Zhenhui (Jessie) Li, Ph.D.

CONTACT Information College of Information Sciences and Technology

The Pennsylvania State University

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APPOINTMENTS

The Pennsylvania State University

Associate Professor (with tenure)
 Assistant Professor
 07/2017 - now
 08/2012 - 06/2017

• Haile Family Early Career Professorship

EDUCATION

University of Illinois at Urbana-Champaign

08/2007 - 08/2012

• Ph.D., Computer Science

• Master of Science, Computer Science, Degree conferred in May, 2010

• Advisor: Prof. Jiawei Han

Shanghai Jiao Tong University

09/2003 - 06/2007

• Bachelor of Engineering, Computer Science (ACM honored class)

The University of Hong Kong

09/2005 - 12/2005

• Exchange Student, Computer Science

RESEARCH INTERESTS I am generally interested in developing **data mining** techniques to analyze data on the space, such as trajectory data, urban data, and environmental data. I am extremely passionate about **interdisciplinary research**. My research projects are built upon close collaborations with animal scientists, social scientists, criminologists, and geoscientists. We aim to provide efficient, effective, and practical computational methods to address the real-world challenges in understanding spatial data.

BOOK CHAPTER

- 1. Zhenhui Li, "Spatiotemporal Pattern Mining: Algorithms and Applications", in Charu Aggarwal and Jiawei Han (ed.), Frequent Pattern Mining, Springer, September 2014.
- 2. Zhenhui Li and Jiawei Han, "Mining Periodicity from Dynamic and Incomplete Spatiotemporal Data", in Wesley W. Chu (ed.), Data Mining and Knowledge Discovery for Big Data, pp. 41-82, Springer, 2014.

JOURNAL PUBLICATIONS

- 1. Zhenhui Li, Cheng You, Matthew Gonzales, Anna K. Wendt, Fei Wu, and Susan L. Brantley, "Searching for Anomalous Methane in Groundwater around Shale Gas Wells", **Journal of Contaminant Hydrology** 195 (2016): 23-30.
- Zhenhui Li, Jingjing Wang, and Jiawei Han, "ePeriodicity: Mining Event Periodicity from Incomplete Observations", IEEE Transactions on Knowledge and Data Engineering (TKDE) 27.5 (2015): 1219-1232.
- 3. Zhenhui Li, Bolin Ding, Fei Wu, Tobias Kin Hou Lei, Roland Kays, and Margaret Crofoot, "Attraction and Avoidance Detection from Movements", **PVLDB** 7(3): 157-168, 2014. Also, in Proceedings of the 2014 International Conference on Very Large Data Bases (VLDB'14), Hangzhou, China, Sept. 2014.
- 4. Zhenhui Li, Jiawei Han, Bolin Ding, and Roland Kays, "Mining Periodic Behaviors of Object Movements for Animal and Biological Sustainability Studies", Data Mining and Knowledge Discovery (**DAMI**), Volume 24, Issue 2 (2012), Page 355-386.

5. Zhenhui Li, Jiawei Han, Ming Ji, Lu-An Tang, Yintao Yu, Bolin Ding, Jae-Gil Lee, and Roland Kays, "MoveMine: Mining Moving Object Data for Discovery of Animal Movement Patterns", ACM Transactions on Intelligent Systems and Technology (TIST) (Special Issue on Computational Sustainability), 2(4):37, 2011.

CONFERENCE
PUBLICATIONS
(REVERSE
CHRONOLOGICAL)

(*First author as my supervised graduate student)

