

# Liqi Xu

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## Education

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### University of Illinois at Urbana-Champaign

Ph.D. in Computer Science

Urbana, IL

2015 - Present

- Data and Information Systems (DAIS) Group
- Advisor: Prof. Aditya Parameswaran

### University of Wisconsin - Madison

B.S. Double Major in Computer Science (Honor) and Mathematics

Madison, WI

2011 - 2015

- Advisor: Prof. Jingsheng M. Patel and Prof. Jude W. Shavlik

## Experience

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### Research Assistant

University of Illinois at Urbana-Champaign

Urbana, IL

2015 - Present

- Broadly interested in developing systems that can reduce data analysts' effort in dealing with large datasets
- Designed and developed OrpheusDB, a dataset version control system that "bolts on" versioning capabilities to traditional relational database systems; code is available at <http://orpheus-db.github.io>
- Proposed and built a fast sampling and browsing engine, NeeldeTail, which consists of a lightweight in-memory indexing structure, and a set of I/O efficient algorithms for any-k sampling

### Research Intern

Tableau Research

Palo Alto, CA

Summer 2018

- Developed and evaluated machine learning models for federated query processing
- Reduced the runtime up to 7 minutes per query on average
- Mentors: Rick Cole, Daniel Ting

### Research Assistant

University of Wisconsin - Madison

Madison, WI

2015

- Designed a scalable, fast and robust database used for marketing research project
- Experimented quantitative methods to study advertising effectiveness and firm decision making

### Query Optimizer

University of Wisconsin - Madison

Madison, WI

2014

- Built a query optimizer for Quickstep, a relational data procession kernel in Prof. Jignesh Patel's research team
- Increased the query response time by 24.55% and the number of queries can be joined in Quickstep

### Angry Birds AI Competition

University of Wisconsin - Madison

Madison, WI

2013

- Constructed two intelligent machine agents that play the Angry Birds automatically without human intervention
- Won the 3rd Place in the 2013 Angry Birds AI Competition held at 2013 IJCAI main conference
- Advanced to the final rounds as the only undergrad team

## Honors & Awards

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The Generation Google Scholarship

Google, 2014

The Grace Hopper Celebration (GHC) Scholarship

Palantir Technologies, 2014

Clarice Cox Scholarship

University of Wisconsin - Madison, 2014

## Publications

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### **Optimally Leveraging Density and Locality for Exploratory Browsing and Sampling**

Albert Kim\*, **Liqi Xu\***, Tarique Siddiqui, Silu Huang, Samuel Madden, Aditya Parameswaran  
HILDA Workshop at International Conference on Management of Data (SIGMOD), Houston, USA. June 2018.  
(\*Equal Contribution)

### **DataDiff: User-Interpretable Data Transformation Summaries for Collaborative Data Analysis**

Gunce Su Yilmaz, Tana Wattanawaroon, **Liqi Xu**, Abhishek Nigam, Aaron Elmore, Aditya Parameswaran  
International Conference on Management of Data (SIGMOD), Houston, USA. *June, 2018*

### **OrpheusDB: Bolt-on Versioning for Relational Databases**

Silu Huang, **Liqi Xu**, Jialin Liu, Aaron Elmore, Aditya Parameswaran  
43rd International Conference on Very Large Data Bases (VLDB), Munich, Germany. *September, 2017*  
**(Invited to: Special Issue of VLDB Journal for VLDB 2017 Best Papers)**

### **OrpheusDB: A Lightweight Approach to Relational Dataset Versioning**

**Liqi Xu**, Silu Huang, Sili Hui, Aaron Elmore, Aditya Parameswaran  
International Conference on Management of Data (SIGMOD), Chicago, USA. *June, 2017*  
**(Best Demo Honorable Mention)**

### **An Empirical Evaluation of Machine Learning Approaches for Angry Birds**

Anjali Narayan-Chen, **Liqi Xu**, Jude Shavlik  
International Joint Conference on Artificial Intelligence (IJCAI) Symposium on AI in Angry Birds, China. *August, 2013*

## Extracurricular Activity

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### **Google Student Organization UW Madison Chapter**

President & Founder

Madison, WI

2014 - 2015

- Selected as the Google Student Ambassador at the University of Wisconsin - Madison
- Served as a founder and co-director of Google Student Organization UW-Madison Chapter
- Organized an campus wide "Hackathon-Business Case Competition" event, which gives students an opportunity to create an awesome product that could benefit the community
- Helped the campus recruiter with the preparation of information sessions and tech talk

### **Wisconsin Emerging Scholars — Computer Science**

Team Leader

Madison, WI

2013 - 2015

- Taught one section of CS304, a supplementary enrichment course aimed at helping women and minorities who are taking an introductory programming class (CS302)
- Met with 10 students in my group two hours per week
- Led students to do fun group activities on programming and answer their questions

### **The Hub**

Core Organizer

Madison, WI

2011 - 2014

- Actively connected computer science students with opportunities both inside and outside the CS department through holding social events and inviting companies to have tech talks
- Organized the Undergraduate Lecture Series, which invited CS professors to talk to students about high level computer technologies in their research fields
- Strengthened communication, marketing and teamwork skills by organizing 3-Day-Startup(3DS), campus-wide startup on helping turn students into entrepreneurs