

CURRICULUM VITAE

Feifei Li

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Research Interests

Query processing in both streaming and relational database systems, management and indexing of large databases in general. Specifically, spatio-temporal database applications, stream and sensor databases, uncertain databases, query authentication and data privacy issues in data management.

Education

September 2002 - August 2007 Ph.D. in Computer Science, Computer Science Department, Boston University.

September 1998 - Jan 2002 B.S. in Computer Engineering, School of Computer Engineering, Nanyang Technological University, Singapore.

Awards

- Best Presenter Award, in research summer interns Seminar@Luch Series, IBM T.J. Watson Research Center, August, 2006.
- Best Paper Award, in 20th IEEE International Conference on Data Engineering(ICDE), March, 2004.

Professional Experience

- **Computer Science Department, Florida State University, Tallahassee, FL, USA**
Assistant Professor **Aug, 2007 - Present**
- **Database Research Group, Microsoft Research, Redmond, WA, USA**
Research Summer Intern **May, 2007 - August, 2007**
- **Database Management Research Department, AT&T Shannon Research Lab, Florham Park, NJ, USA**
Research Consultant **Since Sep, 2006**
- **Database Research Group, IBM T.J.Watson Research Center, Hawthorne, NY, USA**
Research Summer Intern **June, 2006 - September, 2006**
- **SQL Server Group, Microsoft, Redmond, WA, USA**
Summer Intern **June, 2005 - September, 2005**

Research Grant

1. "III:Small: Efficient Ranking and Aggregate Query Processing for Probabilistic Data", sole PI, NSF IIS Program, 09/09-09/12, \$328,831.
2. "CT-ISG: Collaborative Research: Towards Trustworthy Database Systems", PI, NSF Cyber Trust Program, 10/08-09/11, \$150,620.
3. Research Experience for Undergraduate (REU Supplement for the CT-ISG grant), PI, NSF, 06/09-09/11, \$12,000.
4. DoD 2009 IASP (Information Assurance Scholarship Program) Grant, co-PI, 08/09-08/10, \$46,977.

5. “Building Trustworthy Database Systems”, PI, FSU CRC Planning Grant, 12/01/07-11/30/08, \$12,000.
6. “Query Verification”, PI, FSU CRC First Year Assistant Professor Grant, 05/08-08/08, \$16,000.
7. “Ranking and Aggregate Query Processing for Large Scientific Data with Fuzzy Information”, Source: FSU Undergraduate Research Award, PI, Student: Justin DeBrabant, \$4,000, 2009.

Publications

Book Chapters

1. “Authenticated Index Structures for Outsourced Databases”, by **F. Li**, M. Hadjieleftheriou, G. Kollios, L. Reyzin, *Handbook of Database Security*, ISBN: 978-0-387-48532-4, Springer, November, 2007. Link: <http://www.springer.com/computer/security+and+cryptology/book/978-0-387-48532-4>
2. “Trip Planning Queries in Road Network Databases”, by **F. Li**, M. Hadjieleftheriou, G. Kollios, D. Cheng, S. H. Teng, *Encyclopedia of GIS*, ISBN: 978-0-387-30858-6 (Print), 978-0-387-35973-1 (Online), Springer, February, 2008. Link: <http://www.springerlink.com/content/h01539/>

Refereed Journals

1. The World in a Nutshell: Concise Range Queries, by K. Yi, X. Liang, **F. Li**, L. Chen. (To Appear) **IEEE Transaction on Knowledge and Data Engineering (TKDE)**.
2. Small Synopses for Group-By Query Verification on Outsourced Data Streams, by K. Yi, **F. Li**, G. Cormode, M. Hadjieleftheriou, G. Kollios, D. Srivastava. Vol. 34, No. 3, pages 1–42, 2009, **ACM Transactions on Database Systems (TODS)**.
3. Robust Approximate Aggregation in Sensor Data Management Systems, by J. Considine, M. Hadjieleftheriou, **F. Li**, J. Byers, G. Kollios. Vol. 34, No. 1, pages 1–35, 2009, **ACM Transactions on Database Systems (TODS)**.
4. Efficient Processing of Top-k Queries in Uncertain Databases with x-Relations, by K. Yi, **F. Li**, G. Kollios, D. Srivastava. Vol. 20, No. 12, pages 1669-1682, December, 2008, **IEEE Transaction on Knowledge and Data Engineering (TKDE)**.
5. Robust Aggregation in Sensor Networks, by G. Kollios, J. Byers, J. Considine, M. Hadjieleftheriou, and **F. Li**. **IEEE Data Engineering Bulletin**, Vol. 28, No. 1, March 2005.
6. Towards Building Logical Views of Websites, by Z. Liu, W. Ng, E. Lim, **F. Li**. **Data & Knowledge Engineering (DKE)**, Vol. 49, No 2, pages 197-222, May 2004, Elsevier. (Invited by WIDM 2002).