- Guanjie Zheng*, Susan Brantley, Thomas Lauvaux, and Zhenhui Li, "Contextual Spatial Outlier Detection with Metric Learning", in Proceedings of the 2017 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'17), Halifax, Nova Scotia, Aug. 2017. (Acceptance rate: 85/396=21.5%, applied data science track)
- Fei Wu*, Pranay Anchuri, and Zhenhui Li, "Structural Event Detection from Log Messages", in Proceedings of the 2017 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'17), Halifax, Nova Scotia, Aug. 2017. (Acceptance rate: 131/748=17.5%, research track)
- 3. Zhenhui Li, Guanjie Zheng, Amal Agarwal, Lingzhou Xue, and Thomas Lauvaux, "Discovery of Causal Time Intervals", in Proceedings of 2017 SIAM International Conference on Data Mining (SDM'17), Houston, TX, May 2017. (Acceptance rate: 26%)
- Fei Wu*, Hongjian Wang, Zhenhui Li, "Interpreting Traffic Dynamics using Ubiquitous Urban Data", in Proceedings of the 24th ACM International Conference on Advances in Geographical Information Systems (SIGSPATIAL'16), Burlingame, CA, Nov. 2016.
- 5. Hongjian Wang*, Yu-Hsuan Kuo, Daniel Kifer, Zhenhui Li, "A Simple Baseline for Travel Time Estimation using Large-Scale Trip Data", in Proceedings of the 24th ACM International Conference on Advances in Geographical Information Systems (SIGSPATIAL'16), Burlingame, CA, Nov. 2016.
- 6. Fei Wu*, Zhenhui Li, "Where Did You Go: Personalized Annotation of Mobility Records", in Proceedings of the 2016 International Conference on Information and Knowledge Management (CIKM'16), Indianapolis, IN, Oct. 2016. (Long paper, acceptance rate: 165/935 =17.6%)
- 7. Hongjian Wang*, Daniel Kifer, Corina Graif, Zhenhui Li, "Crime Rate Inference with Big Data", in Proceedings of the 2016 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'16), San Francisco, CA, Aug. 2016. (Acceptance rate: 20%, applied data science track)
- 8. Fei Wu*, Zhenhui Li, Wang-Chien Lee, Hongjian Wang, Zhuojie Huang, "Semantic Annotation of Mobility Data using Social Media", in Proceedings of the 2015 International World Wide Web Conference (**WWW'15**), Florence, Italy, May 2015. (Acceptance rate: 131/929 = 14.1%)
- Hongjian Wang*, Zhenhui Li, Wang-Chien Lee, "PGT: Measuring Mobility Relationship Using Personal, Global and Temporal Factors", in Proceedings of the of 2014 IEEE International Conference on Data Mining (ICDM'14), Shenzhen, China, Dec. 2014. (Regular paper, acceptance rate: 71/727 = 9.7%)
- 10. Peifeng Yin, Mao Ye, Wang-Chien Lee, and Zhenhui Li, "Mining GPS Data for Trajectory Recommendation", Proceedings of the 2014 Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD'14**), Tainan, Taiwan, May 2014. (Acceptance rate: 61/371=16.4%)

