

PEIXIANG ZHAO

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Department of Computer Science
Florida State University
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Research Interest

- (a) Data and network sciences
- (b) Database systems
- (c) Graph mining and analytics
- (d) Data mining and applied machine learning
- (e) Big Data systems and analytics
- (f) Information and social network analysis

Education

University of Illinois at Urbana-Champaign Urbana IL., U.S. (Sept. 2007 – Sept. 2012)

- * Status: Ph.D., [Department of Computer Science](#)
- * Thesis: On querying large-scale information networks
- * Advisor: [Prof. Jiawei Han](#)

Chinese University of Hong Kong Hong Kong SAR, China (Sept. 2004 – Jul. 2007)

- * Status: Ph.D., [Department of Systems Engineering \(SEEM\)](#)
- * Thesis: Free tree-featured graph indexing and query processing
- * Advisor: [Prof. Jeffrey Xu Yu](#)

Peking University Beijing, China (Sept. 2001 – Jul. 2004)

- * Status: M.S., [Department of Computer Science](#)
- * Advisor: Prof. Ming Zhang

Peking University Beijing, China (Sept. 1997 – Jul. 2001)

- * Status: B.S., [Department of Computer Science](#)
- * Advisor: Prof. Dongqing Yang

Professional Experiences

Florida State University Tallahassee, FL (Aug. 2012 —)

- * Position: Assistant professor, [Department of Computer Science](#)

Microsoft Research Asia Beijing, China (May 2011 – Aug. 2011)

- * Position: Summer intern, Web search and data management group

Microsoft Research Redmond, WA (May 2010 – Aug. 2010)

- * Position: Summer intern, Sensing and energy research group

IBM Research Yorktown Heights, NY (Jun. 2009 – Aug. 2009)

- * Position: Summer intern, Data analytics research group

IBM Research Hawthorn, NY (May 2008 – Aug. 2008)

- * Position: Summer intern, Event-based systems group

Microsoft Research Asia Beijing, China (Oct. 2001 – Feb. 2002)

- * Position: Visiting student, Multimedia management, group

Honors and Awards

1. Air Force Office of Scientific Research (AFOSR) Young Investigator Award, 2018 – 2021
2. FSU Provost’s Travel Award, 2016
3. FSU Arts and Science Faculty Travel Award, 2015
4. FSU CRC (Council of Research and Creativity) First Year Assistant Professor Award, 2013
5. ACM SIGMOD Travel Grant Award, 2011
6. Data Mining Research Silver Award, 2011, UIUC
7. Data Mining Research Award, Honorable mention, 2010, UIUC
8. Best Teaching Assistant Award, 2006, CUHK, Hong Kong
9. Best Graduate Award, 2004, Peking University, Beijing
10. Excellent Master Thesis Award, 2004, Peking University, Beijing
11. Dean’s Award for Study Excellence, 2003, Peking University, Beijing
12. May 4th Scholarship, 2003, Peking University, Beijing
13. Kodak Fellowship, 2002, Peking University, Beijing
14. Tri-excellence Model Honor, 2002, Peking University, Beijing
15. Excellent Undergraduate Thesis Award, 2001, Peking University, Beijing

Funding (\approx \$734K IN TOTAL AS OF NOV. 2017)

1. Graphs at Your Fingertips: Managing and Summarizing Big Graphs. Sole-PI. AFOSR, AFOSR:YIP. \$450,000. 9/1/2018-8/31/2021.
2. Facilitating Graph Computation by Graph Sparsification. Sole-PI. NSF, CISE:IIS:III. \$200,000. 6/1/2017-5/31/2019.
3. Failure Prediction in Enterprise-scale Data for Danfoss Turbocor. Sole-PI. Danfoss Inc. \$60,843. 3/1/2017-2/28/2018.
4. FSU Provost’s Travel Award. Sole-PI. FSU. \$1,500. 2016.
5. FSU Arts and Science Faculty Travel Award. Sole-PI. FSU. \$1,500. 2015.
6. Summarizing Massive Information Networks. Sole-PI. FSU. \$20,000. 5/1/2013-8/31/2013.