Refereed Conferences

1. Approximate String Search in Spatial Databases, by B. Yao, **F. Li**, M. Hadjieleftheriou, K. Hou, To Appear (Full Paper) In Proceedings of 26th IEEE International Conference on Data Engineering, (**IEEE ICDE 2010**, Acceptance rate: 12.5%), Long Beach, California, March 2010.
2. K Nearest Neighbor Queries and kNN-Joins in Large Relational Databases (Almost) for Free, by B. Yao, **F. Li**, P. Kumar, To Appear (Full Paper) In Proceedings of 26th IEEE International Conference on Data Engineering, (**IEEE ICDE 2010**, Acceptance rate: 12.5%), Long Beach, California, March 2010.
3. Ranking Distributed Probabilistic Data, by **F. Li**, K. Yi, J. Jestes, In Proceedings of 28th ACM SIGMOD International Conference on Management of Data (**ACM SIGMOD 2009**, pages 361-374, Acceptance rate: 63/430=14.7%), Providence, June 2009.

4. Semantics of Ranking Queries for Probabilistic Data and Expected Ranks, by G. Cormode, **F. Li**, K. Yi, (Full Paper) In Proceedings of 25th IEEE International Conference on Data Engineering (**IEEE ICDE2009**, Acceptance rate: 93/554, 16.8%), pages 305-316, Shanghai, China, April 2009.
5. Reverse Furthest Neighbors in Spatial Databases, by B. Yao, **F. Li**, P. Kumar, (Full Paper) In Proceedings of 25th IEEE International Conference on Data Engineering, (**IEEE ICDE 2009**, Acceptance rate: 93/554, 16.8%), pages 664-675, Shanghai, China, April 2009.
6. Improving Transaction-time DBMS Performance and Functionality, by D. Lomet, **F. Li**, (Full Paper) In Proceedings of 25th IEEE International Conference on Data Engineering, (**IEEE ICDE 2009**, Acceptance rate: 93/554, 16.8%), pages 581-591, Shanghai, China, April 2009.
7. The World in a Nutshell: Concise Range Queries, by K. Yi, X. Lian, **F. Li**, L. Chen, (Short Paper) In Proceedings of 25th IEEE International Conference on Data Engineering, (**IEEE ICDE 2009**, Short paper acceptance rate: $(93 \text{ long} + 57 \text{ short})/554=27\%$), pages 1179-1182, Shanghai, China, April 2009.
8. Finding Frequent Items in Probabilistic Data, by Q. Zhang, **F. Li**, K. Yi, In Proceedings of 27th ACM SIGMOD International Conference on Management of Data (**ACM SIGMOD 2008**, Acceptance rate: 78/435, 17.9%), pages 819-832, Vancouver, Canada, June 2008.
9. Randomized Synopses for Query Assurance on Data Streams, by K. Yi, **F. Li**, M. Hadjieleftheriou, D. Srivastava, G. Kollios, (Full Paper, Full Presentation) In Proceedings of 24th International Conference on Data Engineering (**IEEE ICDE 2008**, Acceptance rate: 75/617, 12.1%), pages 416-425, Cancun, Mexico, April 2008.
10. Efficient Processing of Top-k Queries in Uncertain Databases, by K. Yi, **F. Li**, D. Srivastava, G. Kollios, (Poster Paper) In Proceedings of 24th IEEE International Conference on Data Engineering (**IEEE ICDE 2008**, Poster paper acceptance rate: 31%), pages 1406-1408, Cancun, Mexico, April 2008.
11. Proof-Infused Streams: Enabling Authentication of Sliding Window Queries On Streams, by **F. Li**, K. Yi, M. Hadjieleftheriou, G. Kollios, In Proceedings of the 33rd International Conference on Very Large Databases(**VLDB 2007**, Acceptance rate: 91/538, 16.9%), pages 147-158, Vienna, Austria, September 2007.
12. Time Series Compressibility and Privacy, by S. Papadimitriou, **F. Li**, G. Kollios, P. S. Yu, In Proceedings of the 33rd International Conference on Very Large Databases (**VLDB 2007**, Acceptance rate: 91/538, 16.9%), pages 459-470, Vienna, Austria, September 2007.
13. Hiding in the Crowd: Privacy Preservation on Evolving Streams through Correlation Tracking, by **F. Li**, J. Sun, S. Papadimitriou, G. Mihaila, and I. Stanoi. In Proceedings of the 23rd IEEE International Conference on Data Engineering (**IEEE ICDE 2007**, Acceptance rate: 122/659, 18.5%), pages 686-695, Istanbul, Turkey, April 2007.
14. Dynamic Authenticated Index Structures for Outsourced Databases, by **F. Li**, M. Hadjieleftheriou, G. Kollios, and L. Reyzin. In Proceedings of the 2006 ACM SIGMOD International Conference on Management of Data (**ACM SIGMOD 2006**, Acceptance rate: 58/446, 13%), pages 121-132, Chicago, Illinois, USA, June 2006.
15. Characterizing and Exploiting Reference Locality in Data Stream Applications, by **F. Li**, C. Chang, G. Kollios, and A. Bestavros. In Proceedings of the 22nd IEEE International Conference on Data Engineering (**IEEE ICDE 2006**, Acceptance rate: 89/456, 19.5%), pages 81-92, Atlanta, Georgia, USA, April 2006.
16. On Trip Planning Queries in Spatial Databases, by **F. Li**, D. Cheng, M. Hadjieleftheriou, G. Kollios, and S.-H. Teng. In Proceedings of the 9th International Symposium on Spatial and

