

Junwen Yang

Ph.D. in Computer Science

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Research Interests

Improving the quality of **big-data software**.

Research Projects

2016–now **Hyperloop** (<http://hyperloop.cs.uchicago.edu>), *an ongoing project that aims to understand, detect, and solve performance problems for web applications built with Object-Relational Mapping (ORM) frameworks.*

- A comprehensive study on existing open-source applications built with Ruby-on-Rails
- PowerStation (<http://hyperloop.cs.uchicago.edu/powerstation>), A RubyMine plugin to automatically identify and suggest fixes for performance issues

Education

2016–now **Ph.D in Computer Science**, *University of Chicago*, (Advised by Prof. Shan Lu).

2011–2015 **BEng in Software Engineering**, *Fudan University*, 3.6/4.0, Rank 5/79.

2013–2014 **Exchange student in Computer Science**, *National Tsinghua University*, 4.2/4.3.

Publication

2019 **Junwen Yang**, Cong Yan, Chengcheng Wan, Shan Lu, Alvin Cheung, View-Centric Performance Optimization for Database-Backed Web Applications, *41th International Conference on Software Engineering (ICSE'19)*.

2018 **Junwen Yang**, Cong Yan, Pranav Subramaniam, Shan Lu, Alvin Cheung, PowerStation: Automatically Detecting and Fixing Inefficiencies of Database-backed Web Applications in IDE, *26th Foundations of Software Engineering (FSE'18 Demonstration Track)*.

2018 **Junwen Yang**, Cong Yan, Pranav Subramaniam, Shan Lu, Alvin Cheung, How not to structure your database-backed web applications: a study of performance bugs in the wild, *40th International Conference on Software Engineering (ICSE'18)*.

- Featured on Morning paper, HackerNews, and RubyWeekly.

2017 Cong Yan, **Junwen Yang**, Alvin Cheung, and Shan Lu, Understanding Performance Inefficiencies in Real-world Database-backed Applications, *26th Conference on Information and Knowledge Management (CIKM'17)*.

Talk

- 2018 **PowerStation: Automatically Detecting and Fixing Inefficiencies of Database-backed Web Applications in IDE**, *26th Foundations of Software Engineering*, Florida, United States.
- 2018 **How not to structure your database-backed web applications: a study of performance bugs in the wild**, *40th International Conference on Software Engineering*, Gothenburg, Sweden.
- 2017 **Understanding Performance Inefficiencies in Real-world Database-backed Applications**, *26th Conference on Information and Knowledge Management*, Singapore.

Outreach

- 2018 **ACM-W mentor program**, a program for mentoring undergraduate students.
- 2018 **Instructor in compileHer (FEMMES) Tech Capstone Teaching**, a workshop to lead middle school girls through CS and STEM concepts.
- 2017 **Student volunteer**, for *26th ACM Symposium on Operating Systems Principles (SOSP'17)*.
- 2017 **Student volunteer**, for the *2017 ACM SIGMOD/PODS Conference*.
- 2017 **Attended Diversity at SOSP'17: The Ada Workshop**, a forum for female and minority students at the graduate and advanced undergraduate levels who have interests in computer systems research.

Award

- 2017 **CERES Outstanding Research Award 1st Year Graduate**.

Internship

- 2014–2015 **Student Consultant**, *Microsoft Research Asia (MSRA)*, Beijing.
 - Work on better scheduling transient resources to run data-intensive jobs for distributed systems such as HadoopSupervised by lead researcher Dr. Zhengping Qian.
- 2014.3–
2014.9 **Software Development in Test (SDET) intern**, *EMC*, Shanghai.
 - Automate testing frameworks of Mozy, a cloud platform.
 - Create incremental code coverage rate finder.Supervised by manager Aaron Zhang.

Teaching Experience

- 2016 **TA for Introduction to Computer Security (CMSC 23200/33250)**, *University of Chicago*, Ariel Feldman.
- 2014 **TA for Discrete Mathematics**, *Fudan University*, Yiming Zhao.