Publication (* INDICATES ADVISEES UNDER MY DIRECT SUPERVISION)

1. Kaixian Yu, Tingting Zhao, **Peixiang Zhao**, and Jinfeng Zhang. Automatic Extraction of Relationship Information Using Grammatical Relationship Graph. *The 2nd International Workshop on Semantics-powered Data Analytics (BIBM-SEPDA’17)*. Kansas City, Missouri. Nov. 2017.
2. Esra Akabas*, **Peixiang Zhao**. Truss-based Community Search: a Truss-equivalence Based Indexing Approach. *The 43rd International Conference on Very Large Data Bases (VLDB’17)*. Munich, Germany. Aug. 2017.
3. Esra Akabas*, **Peixiang Zhao**. Attributed Graph Clustering: an Attribute-aware Graph Embedding Approach. *The 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM’17)*. Sydney, Australia. Aug. 2017.
4. Yongjiang Liang*, **Peixiang Zhao**. Similarity Search in Graph Databases: a Multi-layered Indexing Approach. *The 33rd International Conference on Data Engineering (ICDE’17)*. San Diego, California. Apr. 2017.
5. **Peixiang Zhao**. Similarity Search in Large-scale Graph Databases. *Handbook of Big Data Technologies*. Springer. 2017.

6. **Peixiang Zhao**, Charu Aggarwal, Gewen He*. Link Prediction in Graph Streams. *The 32nd International Conference on Data Engineering (ICDE'16)*. Helsinki, Finland. May 2016.
7. Charu Aggarwal, Gewen He*, **Peixiang Zhao**. Edge Classification in Networks. *The 32nd International Conference on Data Engineering (ICDE'16)*. Helsinki, Finland. May 2016.
8. Jianbin Huang, Xuejun Huangfu, Heli Sun, Hui Li, **Peixiang Zhao**, Hong Cheng, Qinbao Song. Backward Path Growth for Efficient Mobile Sequential Recommendation. *IEEE Transaction on Knowledge and Data Engineering (TKDE)*. Vol. 27-1, pp. 46-60. 2015.
9. **Peixiang Zhao**. gSparsify: Graph Motif Based Sparsification for Graph Clustering. *The 24th ACM International Conference on Information and Knowledge Management (CIKM'15)*. Melbourne, Australia. Oct. 2015.
10. Gewen He*, Albert Steppi, Jose Laborde, Anuj Srivastava, **Peixiang Zhao**, Jinfeng Zhang. RASS: a Web Server for RNA Alignment in the Joint Sequence-structure Space. *Nucleic Acids Research*. pp. 377-381. 2014.
11. Charu C. Aggarwal, **Peixiang Zhao**. Towards Graphical Models for Text Processing. *Knowledge and Information Systems (KAIS)*. Vol. 36-1, pp. 1-21, 2013.
12. **Peixiang Zhao**, Charu C. Aggarwal, Min Wang. gSketch: On Query Estimation in Graph Streams. *The 38th International Conference on Very Large Data Bases (VLDB'12)*. Istanbul, Turkey. Aug. 2012.
13. Xiao Yu, Yizhou Sun, **Peixiang Zhao**, Jiawei Han. Query-driven Discovery of Semantically Similar Substructures in Heterogeneous Networks. *The 18th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'12)*. Beijing, China. Aug. 2012.
14. Manish Gupta, **Peixiang Zhao**, Jiawei Han. Evaluating Event Credibility on Twitter. *2012 SIAM International Conference on Data Mining (SDM'12)*. Anaheim, California. Apr. 2012.
15. **Peixiang Zhao**, Xiaolei Li, Dong Xin, Jiawei Han. Graph Cube: On Warehousing and OLAP Multidimensional Networks. *ACM SIGMOD International Conference on Management of Data (SIGMOD'11)*. Athens, Greece. Jun. 2011.
16. Dimitrios Lymberopoulos, **Peixiang Zhao**, Arnd Christian König, Klaus Berberich, Jie Liu. Location-aware Click Prediction in Mobile Local Search. *The 20th ACM Conference on Information and Knowledge Management (CIKM'11)*. Glasgow, United Kingdom. Oct. 2011.
17. Klaus Berberich, Arnd Christian König, Dimitrios Lymberopoulos, **Peixiang Zhao**. Improving Local Search Ranking through External Logs. *The 34th Annual ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'11)*. Beijing, China. Jul. 2011.
18. **Peixiang Zhao**, Jiawei Han. On Graph Query Optimization in Large Networks. *The 36th International Conference on Very Large Data Bases (VLDB'10)*. Singapore. Sept. 2010.
19. Charu C. Aggarwal, **Peixiang Zhao**. Graphical Models for Text: A New Paradigm for Text Representation and Processing. *The 33rd Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'10)*. Geneva, Switzerland. Jul. 2010.
20. Heli Sun, Jianbin Huang, Jiawei Han, Hongbo Deng, **Peixiang Zhao**, Boqin Feng. gSkeleton-Clu: Density-based Network Clustering via Structure-Connected Tree Division or Agglomeration. *The International Conference on Data Mining (ICDM'10)*. Sydney, Australia. Dec. 2010.
21. **Peixiang Zhao**, Jiawei Han, Yizhou Sun. P-Rank: A Comprehensive Structural Similarity Measure over Information Networks. *The 18th ACM Conference on Information and Knowledge Management (CIKM'09)*. Hong Kong, China. Nov. 2009.

