovery With Connectivity Information And Applications In Sensor Networks. Graduated May, 2009, now at Microsoft),

Sol Lederer (Dissertation: Localization and Location Certification in Sensor Networks. Graduated December, 2009, now at Morgan Stanley),

Rik Sarkar (Dissertation: Geometric Abstractions for Information Processing in Sensor Networks. Graduated May 2010, now postdoc at University of Berlin),

Rupa Krishnan (Dissertation: Improving Network Performance through Measurement Based Analysis. Graduated August 2010, now at Google).

Current Ph.D students:

Dengpan Zhou (2006 till now),

Xiaomeng Ban (2007 till now),

Akshay Patil, (2009 till now),

Siming Li (2011 till now).

Graduated M.S. students:

Hyunjung Lee (now in the Ph.D program of CS, Stony Brook University),

Seung Joon Park (now at Goldman Sachs).

Undergraduate student:

Jonathon Coe (in honor's program),
Chloe Kong (in honor's program).

High school students (through Simons Summer Research Program):

Samuel B. Panzer (summer 2007). Samuel's summer project won the 2nd place in the math/cs category, at the Annual Long Island Junior Science and Humanities Symposium, 2008.

Ph.D thesis defense committee member:

Julia EunJu Nam (Title: Exploratory Visual Analytics in High Dimensional Space), June, 2011.

Wenbin Zhang (Title: News Based Forecasting and Modeling), May, 2011.

Jaewook Yu (Title: Quasi Borel Cayley Graphs for Ultrafast Information Dissemination in Large and Dense Networks), March, 2011.

Miao Zhao (Title: Design and Optimization on Mobile Data Gathering in Wireless Sensor Networks), Dec, 2010.

Xiaotian Yin (Title: Discrete Metric Designs and Discrete Tangent Bundles: from Surfaces to 3-Manifolds), August, 2010.

Maohua Lu (Title: Efficient Metadata Update Techniques for Storage Systems), August, 2010.

Rupa Krishnan (Title: Improving Network Performance through Measurement Based Analysis), August, 2010.

Joondong Kim (Title: Algorithms for Optimizing Multiple Routes Through Constrained Geometric Domains), July 27, 2010.

Jingyu Zou (Title: Geometric Algorithms for Capacity Estimation and Routing in Air Traffic Management), July 20, 2010.

Mahmoud Al-Ayyoub (Title: Dynamic Spectrum Allocation in Cellular Networks), May, 2010.

Rik Sarkar (Title: Geometric Abstractions for Information Processing in Sensor Networks), May, 2010.

Sol Lederer (Title: Localization and Location Certification in Sensor Networks), December, 2009.

Ashish Raniwala (Title: Architecture and Protocols for a High-Performance, Secure IEEE 802.11-based Wireless Mesh Network), August, 2009.

Ritesh Maheshwari (Title: Medium Access and Security Protocols in Wireless Multi-hop Networks), April, 2009.

Anand Prabhu Subramanian (Title: Improving Capacity and Connectivity in Wireless Access Networks), May, 2009.

Yue Wang (Title: Geometry Discovery With Connectivity Information And Applications In Sensor Networks), March, 2009.

Wei Li (Title: Binary Analysis and Instrumentation Techniques for Enhancing Software Security), August, 2008.

Vinay Pai (Title: Incentive Mechanisms for Peer-to-peer Streaming), August, 2008.

Jin Miao (Title: General Surface Geometric Structures and Their Applications), June, 2008.

Xianjin Zhu (Title: Collaborative Information Processing and Query Evaluation in Wireless Sensor Networks), May, 2008.

Eli Packer (Title: Robust Geometric Computing and Optimal Visibility Coverage), May, 2008.

Chi Ma (Thesis title: Energy Efficiency Issues in Wireless Network Routing and Scheduling), August, 2007.

Bin Tang (Thesis title: Data Caching in Ad Hoc and Sensor Networks), August, 2007.