- 11. Mo Yu, Wenjun Si, Guojie Song, Zhenhui Li, John Yen, "Who were you talking to Mining interpersonal relationships from cellphone network data", in Proceedings of the of 2014 International Conference on Advances in Social Network Analysis and Mining (ASONAM'14), Beijing, China, August, 2014.
- 12. Zhenhui Li, Fei Wu, and Margaret Crofoot, "Mining Following Relationships in Movement Data", in Proceedings of the 2013 IEEE International Conference on Data Mining (ICDM'13), Dallas, TX, Dec. 2013. (Regular paper, acceptance rate: 94/809=11.6%)
- Zhaohui Wu, Zhenhui Li, Prasenjit Mitra, C. Lee Giles, "Searching Online Book Documents and Analyzing Book Citations", in Proceedings of the of 2013 International Conference on Information and Knowledge Management (CIKM'13), San Francisco, CA, Oct. 2013. (Acceptance rate: 106/848=12.5%)
- 14. Zhaohui Wu, Sujatha Das, Zhenhui Li, Prasenjit Mitra, and C. Lee Giles, "Searching Online Book Documents and Analyzing Book Citations", in Proceedings of the of 2013 ACM Symposium on Document Engineering (**DocEng'13**), September 10-13, Florence, Italy.
- 15. Ariel Fuxman, Anitha Kannan, Zhenhui Li, and Panayiotis Tsaparas, "Enabling Direct Interest-Aware Audience Selection", in Proceedings of the of 2012 International Conference on Information and Knowledge Management (CIKM'12), Maui, Hawaii, Oct. 2012. (Full paper, acceptance rate: 146/1088=13.4%)
- 16. Zhenhui Li, Jingjing Wang, and Jiawei Han, "Mining Event Periodicity for Incomplete Observations", in Proceedings of the of 2012 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD'12**), Beijing, China, Aug. 2012. (Acceptance rate: 133/755=17.6%)
- 17. Quanquan Gu, Marina Danilevsky, Zhenhui Li, and Jiawei Han, "Locality Preserving Feature Learning", in Proceedings of the 2012 International Conference on Artificial Intelligence and Statistics (AISTAT'12), La Palma, Canary Islands, April 2012. (Acceptance rate $\approx 33.5\%$)
- 18. Quanquan Gu, Zhenhui Li, Jiawei Han, "Correlated Multi-Label Feature Selection", in Proceedings of the 20th ACM Conference on Information and Knowledge Management (CIKM'11), Glasgow, Scotland, UK, October 2011. (Acceptance rate: 15%)
- 19. Quanquan Gu, Zhenhui Li, and Jiawei Han, "Linear Discriminant Dimensionality Reduction", in Proceedings of the 2011 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD'11), Athens, Greece, Sept. 2011. (Acceptance rate: 121/599 = 20%)
- 20. Zhenhui Li, Cindy Xide Lin, Bolin Ding, and Jiawei Han, "Mining Significant Time Intervals for Relationship Detection", in Proceedings of the 2011 International Symp. on Spatial and Temporal Databases (SSTD'11), Minneapolis, MN, Aug. 2011. (Acceptance rate: 38%)
- 21. Quanquan Gu, Zhenhui Li, and Jiawei Han, "Learning a Kernel for Multi-Task Clustering", in Proceedings of the 2011 AAAI Conference on Artificial Intelligence (AAAI'11), San Francisco, CA, Aug. 2011. (Acceptance rate: 242/975 = 24.8%)
- 22. Xiao Yu, Ang Pan, Lu-An Tang, Zhenhui Li and Jiawei Han, "Geo-Friends Recommendation in GPS-based Cyber-Physical Social Network", in Proceedings of the 2011 International Conference on Advances in Social Network Analysis and Mining (ASONAM'11), Kaohsiung, Taiwan, July 2011. (Acceptance rate: 25%)

- 23. Quanquan Gu, Zhenhui Li and Jiawei Han, "Joint Feature Selection and Subspace Learning", in Proceedings of the 2011 International Joint Conference on Artificial Intelligence (IJCAI'11), Barcelona, Spain, July 2011. (Acceptance rate: 227/1325 = 17%)
- 24. Quanquan Gu, Zhenhui Li, and Jiawei Han, "Generalized Fisher Score for Feature Selection", in Proceedings of the 2011 International Conference on Uncertainty in Artificial Intelligence (UAI'11), Barcelona, Spain, July 2011. (Acceptance rate: 34%)
- 25. Bolin Ding, Marianne Winslett, Jiawei Han, and Zhenhui Li, "Differentially Private Data Cube: Optimizing Noise Source and Consistency", in Proceedings of the 2011 ACM SIGMOD International Conference on Management of Data (SIGMOD'11), Athens, Greece, June 2011. (Acceptance rate: 87/375 = 23.2%)
- 26. Zhenhui Li, Bolin Ding, Jiawei Han, and Roland Kays, "Swarm: Mining Relaxed Temporal Moving Object Clusters", in Proceedings of the 2010 International Conference on Very Large Data Bases (VLDB'10), Singapore, Sept. 2010. (Acceptance rate: 84/478 = 17.6%)
- 27. Zhenhui Li, Bolin Ding, Jiawei Han, and Roland Kays, "Mining Periodic Behaviors for Moving Objects", in Proceedings of the 2010 ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD'10**), Washington D.C., July 2010. (Full paper, acceptance rate: 77/578 = 13.3%)
- 28. Zhenhui Li, Ding Zhou, YunFang Juan, and Jiawei Han, "Keyword Extraction for Social Snippets", (poster paper) in Proceedings of the 2010 International World Wide Web Conference (**WWW'10**), Raleigh, NC, April 2010.
- 29. Zhenhui Li, Jae-Gil Lee, Xiaolei Li, and Jiawei Han, "Incremental Clustering for Trajectories", in Proceedings of the 2010 International Conference on Database Systems for Advanced Applications (**DASFAA'10**), Tsukuba, Japan, April 2010. (Acceptance rate: 55/237 = 23.2%)
- Xiaolei Li, Zhenhui Li, Jiawei Han, and Jae-Gil Lee, "Temporal Outlier Detection in Vehicle Traffic Data", in Proceedings of the 2009 International Conference on Data Engineering (ICDE'09), Shanghai, China, Mar. 2009. (Acceptance rate: 150/554 = 27.1%)