Publication (CONTINUED)

22. Yizhou Sun, Jiawei Han, **Peixiang Zhao**, Zhijun Yin, Hong Cheng, Tianyi Wu, RankClus: Integrating Clustering with Ranking for Heterogeneous Information Network Analysis. *The International Conference on Extended Data Base Technology (EDBT'09)*. Saint-Petersburg, Russia. Mar. 2009.
23. **Peixiang Zhao**, Jeffrey Xu Yu. Fast Frequent Free Tree Mining in Graph Databases. *World Wide Web Journal (WWW Journal)*. Vol. 11-1, pp. 71-92, Mar. 2008.
24. Yizhou Sun, Tianyi Wu, Hong Cheng, Jiawei Han, Xiaoxin Yin, **Peixiang Zhao**, BibNetMiner: Mining Bibliographic Information Networks. *ACM SIGMOD International Conference on Management of Data (SIGMOD'08)*. Vancouver, Canada. Jun. 2008.
25. **Peixiang Zhao**, Jeffrey Xu Yu, Philip S. Yu. Graph Indexing: Tree + Delta \geq Graph. *The 33rd International Conference on Very Large Data Bases (VLDB'07)*. Vienna, Austria. Sept. 2007.
26. **Peixiang Zhao** and Jeffrey Xu Yu. Closed Frequent Free Tree Mining in Graph Databases. *The Twelfth International Conference on Database Systems for Advanced Applications (DASFAA'07)*. Bangkok, Thailand. Jun. 2007.
27. **Peixiang Zhao** and Jeffrey Xu Yu. Fast Frequent Free Tree Mining in Graph Databases. *the IEEE International Conference on Data Mining (ICDM'06)*. Hong Kong, China. Dec. 2006.
28. **Peixiang Zhao**, Ming Zhang, Dongqing Yang and Shiwei Tang. Finding Hidden Semantics behind Reference Linkages: an Ontological Approach for Scientific Digital Libraries. *The Tenth International Conference on Database Systems for Advanced Applications (DASFAA'05)*. Beijing, China. Apr. 2005.
29. **Peixiang Zhao**, Ming Zhang, Dongqing Yang and Shiwei Tang. Understanding the Semantics in Reference Linkages: An Ontological Approach for Scientific Digital Libraries. *The Seventh International Conference on Asian Digital Libraries (ICADL'04)*. Shanghai, China. Dec. 2004.
30. Ming Zhang, Dongqing Yang, Zhihong Deng, Ying Feng, Wenqing Wang, **Peixiang Zhao**, Sai Wu, Shuan Wang and Shiwei Tang. PKUSpace: A Collaborative Platform for Scientific Research. *The Third International Conference on Web-based Learning (ICWL04)*. Beijing, China. Aug. 2004.

Patents

1. Dimitrios Lymberopoulos, Arnd Christian König, **Peixiang Zhao**, Klaus Berberich, Jie Liu. *Improving Local Search Ranking through External Logs*. US patent US patent filed as MS DOCKET 332725.01 by Microsoft Research. June 2011.
2. **Peixiang Zhao**, Charu C. Aggarwal and Min Wang. *Query Optimization over Graph Data Streams*. US patent filed as Docket YOR920080706US1 by IBM Research. July 2009.

Presentations and Invited Talks

1. *Truss-based Community Search: a Truss-equivalence Based Indexing Approach*
 - * VLDB conference talk. Munich, Germany. Aug. 2017.
2. *Similarity Search in Graph Databases: a Multi-layered Indexing Approach*
 - * IEEE ICDE conference talk. San Diego, California. Apr. 2017.
3. *Link Prediction in Graph Streams*
 - * IEEE ICDE conference talk. Helsinki, Finland. May 2016.
4. *Edge Classification in Networks*
 - * IEEE ICDE conference talk. Helsinki, Finland. May 2016.

