Ling Zhang– Curriculum Vitae

	University of Wisconsin-Madison
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Education

2021 - now Ph.D., Computer Science (GPA: 3.75/4.00) - University of Wisconsin-Madison

Advisor Prof. Dr. Jignesh Patel

2019-2020 Master of Science, Computer Science (GPA: 3.75/4.00) - Carnegie Mellon University

2015-2019 Bachelor of Science with Highest Distinction, Computer Science (GPA: 3.98/4.00) - Purdue University

Minor in Mathematics

Publication

2021 Ling Zhang, Matthew Butrovich, et.al, Everything is a Transaction: Unifying Logical Concurrency Control and Physical Data Structure Maintenance in Database Management Systems

The Conference on Innovative Database Research 2021, January 10-13, 2021 Chaminade CA, USA.

Research Experience

May 2022 - Microsoft Gray Systems Lab
Aug 2022 *Research Intern*

- Analyzed different benchmarks' performance scaling behaviors of Sql-Server with the change of hardware settings.

- Applied linear mixed effects model and multivariate adaptive regression splines to predict benchmark performance.

- Designed an end-to-end pipeline to vectorize, cluster, and predict workload performance based on existing metrics.

Sept 2021 - University of Wisconsin-Madison
May 2022 *Research Assistant*

- Explored the structure of a set of regular expressions used in the industry and identified common characteristics.

- Designed and experimented regular expression matching strategy that improved performance.

- Implemented a general regular expression matching framework on top of existing state-of-art libraries and speed up 3 real-world workloads by more than 50%.

May 2019 - Database Group, Carnegie Mellon University
Dec 2020   *Research Assistant*

- Implemented Deferred Action Framework in a DBMS to schedule internal maintenance tasks.

- Refactored logical and physical operators in CMU's experimental self-driving DBMS, NoisePage.

- Integrated and improved data binding and statement-to-operator transformation components in NoisePage to annotate and translate query ASTs to logical operators.

- Implemented non-blocking add/drop columns and altering default values with snapshot isolation.

Jan 2018 - CAM2 Analysis Project, Purdue University
May 2019   *Research Assistant*

- Setup Scrapyd daemons to run multiple projects remotely for network camera discovery.

- Constructed a task queue to monitor and manage camera data in the database with RabbitMQ.

- Createx a REST API for camera database interaction with client applications.

- Created class structure and method definitions of Python wrapper for CAM2 Database API.

Teaching Experience

Aug 2020 - Carnegie Mellon University
Dec 2020   *Graduate Teaching Assistant*

- Led recitations and hold office hours to assist students in their learning process.

- Prepared exam and assignment questions to assess students' understanding of the course materials.

Other Experience

Mar 2021 - Splice Machine
Jul 2010   *Software Engineering Intern*

- Refined log generation code to record firing triggers, handling nested trigger execution.

- Wrote script to parse performance metrics, designed database schema of metrics and experiment settings.

Jul 2018 - Purdue University
May 2019   *CAM2 Research Team Leader*

   Managed a 70-student research team, set up meetings with team leaders and professors

Honors and Awards

2019   Computer Research Association
      Honorable Mention in Outstanding Research Award

Aug 2016 - Purdue University
May 2017   *Jandos Scholarship for outstanding students in Women in Science Programs*