RESEARCH System Demo

- Fei Wu*, Zhenhui Li, Wang-Chien Lee, Hongjian Wang, Zhuojie Huang, "SemMobi: A Semantic Annotation System for Mobility Data", (system demo), in Proc. 2015 Int. World Wide Web Conf. (**WWW'15**), Florence, Italy, May 2015.
- Fei Wu*, Tobias Kin Hou Lei, Zhenhui Li, and Jiawei Han, "MoveMine 2.0: Mining Object Relationships from Movement Data", (system demo), Proc. 2014 Int. Conf. on Very Large Data Bases (VLDB'14/PVLDB), Hangzhou, China, Sept. 2014.
- Zhenhui Li, Ming Ji, Jae-Gil Lee, Lu-An Tang, Jiawei Han, Roland Kays, "MoveMine: Mining Moving Object Databases", (system demo), Proc. 2010 ACM SIGMOD Int. Conf. on Management of Data (**SIGMOD'10**), Indianapolis, Indiana, June 2010. (Acceptance rate: 35/95 = 36.8%)

Grants

- Zhenhui Li (Single PI), National Science Foundation (NSF) (IIS Award # 1652525) "CAREER: Cross-Domain Urban Data Mining." \$497,272 (2017-2022).
- Susan Brantley (PI, Geoscience, Penn State) and **Zhenhui Li (Co-PI)**, National Science Foundation (NSF) (IIS Award # 1639150) "INSPIRE: A Data-Driven Approach toward Exploring Natural and Anthropogenic Methane Emissions in Regions of Shale Gas Development." \$1,000,000 (2016-2019).

- Zhenhui Li (Single PI), National Science Foundation (NSF) (IIS Award # 1618448) "III: Small: Semantic Trajectory Mining with Contexts." \$499,057 (2016-2019).
- Zhenhui Li (PI), Daniel Kifer (Co-PI, Computer Science, Penn State), Corina Graif (Co-PI, Criminology, Penn State), National Science Foundation (NSF) (CNS Award # 1544455) "EAGER: Toward Transparency in Public Policy via Privacy-Enhanced Social Flow Analysis with Applications to Ecological Networks and Crime." \$260.991 (2015-2017).
- Zhenhui Li (PI), Susan Brantley (Co-PI, Geoscience, Penn State), General Electric Fund for the Center for Collaborative Research on Intelligent Natural Gas Supply Systems, "Data Mining for Sustainable Water Systems." \$277,416 (2015-2016).
- Stephen Matthews (PI, Sociology, Penn State), Shannon Zenk (PI, Health Systems Science, UIC), **Zhenhui Li (Co-I)**, National Institutes of Health (NIH Award # R21CA195543) "Activity Space and Measuring Environmental Exposure in Behavioral Research." \$389,624 (2015-2017).
- Zhenhui Li (PI), Daniel Kifer (Co-PI), IST Seed Grant, "Mining and Protecting Human Location Traces," Total requested: \$9,315. (January 2015 May 2015).
- Zhenhui Li (PI), Vikash Gayah (Co-PI), IST Seed Grant, "A Data-Driven Approach for Intelligent Transportation Systems," \$8,821. (January 2014 May 2014).
- Zhenhui Li (PI), IST Teaching Grant, "A Cross-Courses Real Data Platform to Facilitate Stage Learning," \$6,000 (May 2014 December 2014).