Deng Pan (Thesis title: Scheduling Algorithms for High Performance Packet Switches), August, 2007.

Ming Ma (Thesis title: Self-Adaptive, Scalable and Energy Efficient Algorithms for Unat-

tended Sensor Networks), June, 2007.

Valentin Polishchuk (Thesis title: Thick Non-Crossing Paths and Minimum-Cost Continuous Flows in Geometric Domains), June, 2007.

Zongheng Zhou (Thesis title: Improve the Energy Efficiency and Performance of Sensor and RFID Networks by Exploiting Spatial Redundancy), Sep 2006.

Ph.D thesis proposal committee member:

Giordano Fusco (Title: Efficient resource allocation for cellular networks), Feb, 2011.

Jui-Hao Chiang (Title: Optimization Techniques for Memory Virtualization-based Resource Management), November, 2011.

Jennia Hizver (Title: Continuous Monitoring of Kernel Data Structures Using Virtual Machine State Introspection), November, 2011.

Khuong Vu (Title: High Order Geometric Structures and Applications in Sensor Networks), July, 2011.

Junghun Ryu (Title: Design and Analysis of Structured Graph based Wireless Sensor Network), May, 2011.

Dengpan Zhou (Title: Distributed Algorithms for Online Coordination in Wireless Sensor Networks), May, 2011.

Julia EunJu Nam (Title: Exploratory Visual Analytics in High Dimensional Space), August, 2010.

Xiaotian Yin (Title: Metric Design and Vector Field Design on Surfaces and 3-Manifolds), May, 2010.

Wenbin Zhang (Title: News Based Forecasting and Modeling), December, 2009.

Maohua Lu (Title: Efficient Metadata Update Techniques for Storage Systems), October, 2009.

Xi Deng (Title: Construction of network platform for hardware aware network experiments and the study of processing affected realtime network applications), September, 2009.

Shung Han Cho (Title: Multiple Object Tracking and Association for Mobile Sensors), July, 2009.

Sol Lederer (Title: Localization and Location Verification in Sensor Networks), June, 2009.

Mahmoud Al-Ayyoub, (Title: Spectrum Auctions), April, 2009.

Rik Sarkar (Title: Geometric Abstractions for Information Processing in Sensor Networks), July, 2008.

Rupa Krishnan (Title: Measurement based analysis and development of Routing Protocols in Wired and Wireless Networks), June, 2008.

Vinay Pai (Title: Incentive Mechanisms for Peer-to-peer Streaming), April, 2008.

Ritesh Maheshwari (Title: Medium Access and Security Protocols in Wireless Multi-hop Networks), Dec, 2007.

Anand Prabhu Subramanian (Title: Improving Capacity and Connectivity in Wireless Access Networks), Dec, 2007.

Xianjin Zhu (Title: Collaborative Information Processing and Query Evaluation in Wireless Sensor Networks), Dec, 2007.

Yue Wang (Title: Topology Discovery with Connectivity Information and Applications in Sensor Networks), Oct, 2007.

Miao Zhao (Thesis title: Cross-layer Optimization and Design in Wireless Networks), September, 2007.

Chi Ma (Thesis title: Energy Efficiency Issues in Wireless Network Routing and Scheduling), Feb, 2007.

Bin Tang (Thesis title: Data Caching in Ad Hoc and Sensor Networks), Dec 2006.

Haodong Hu (Thesis title: Cache-Oblivious Data Structures for Massive Data Sets), Nov 2006.

Zongheng Zhou (Thesis title: Improve the Energy Efficiency and Performance of Sensor and RFID Networks by Exploiting Spatial Redundancy), May 2006.

Ashish Raniwala (Thesis title: Capacity, Fairness, and Security Issues in Enterprise Wireless Mesh Networks), Oct, 2005.

Research Proficiency Exam (RPE) committee member:

Yang Zhao (Title: A Survey On Surface Mapping Methods and Its Application In Medical Image Processing), September, 2011.