Temporal Databases (**SSTD 2005**, Acceptance rate: 28.7%), pages 273-290, Angra dos Reis, Brazil, August, 2005.

17. Approximate Aggregation Techniques for Sensor Databases, by J. Considine, **F. Li**, G. Kollios, and J. Byers. In Proceedings of the 20th IEEE International Conference on Data Engineering (**IEEE ICDE 2004**, Acceptance rate: 63/441, 14.3%), pages 449-460, Boston, MA, March 30 - April 2, 2004. **Best Paper Award**
18. Spatio-Temporal Aggregation Using Sketches, by Y. Tao, G. Kollios, J. Considine, **F. Li**, and D. Papadias. In Proceedings of the 20th IEEE International Conference on Data Engineering (**IEEE ICDE 2004**, Acceptance rate: 63/441, 14.3%), pages 214-226, Boston, MA, March 30 - April 2, 2004.
19. WICCAP Data Model: Mapping Physical Websites to Logical Views, by Z. Liu, **F. Li**, and W. Ng. In Proceedings of the 21st International Conference on Conceptual Modeling (**ER 2002**, Acceptance rate: 24%), pages 120-134, Tampere, Finland, October 8-10, 2002. Springer.
20. Web Information Collection, Collaging and Programming, by **F. Li**, Z. Liu, Y. Huang, and W. Ng. In Proceedings of the 3rd IEEE International Conference on Information, Communications & Signal Processing (**IEEE ICICS 2001**, Acceptance rate:?), Singapore, October 15-18, 2001.

Refereed Workshops

1. A Visual Tool for Building Logical Data Models of Websites, by Z. Liu, W. Ng, **F. Li**, and E. Lim. In Proceedings of the Fourth International Workshop on Web Information and Data Management (**WIDM02**), in conjunction with the Eleventh International Conference on Information and Knowledge Management (CIKM2002), pages 92-95, McLean, Virginia, November 4-9, 2002.
2. An Information Concierge for the Web, by **F. Li**, Z. Liu, Y. Huang, and W. Ng. In Proceedings of the First International Workshop on Internet Bots: Systems and Applications (**INBOSA 2001**), in conjunction with the 12th International Conference on Database and Expert System Applications (**DEXA 2001**), pages 672-676, Munich, Germany, September 3-8, 2001.

Technical Reports

1. Authenticated Index Structures for Aggregation Queries in Outsourced Databases, by **F. Li**, M. Hadjieleftheriou, G. Kollios, and L. Reyzin, BUCS-TR-2006-011, May, 2006.
2. GreedyDual-Join: Locality-Aware Buffer Management for Approximate Join Processing Over Data Streams, by **F. Li**, C. Cheng, A. Bestavros, and G. Kollios, BUCS-TR-2004-028, April, 2004.