Honors and Awards

- NSF CAREER Award (2017).
- Haile Family Early Career Professorship in Information Sciences and Technology at Penn State (2017-2020).
- Junior Faculty Excellence in Research Award, Penn State IST (2017).
- George J. McMurtry Junior Faculty Excellence in Teaching and Learning Award, Penn State IST (2017).
- Multiple Conference Travel Grants (2010-2012).
- Data Mining Research Awards Gold, Data Mining Group, UIUC (Spring 2010).
- Data Mining Research Awards Silver, Data Mining Group, UIUC (Fall 2009).
- ACM International Collegiate Programming Regional Contest (ACM/ICPC) Seoul: 4th place and Best Female Team (2004).
- ACM International Collegiate Programming Regional Contest (ACM/ICPC) Beijing: 15th place and Best Female Team (2004).
- Excellent Student (top 10%) in Shanghai Jiao Tong University (2004).
- Excellent Academic Scholarship of Shanghai Jiao Tong University (2004 and 2005).
- First Prize, Olympiad in Informatics, Hunan Province, China (2001 and 2002).

TEACHING EXPERIENCE

IST557 Data Mining: Techniques and Applications

08/2013 - now

Penn State University

- Class size: 20-40 graduate students.
- Objective: (1) teach the basic data mining techniques; (2) guide the students to find solutions from literature; and (3) provide hands-on experience to work on real-world data mining problems.
- Taught in fall'13, fall'14, fall'15, fall'16

IST210 Organization of Data

08/2012 - now

Penn State University

Instructor

Instructor

• Class size: 40-50 undergraduate students.

- Objective: (1) teach the basic database knowledge including ER diagram, database design, and SQL; (2) teach students web programming including HTML and PHP; (3) advise students to implement a real database system with a web interface.
- Taught in fall'12, spring'13, fall'13 (2 sections), fall'14, spring'16 (2 sections)

Last updated: July, 2017

Data Sciences Summer Institute

06/2010 - 07/2010

Teaching Assistant

University of Illinois at Urbana-Champaign

Introduction to Data Mining

08/2008 - 12/2008

Teaching Assistant

University of Illinois at Urbana-Champaign

Professional Experience

Univ. of Illinois at Urbana-Champaign

08/2007 - 07/2012

Research Assistant

Urbana, IL, USA

• My research has been focused on new methodologies for detecting regularities in movement and modeling social relationships based on geo-locations. Results have been published in major conferences and journals. I also lead a team to successfully develop an online system, MoveMine, which integrates our recent works on spatiotemporal mining.

Search Lab, Microsoft Research

05/2011 - 08/2011

Intern

Mountain View, CA, USA

 Research on understanding users' intent from long-term query log to improve personalized search. The project requires to deal with huge amount of data using MapReduce. We have developed methods that can efficiently group users' queries into corresponding clusters based on the interests and tasks.

Ads Team, Facebook Inc.

05/2009 - 08/2009

Intern

Palo Alto, CA, USA

Project on keyword extraction for advertisement targeting. This project involves
with designing evaluation standards, testing various statistical methods, and computing
big data using Hadoop system.

Search team, Yahoo! Inc.

05/2008 - 08/2008

Intern

Santa Clara, CA, USA

• Project on developing new features to better retrieve navigational webpages. Tasks include designing guidelines to generate labeled datasets for evaluation, extracting features of navigational webpages, and applying classification models.

Google Inc.

07/2006 - 09/2006

Intern

Beijing, China

• Project on query spam detection. My task is to analyze characteristics of machinegenerated Chinese queries.

Shanghai Jiao Tong University

01/2006 - 06/2007

Research Assistant

Shanghai, China

- Research on probabilistic rank modeling for collaborative filtering.
- Project on designing features and applying statistical methods for email spam detection.

Talks and Presentations

Invited talks at external seminars and colloquia:

• "Toward Semantic Understanding of Spatial Trajectories":

University of Southern California, Los Angeles, CA, December, 2016.

Georgia Institute of Technology, Atlanta, GA, November 2016.

University of Minnesota Twin Cities, Minneapolis, Minnesota, November 2016. Carnegie Mellon University, Pittsburgh, PA, October 2016.

Virginia Tech, Falls Church, VA, October 2016.

