

DING DING

dding@nyu.edu

EDUCATION

New York University

2nd Year, Computer Science Ph.D. Program

Advised by Prof. Jinyang Li and Prof. Aurojit Panda

September 2020 - Present

Shanghai Jiao Tong University

B.Eng in Software Engineering

September 2015 - June 2020

PUBLICATION

WeTune: Automatic discovery and verification of query rewrite rules

Zhaoguo Wang, Zhou Zhou, Yicun Yang, Haoran Ding, Gansen Hu, **Ding Ding**, Chuzhe Tang, Haibo Chen, and Jinyang Li

ACM SIGMOD International Conference on Management of Data (SIGMOD), 2022

Polyjuice: High-Performance Transactions via Learned Concurrency Control [talk]

Jiachen Wang*, **Ding Ding*** (* equal contribution), Huan Wang, Conrad Christensen, Zhaoguo Wang, Haibo Chen, and Jinyang Li

Operating Systems Design and Implementation (OSDI), 2021

RESEARCH EXPERIENCE

Assertions for Distributed Applications

Advisor: Prof. Jinyang Li and Aurojit Panda, New York University

- Design an assertion framework especially for distributed applications to detect any incorrect behaviors, and also support concurrent execution.

Automatic discovery and verification of query rewrite rules

Advisor: Prof. Jinyang Li, New York University; Prof. Zhaoguo Wang, Shanghai Jiao Tong University

- Apply compiler superoptimization ideas to SQL query rewriting.
- Automatically enumerate all the rewrite rule candidates up to some size of operators.
- A new verifying method to verify whether two query plans are equivalent.

High-Performance Transactions via Learned Concurrency Control

Advisor: Prof. Jinyang Li, New York University; Prof. Zhaoguo Wang, Shanghai Jiao Tong University

- Apply Reinforcement Learning ideas to optimize concurrency control in databases.
- Formalize concurrency control as a policy table with fine-grained synchronization actions and automatically search for the best policy to achieve the best throughput for any given workload.

Timestamp-based concurrency control and consensus

Advisor: Prof. Zhaoguo Wang, Shanghai Jiao Tong University

- Combine traditional concurrency control level and consensus level to reduce the required round trips.
- Simplify the dependency graph by using timestamp to record the logical order of each operation, and explore more parallelism.

WORK EXPERIENCE

VMware Research Group

Palo Alto, June 2022 - Present

Research Intern, working with Marcos K. Aguilera and Naama Ben David

- Build systems based on disaggregated memory.

Amazon Web Service

Shanghai, July 2020 - August 2020

Software Dev Engineer Intern

- Investigate state-of-the-art auto-batching algorithms.
- Implement global-static auto-batching algorithm in Python.

TEACHING EXPERIENCE

TA for Computer Systems Organization, CSCI-UA.0201(007), Fall 2021

AWARDS & SCHOLARSHIPS

DeepMind Fellowship

2021

Henry M. MacCracken Fellowship

2020

Academic Excellence Scholarship, SJTU (top 10% in SJTU)

2019

Wish Scholarship, SJTU (top 5% in SEIEE, SJTU)

2019

SKILLS

C, C++, Go, Python