

Mengmeng Liu

4th year Ph.D. Candidate
Computer and Information Science
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OBJECT

Research internship in summer 2010

RERESEARCH INTEREST

Database Systems, specifically Distributed Query Processing, Query Optimization, Adaptive Query Processing, Declarative Networking, Incremental View Maintenance, Data Streams, Sensor Networks, and Cloud Computing

EDUCATION

Ph.D. candidate, Computer and Information Science, 09/2006 - 05/2011(expected)
University of Pennsylvania, Philadelphia, United States
Advisors: *Zachary Ives* and *Boon Thau Loo* (Co-advised)
GPA: 3.92/4.0

Master of Science in Engineering, Computer and Information Science, 09/2006 - 05/2008
University of Pennsylvania, Philadelphia, United States
GPA: 3.84/4.0

Bachelor of Science, Computer Science, 09/2002 - 06/2006
Fudan University, Shanghai, China
GPA: (Overall) 3.78/4.0 (Major) 3.87/4.0

PUBLICATIONS

“Maintaining Recursive Views of Regions and Connectivity in Networks”, Mengmeng Liu, Nicholas E. Taylor, Wenchao Zhou, Zachary G. Ives, Boon Thau Loo, *to appear in IEEE Transactions on Knowledge and Data Engineering (Special Issues on Best papers of ICDE 2009)*

“SmartCIS: Integrating Digital and Physical Environments”, Mengmeng Liu, Svilen Mihaylov, Zhuowei Bao, Marie Jacob, Zachary G. Ives, Boon Thau Loo, Sudipto Guha, *ACM SIGMOD International Conference on Management of Data (SIGMOD), demo description, Providence, RI, June 2009. Honorable Mention Demo Award, top three demos at SIGMOD 2009.*

“Recursive Computation of Regions and Connectivity in Networks”, Mengmeng Liu, Nicholas E. Taylor, Wenchao Zhou, Zachary G. Ives, Boon Thau Loo, in the proceedings of *the 25th International Conference on Data Engineering (ICDE), Shanghai, China, 2009 (Long oral presentation, 16.8% acceptance).*
Invited to a special issue of TKDE for the best papers in ICDE 2009.

“Recursive Computation of Regions and Connectivity in Networks”, Mengmeng Liu, Nicholas E. Taylor, Wenchao Zhou, Zachary G. Ives, Boon Thau Loo, *University of Pennsylvania, Technical Report MS-CIS-08-32, 2008*

AWARDS

- Research Assistant Award, Computer and Information Science Dept, University of Pennsylvania, 06-09
- Teaching Assistant Award, Computer and Information Science Dept, University of Pennsylvania, 07-08
- Top Undergraduate Thesis Award (top 3% undergraduate thesis selected), Fudan University, 2006
- 1st Class Renmin Fellowship (top 3% undergraduate scholarship), Computer Science, Fudan University, 2003 - 2006
- 1st Prize Winner in China Undergraduate Mathematical Contest in Modeling, 2004
- 2nd Prize Winner in ACM Regional Collegiate Programming Contest–Xi An Region, 2002
- 1st Prize Winner in National Olympics in Informatics in Provinces, 2001
- 2nd Prize Winner in National Olympics in Mathematics in Provinces, 2001

ACADEMIC EXPERIENCE

Research Assistant, under Professor Zachary Ives and Boon Thau Loo, University of Pennsylvania, Sep 2006 – now

- *Developed a set of techniques to address the Incremental view maintenance problem in the context of Declarative Networking, where input data are distributed data streams and the queries are often continuous, recursive and distributed. This work is published in ICDE'09 and invited to a special issue in TKDE journal.*
- *Built a distributed query processor on top of Orchestra system to support recursive query processing in a distributed stream environment.*
- *Built the SmartCIS system, which integrates data from the web, sensors, streams and relational databases through a single data integration and acquisition layer using queries in an extended SQL. The motivated applications include smart buildings and green energy usage. The system is demonstrated in SIGMOD'09 and won a top three demo award.*
- *Developed adaptive query processing techniques to interleave query execution and optimization and adapt query plans based on real-time information in the SmartCIS system.*

Research Assistant, under Professor Aoying Zhou, Fudan University, Sep 2004 – June 2006

- *Developed novel techniques and implemented algorithms to address data duplication in union of distributed data streams*
- *Conducted research for undergraduate thesis on “Hash-based methods to compute aggregates on union of distributed data streams” and won the excellent bachelor thesis award*

Teaching Assistant, Internet and Web Systems, University of Pennsylvania, Spring 2008

Teaching Assistant, Database Management Systems, University of Pennsylvania, Fall 2007

Graduate courses taken in 2006-2009: Programming Language, Computer Architecture, Algorithms, Theory of Computation, Machine Learning, Advanced Topics in databases (Data Integration, Database Systems, Networking meets Databases)

SKILLS

- 6 years in Java; 9 years in C/C++;
- Experiences in Pascal, ASP, MySQL, XML, Linux/Unix, network programming, etc;
- Strong learning and communication skills

ACTIVITIES

- Organizer, DBGroup Meetings, weekly seminar of database group at Penn
- Organizer, CISTers, an informal group of graduate women in the CIS department
- External Reviewer, VLDB 2008/2009