Xiang Gao (Title: Targeted On-line Advertising), September, 2011.

Min Zhang (Title: A Survey on Computational Conformal Geometry), September, 2011.

Rui Shi (Title: Computational Conformal Geometry and it's Applications in Medical Image, Graphics and Wireless Sensor Network), September 2011.

Siming Li (Title: A Survey on Triangulation Schemes for Moving Points in the Plane and their Applications), September, 2011.

Dzejla Medjedovic (Title: External Memory Dictionaries and Sorting Algorithms with Different-Sized Atomic Keys), August, 2010.

Fatima Zarinni (Title: Improving Efficiency and Fairness in High Data Rate Wireless Networks), February, 2010;

Jennia Hivzer (Title: Virtualization-based Security Technology and Its Application to Payment Card Industry (PCI) Systems), October, 2009;

Irina Kostitsyna (Title: Static and Dynamic Partitioning Problems), September, 2009;

Ruirui Jiang (Title: Computational Conformal Geometry and its Applications), September, 2009;

Akshay Patil (Title: Homophily Based Link Prediction in Social Networks), September, 2009;

Hui Kang (Title: A Localized Multi-Hop Desynchronization Algorithm for Wireless Sensor Networks), September, 2009;

Xiaoxiao Hou (Title: Data Preservation in Large Scale Wireless Sensor Networks), August, 2009.

Xiaomeng Ban (Title: Navigation in Complex Networks through Embedding in Latent Spaces), August, 2009.

Justin Lapre (Title: Leaky Sinks: Genetic Algorithm-based Routing and Wireless Sensor Networks), August, 2008.

Wenbin Zhang (Title: Financial Analysis Using News Data), July, 2008.

Yeongmi Jeon (Title: Semantic Analysis of News), July, 2008.

Julia Nam (Title: High Dimensional Visual Analytics), July, 2008.

Yao Chen (Title: Micropayment for Network Service), May, 2008.

Sandra Tinta (Title: Measurement-based Study of Packet Reordering), Jan, 2008.

Dengpan Zhou (Title: Opportunistic Processing and Query of Motion Trajectories in Sensor Networks), Dec, 2007.

Rik Sarkar (Title: Hierarchical Spatial Gossip for Multi-Resolution Representations in Sensor Networks), Nov, 2006.

Maohua Lu (Title: Challenges of Long-Term Digital Archiving: A Survey), Oct, 2006.

Girishkumar Sabhanani (Title: Geometric Algorithms for the Airspace Sectorization Problem), Sep, 2006.

Rupa Krishnan (Title: Link Characteristics-Aware Wireless Protocol Design), Sep, 2006.

Shibiao Lin (Title: A Survey on Solutions to Distributed Denial of Service Attacks), Sep, 2006.

Sol Lederer (Title: Collaborative Location Certification for Sensor Networks), Sep, 2006.

Anand Prabhu Subramanian (Title: Minimum-Interference Channel Assignment in Multi-Radio Wireless Mesh Networks), June, 2006.

M.S. thesis committee:

Rajendran Thirupugalsamy (Title: Activity Recognition Using WiFi Signatures From a Mobile Phone), May, 2010.

Aravind Akella (Title: Binary Streaming), May, 2010.

Goutham Meruva (Title: LFSM - A system to optimize the random write performance of FLASH memory), May, 2010.

Rajendran Thirupugalsamy (Title: Activity Recognition using WiFi Signatures), May, 2010.

Priya Thangaraj (Title: Scalable Wireless LAN Traffic Monitoring and Analysis), Dec, 2009.

Arvindhakshan Madhavan (Title: Computer Vision-based Robot Tracking and Navigation for the MINT Testbed), Dec, 2009.

Guruswamy Namasivayam (Title: Automatic Calibration of an Camera Array-based Robot Tracking System), Dec, 2009,

Amitabh Basu (Title: Distributed Localization by Noisy Distance and Angle Information), May 2006.