Professional Service

- Services
 1. Publicity Chair, MobiDE'09, 8th International ACM Workshop on Data Engineering for Wireless and Mobile Access (in conjunction with ACM SIGMOD/PODS 2009).
 2. Proceedings co-Chair, ICDE'10, IEEE 26th International Conference on Data Engineering.
- Invited Reviewers/Panelists for Grant Proposals:
 1. NSF: USA National Science Foundation.
 2. Hongkong RGC: Hongkong Research Grants Council.
- Program committees:

1. DASFAA'10, 15th International Conference on Database Systems for Advanced Applications (Demon Track), Tsukuba, Japan.
 2. MDM'10, 11th International Conference on Mobile Data Management, Kansas City, USA.
 3. QUESST'09, 1st SIGSPATIAL ACM GIS 2009 International Workshop on Querying and Mining Uncertain Spatio-Temporal Data, Seattle, WA, USA.
 4. MOUND'10, 2nd International Workshop on Management and mining Of UNcertain Data (in conjunction with ICDE 2010), Long Beach, CA, USA.
 5. ACM WIDM'09, ACM 11th International Workshop on Web Information and Data Management, co-located with CIKM'09.
 6. IEEE ICDM'09, IEEE 9th International Conference on Data Mining, Miami, USA.
 7. KMIS'09, International Conference on Knowledge Management and Information Sharing, Madeira, Portugal, 2009.
 8. ACM CIKM'09, ACM 18th Conference on Information and Knowledge Management, Hongkong, China.
 9. ACM MobiDE'09, 8th International ACM Workshop on Data Engineering for Wireless and Mobile Access.
 10. SDM'09, 9th SIAM International Conference on Data Mining, Sparks, Nevada, USA.
 11. PAKDD'09, 13th Pacific-Asia Conference on Knowledge Discovery and Data Engineering, Bangkok, Thailand.
 12. IEEE HPC'09, IEEE 11th International Conference on High Performance Computing and Communications, Seoul, Korea.
 13. IEEE ICDM'08, IEEE 8th International Conference on Data Mining, Pisa, Italy.
 14. ACM WIDM'08, ACM 10th International Workshop on Web Information and Data Management, co-located with CIKM'08.
 15. IEEE ICDE'09, IEEE 25th International Conference on Data Engineering, Shanghai, China.
 16. ACM CIKM'08, ACM 17th Conference on Information and Knowledge Management, Napa Valley, California.
 17. SSDBM'08, 20th International Conference on Scientific and Statistical Database Management, HongKong, China.
 18. IEEE NetDB'08, Networking Meets Databases, co-located with IEEE ICDE 2008 in Cancun, Mexico.
- Invited Reviewers for the following journals:
 1. ACM Transaction on Database Systems (ACM TODS).
 2. Data & Knowledge Engineering (DKE).
 3. IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE).
 4. IEEE Transactions on Parallel and Distributed Systems (IEEE TPDS).
 5. IEEE Transactions on Vehicular Technology (IEEE TVT).
 6. IEEE Transactions on Knowledge Discovery from Data (IEEE TKDD).
 7. Distributed and Parallel Databases (DAPD by Springer).
 8. International Journal of Information Security.
 9. Journal of Medical System.
 10. Journal of Computer Science and Technology.
 11. Very Large Database Journal (VLDBJ).

- 12. Knowledge and Information Systems.
- 13. Information Systems.
- 14. Statistical Analysis and Data Mining.
- External Reviewers for the following conferences: VLDB 2009, SIGMOD 2009, VLDB 2008, SSDBM 2008, NetDB 2008, ICDE 2008, ESA 2007, VLDB 2007, ICDE 2007, VLDB 2006, ICDE 2006, VLDB 2005.
- Conference Volunteers for the following conferences: ICDE2004, SSDBM 2003.