Presentations and Invited Talks (CONTINUED)

8. *gSparsify: Graph Motif Based Sparsification for Graph Clustering*
 - * ACM CIKM conference talk. Melbourne, Australia. Oct. 2015.
9. *gSketch: On Query Estimation in Graph Streams*
 - * VLDB conference talk. Istanbul, Turkey, Aug. 2012.
10. *Querying and Online Analytical Processing in Large-scale Information Networks*
 - * Invited talk. Florida State University, Tallahassee, Florida, Mar. 2012.
 - * Invited talk. University of Kentucky, Lexington, Kentucky, Feb. 2012.
 - * Invited talk. University of California at Los Angeles, Los Angeles, California, Feb. 2012.
 - * Yahoo!-DAIS Seminar Talk, UIUC, Urbana, Illinois, Jan. 2012.
11. *Location-aware Click Prediction in Mobile Local Search*
 - * ACM CIKM conference talk. Glasgow, United Kingdom, Oct. 2011.
 - * Invited talk. Microsoft Research, Redmond, Washington, Aug. 2010.
12. *Graph Cube: On Warehousing and OLAP Multidimensional Networks*
 - * ACM SIGMOD conference talk. Athens, Greece, Jun. 2011.
 - * Invited talk. Microsoft Research Asia, Beijing, China, May 2011.
13. *On Graph Query Optimization in Large Networks*
 - * VLDB conference talk. Singapore, Sep. 2010.
 - * Invited talk. Microsoft Research, Redmond, Washington, May 2010.
14. *P-Rank: A Comprehensive Structural Similarity Measure over Information Networks*
 - * ACM CIKM conference talk. Hong Kong, China, Nov. 2009.
15. *Graph Indexing: Tree + Delta \geq Graph*
 - * Invited talk. IBM Research, Hawthorne, New York, May 2008.
 - * VLDB conference talk. Vienna, Austria, Sept. 2007.
 - * Yahoo!-DAIS Seminar Talk, UIUC, Urbana, Illinois, Aug. 2007.
16. *Closed Frequent Free Tree Mining in Graph Databases*
 - * DASFAA conference talk. Bangkok, Thailand, Jun. 2007.
17. *Fast Frequent Free Tree Mining in Graph Databases*
 - * ICDM conference talk. Hong Kong, China, Dec. 2006.
18. *Finding Hidden Semantics behind Reference Linkages*
 - * DASFAA conference talk. Beijing, China, Apr. 2006.

Teaching Experiences

1. Florida State University

Instructor

- * **COP5725 - Advanced Database Systems**

Spring 2017 (30 students), Spring 2016 (31 students), Spring 2015 (49 students), Spring 2014 (29 students), Spring 2013 (37 students).

- * **COP4710 - Introduction to Database Systems**

Fall 2017 (70 students), Fall 2016 (62 students), Fall 2015 (50 students), Fall 2014 (47 students), Fall 2013 (48 students), Fall 2012 (42 students).

Teaching Experiences (CONTINUED)

1. **Florida State University** Instructor
 - * **CIS4930 - Data Mining**
Spring 2017 (23 students), Spring 2016 (23 students).
2. **University of Illinois at Urbana-Champaign** Instructor
 - * **CS411 - Database Systems**
Fall 2017 (170 students).

Advisees

- * **Ph.D.:** Esra Akbas (female), Gewen He, Yongjiang Liang.
- * **M.S.:** Nkendirim Dockery (African American), Shashank Golla, David Lafontant (African American), Adam Stallard, Yilin Wang, Menghe Zhang (female).
- * **B.S.:** Ian Terry, Jennifer Yaboro (female).

Professional Activities and Academic Service

- * **Conference organizer**
 - Exhibit co-chair: ACM SIGMOD 2014.
- * **Conference technical program committee member**
 - PAKDD'18, KDD'17, CIKM'17, PAKDD'17, KDD'16, ICDM'16, PAKDD'16, HPGDMP'16, PAKDD'15, DISCS'15, AINA'15, ICDM'14, DASFAA'14, iiWAS'14, GDM'14, PAKDD'14, DASFAA'14, APWEB'14, CIKM'13, ICDE'13, PAKDD'13, GDM'13, GDM'12, GDM'11, APWEB'08.
- * **Journal reviewer**
 - ACM Transactions on Database Systems (TODS), VLDB Journal, ACM Transactions on Knowledge Discovery from Data (TKDD), Information Processing Letters, IEEE Transactions on Knowledge and Data Engineering (TKDE), Knowledge and Information Systems (KAIS), Journal of Data Mining and Knowledge Discovery (DAMI), Journal of Intelligent Information Systems (JIIS), Distributed and Parallel Databases.
- * **Panelist**
 - NSF CISE:IIS:III: 2014-2017.
- * **Department service**
 - CS Faculty recruitment committee, 2013–.
 - CS Faculty evaluation committee, 2012.
 - ACM programming contest co-advisor, 2012.
 - CS Expo chair, 2012 – 2013.
 - CS Graduate Curriculum committee, 2012–.
 - CS PhD Portfolio & Qualification committee, 2012–.

References

Reference upon request.