Zhejiang University, Hangzhou, China, June 2016.

- "Data Mining to Assess Environmental Impacts from Shale Gas Development": NASA, Mountain View, CA, August 2016.
- "Mining Mobility Relationship from Location Traces":

IBM Research, Shanghai, China, June 2014.

Microsoft Research Asia, Beijing, China, June 2014.

IBM Research, Beijing, China, June 2014. Tsinghua University, Beijing, China, June 2014 Shanghai Jiao Tong University, Shanghai, China, May 2014. ShanghaiTech University, Shanghai, China, May 2014. Temple University, Philadelphia, PA, April 2014.

Tutorials at conferences:

- Zhenhui Li and Jiawei Han, "Trajectory Data Mining", 2016 IEEE International Conference on Big Data, Washington D.C., December 2016.
- Zhenhui Li, "Mining Animal Relationships from Movement Traces", The Symposium on Animal Movement and the Environment, North Carolina Museum of Natural Sciences, Raleigh, NC, May 2014.
- Jiawei Han, Zhenhui Li, and Lu-An Tang, "Mining Moving Object, Trajectory and Traffic Data", 2010 Int. Conference on Database Systems for Advanced Applications, Tsukuba, Japan, April 2010.

Plenary talks and keynotes at conferences and workshops:

- "Toward Semantic Understanding of Mobility Data", keynote, Workshop on Urban Computing in Conjunction with KDD'16 Conference, San Francisco, CA, August 2016.
- "A Data-driven Approach to Evaluate Environmental Impacts of Shale-gas Drilling", plenary talk, Shale Network Workshop, Penn State, State College, PA, May 2016.
- "Mining Mobility Relationship from Location Traces", keynote, Workshop on Mobility Analytics from Spatial and Social Data in Conjunction with ICDM'15, Atlantic City, NJ, November 2015.
- "Data Mining for Water Quality Data", plenary talk, Shale Network Workshop, Penn State, State College, PA, May 2015.

Oral paper and poster presentations at conferences and workshops:

- "A Simple Baseline for Travel Time Estimation using Large-Scale Trip Data," SIGSPATIAL poster presentation, San Francisco, CA, November 2016.
- "Interpreting Traffic Dynamics using Ubiquitous Urban Data," SIGSPATIAL poster presentation, San Francisco, CA, November 2016.
- "Where Did You Go: Personalized Annotation of Mobility Records", CIKM paper presentation, Indianapolis, IN, November 2016.
- "Crime Rate Inference with Big Data", KDD poster presentation, San Francisco, CA, August 2016.
- "A New Technique to Search for Methane in Groundwater around Shale Gas Wells", Pennsylvania Groundwater Symposium, Penn State, State College, PA, May 2016.
- "Semantic Annotation of Mobility Data using Social Media", WWW paper presentation, Florence, May 2015.
- "Attraction and Avoidance Detection from Movements", VLDB paper presentation, Hangzhou, China, September 2014.
- "Mining Following Relationships in Movement Data", ICDM paper presentation, Dallas, TX, December 2013.
- "Mining Event Periodicity from Incomplete Observations", KDD paper presentation, Beijing, China, August 2012.
- "Joint Feature Selection and Subspace Learning", IJCAI paper presentation, Barcelona, Spain, July 2011.
- "Swarm: Mining Relaxed Temporal Moving Object Clusters", VLDB paper presentation, Singapore, Sept. 2010.
- "Mining Periodic Behaviors for Moving Objects", KDD paper presentation, Washington D.C., July 2010.

 "MoveMine: Mining Moving Object Databases", SIGMOD demo presentation, Indianapolis, Indiana, June 2010.

Professional Services

Journal Guest Editor:

 ACM Transactions on Intelligent Systems and Technology (ACM TIST) Special Issue on Urban Intelligence

Conference/Workshop Organizer:

- Co-Organizer and Program Co-Chair. The 6th International Workshop on Urban Computing (in conjunction with KDD'17).
- Senior Program Committee and Travel Award Co-Chair. Conference on Information and Knowledge Management (CIKM'17).
- Registration Co-Chair. ACM International Conference on Advances in Geographical Information Systems (SGSPATIAL'17).
- Co-Organizer and Program Co-Chair, The 5th International Workshop on Urban Computing (in conjunction with KDD'16).
- Co-Organizer. The 8th Workshop on Social Network Mining and Analysis (in conjunction with KDD'14).
- Co-Organizer. The first Workshop on Mobile Sensing, Mining and Visualization for Human Behavior Inference (in conjunction with PAKDD'14).