Teaching Experience

- Instructor, Computer Science Department, Florida State University, Fall, 2009.
Undergraduate Course: Theory and Structure of Databases, URL: <http://www.cs.fsu.edu/~lifeifei/COP4710/>.
- Instructor, Computer Science Department, Florida State University, Spring, 2009.
Graduate Course: Database Systems.
- Instructor, Computer Science Department, Florida State University, Fall, 2008.
Graduate Course: Advanced Topics in Data Management, URL: <http://www.cs.fsu.edu/~lifeifei/CIS5930/>.
- Instructor, Computer Science Department, Florida State University, Fall, 2008.
Undergraduate Course: Introduction to Databases, URL: <http://www.cs.fsu.edu/~lifeifei/COP4710/>.
- Instructor, Computer Science Department, Florida State University, Spring, 2008.
Undergraduate Course: Introduction to Databases, URL: <http://www.cs.fsu.edu/~lifeifei/COP4710/>.
- Instructor, Computer Science Department, Florida State University, Fall, 2007.
Graduate Course: Database Systems, URL: <http://www.cs.fsu.edu/~lifeifei/COP5725/>.
- Teaching Assistant, Computer Science Department, Boston University, Fall, 2002.
Course: Introduction to Computer Science.
- Teaching Assistant, Computer Science Department, Boston University, Spring, 2003.
Course: Introduction to C++.
- Teaching Assistant, Computer Science Department, Boston University, Fall, 2003.
Course: Advanced Database Systems.
- Teaching Assistant, Computer Science Department, Boston University, Spring, 2004.
Course: Introduction to Database Systems.

Research Advising

Doctoral Advising

- Bin Yao, Since September 2007.
- Jeffrey Jestes, Since September 2008.
- Kun Hou, Since January 2008.
- Wangchao Le, Since September 2008.

Master's Project, Major Advisor

- Diming Lu, January 2009 to August 2009.

Master Student Graduated, Thesis or Project Based

- Diming Lu, "Study of OpenMoko Power Management for Linux Mobile Operating System", August, 2009.

Master's Thesis and Project, Examining Committee Member

- Evan Hollander, "e-Voting Software Review Methodologies".
- Michael Cornor, "A Simple, Thread-Safe, Approximate Nearest Neighbor Algorithm".
- Nicholas Wallen, "Graduate Student Database Project".

PhD's Thesis, Qualifying, Area Examining Committee Member

- Yuhua Zhu, Area Survey Defense, "Ideas, Algorithms, Systems in Content Based Image Retrieval".
- Yiming Wu, Area Survey Defense, "Linear Representations for Object Recognition".
- Yuhua Zhu, Prospectus Defense, "Optimal Linear Features for Content Based Image Retrieval and Application".
- Yiming Wu, Prospectus Defense, "Efficient and Discriminative Component Analysis".

External Presentations

1. 08/2008, Approximate Aggregation in Sensor Networks, China 973 Wireless Sensor Network Lab, Shanghai Jiao Tong University, Shanghai, China.
2. 06/2008, Finding Frequent Item in Probabilistic Data, School of Computing Science, Simon Fraser University, Vancouver, Canada.
3. 04/2008, PIRS: Query Verification on Data Streams, ICDE 2008, Cancun, Mexico.
4. 04/2008, Efficient Query Processing of Top-k Queries on Uncertain Data (poster), ICDE 2008, Cancun, Mexico.
5. 09/2007, Authenticating Sliding Window Queries over Data Streams, VLDB 2007, Vienna, Austria.
6. 07/2007, Optimized Transaction Time Versioning Inside a Database Engine, Microsoft Research, Redmond, WA.
7. 04/2007, Privacy Preservation on Evolving Streams through Correlation Tracking, ICDE 2007, Istanbul, Turkey.
8. 03/2007, Data and Query Security for the Data Publishing Model, AT&T Labs - Research, Florham Park, NJ.
9. 03/2007, Data and Query Security for the Data Publishing Model, IBM T. J. Watson Research Center, Hawthorne, NY.
10. 02/2007, Data and Query Security for the Data Publishing Model, Florida State University, Tallahassee, FL.
11. 08/2006, Privacy Preservation on Evolving Streams through Correlation Tracking, IBM T. J. Watson Research Center, Hawthorne, NY.
12. 06/2006, Dynamic Authenticated Index Structures for Outsourced Databases, SIGMOD 2006, Chicago, IL.
13. 04/2006, Characterizing and Exploiting Reference Locality in Data Stream Applications, ICDE 2006, Atlanta, GA.
14. 04/2004, Spatio-Temporal Aggregation Using Sketches, ICDE 2004, Boston, MA.

Patents

- Co-Inventor, Preserving Privacy of Data Streams Using Dynamic Correlations, US patent application number 20080209568 (under application).
- Co-Inventor, Preserving Privacy of One-Dimensional Data Streams Using Dynamic Autocorrelation, US patent application number 20080205641 (under application).