Journal Reviewer (a partial list):

- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- Data Mining and Knowledge Discovery (DAMI)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- International Journal of Geographical Information Science (IJGIS)
- World Wide Web Journal (WWWJ)
- Very Large DataBase Journal (VLDBJ)
- Knowledge and Information Systems (KAIS)
- Statistical Analysis and Data Mining (SAM)
- ACM Transactions on the Web
- Nature Scientific Reports
- GeoInformatica
- IEEE Transactions on Big Data

Conference Program Committee:

- ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD): 2013, 2014, 2015, 2016
- IEEE International Conference on Data Mining (ICDM): 2013, 2014, 2016
- SIAM Conference on Data Mining (SDM): 2013, 2014, 2016
- International Conference on Information and Knowledge Management (CIKM): 2013, 2014, 2015, 2016
- Pacific-Asia Conference Knowledge Discovery and Data Mining (PAKDD): 2013, 2014, 2015, 2016
- The Proceedings of the VLDB Endowment (PVLDB): 2018
- International Joint Conference Artificial Intelligence (IJCAI): 2013, 2015
- The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery (ECML/PKDD): 2017
- International Conference on Advances in Social Network Analysis and Mining (ASONAM): 2016
- International Conference on Distributed Computing Systems (ICDCS): 2017

Grant Proposal Review:

- NSF IIS Small, Ad-hoc Reviewer, 2017
- NSF Big Data, Panelist, 2016
- European Research Council (ERC), Ad-hoc Reviewer, 2016

- NSF CyberSEES, Panelist, 2014
- NSF CREST, Ad-hoc Reviewer, 2013
- NSF IIS Small, Panelist, 2013.

University Services

- IST 210 Course Committee, Chairperson. (September 2014 August 2017)
- Faculty Council Committee. (August 2015 July 2017)
- Faculty Annual Review Committee. (November 2016 May 2017)
- SIG Group of Computational Informatics, Chairperson. (May 2015 May 2017)
- Faculty Search Committee. (September 2015 July 2016)
- IST 510 Course Review Committee. (January 2016 June 2016)
- TA/LA Review Committee. (January 2016 June 2016)
- Graduate Recruiting Committee. (August 2013 August 2015)
- Undergraduate commencement. (May 2014, May 2015)
- Strategic Planning Committee for Undergraduate Education. (October 2013)
- IST 210 Course Review Committee. (August 2012 January 2013)

STUDENTS SUPERVISED

Ph.D. student advisees (all at Penn State):

- Wu, Fei (Aug 2012 present)
- Wang, Hongjian (Aug 2013 present)
- Zheng, Guanjie (Aug 2015 present)
- Tang, Xianfeng (Aug 2016 present)
- Kuo, Yu-Hsuan (co-advise with Daniel Kifer, Aug 2015 present)

On Ph.D. committee of (at Penn State otherwise noted):

- Allaho, Mohammad (defended in Oct 2014)
- Choudhury, Sagnik
- Coughlin, Daniel (defended in Nov 2014)
- Hua, Ting at Virginia Tech
- Huang, Wenyi (defended in June 2016)
- Kim, Eun-Kyeong
- Kuo, Yu-Hsuan
- Sushama, Karumanchi (defended in Apr 2016)
- Williams, Kyle (defended in June 2016)
- Wu, Yibo
- Ye, Jianbo
- Yuan, Dayu (defended in June 2013)
- Zheng, Saijing (defended in Feb 2016)

Supervised undergraduate students (all at Penn State):

- Bowman, Benjamin (Aug 2016 Dec 2016)
- Brown, Carson (Aug 2016 Dec 2016)
- Eppinger, Benjamin (May 2016 Dec 2016)
- Schneider, Rachelle (May 2016 present)