Yazhuo Zhang

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Academic Position

Post-doctoral researcher in EASL Lab, ETH Zurich — *Zurich, Switzerland*
Computer Science Department, Advisor: Ana Klimovic — *July.2024 - Present*

Interests

Improve the performance and resource efficiency of large-scale distributed systems

Education

Ph.D. in Computer Science, Emory University — *Atlanta, USA*
Computer Science Department, Advisor: Ymir Vigfusson — *Aug.2019 - May.2024*

M.S. in Software Engineering, South China University of Technology — *Guangzhou, China*
Software Engineering Department, Advisor: Deyou Tang — *Sep.2016 - Jun.2019*

B.S. in Software Engineering, South China University of Technology — *Guangzhou, China*
Software Engineering Department, Advisor: Deyou Tang — *Sep.2012 - Jun.2016*

Publications

1. **Yazhuo Zhang**, Juncheng Yang, Yao Yue, Ymir Vigfusson, Rashmi Vinayak. SIEVE: Simple and Efficient Eviction Policy for Turn-key Web Cache Replacement. *The 20th USENIX Symposium on Networked Systems Design and Implementation(NSDI)*, 2024. ***Community Award***.

2. **Yazhuo Zhang**, Rebecca Isaacs, Yao Yue, Juncheng Yang, Lei Zhang, Ymir Vigfusson. LatenSeer: Causal Modeling of End-to-End Latency Distribution by Harnessing Distributed Tracing. *14th ACM Symposium on Cloud Computing (SoCC)*, 2023.

3. Juncheng Yang, **Yazhuo Zhang**, Ziyue Qiu, Yao Yue, Rashmi Vinayak. FIFO queues are all you need for cache eviction. *The 29th ACM Symposium on Operating Systems Principles (SOSP)*, 2023.

4. Juncheng Yang, Ziyue Qiu, **Yazhuo Zhang**, Yao Yue, Rashmi Vinayak. FIFO can be Better than LRU: the Power of Lazy Promotion and Quick Demotion. *The 19th Workshop on Hot Topics in Operating Systems (HotOS)*, 2023.

5. Deyou Tang, **Yazhuo Zhang**, Qingmiao Zeng. Optimization of Hardware-oblivious and Hardware-conscious Hash-join Algorithms on KNL. *The 4th International Conference on Cloud Computing and Internet of Things (CCIOT)*, 2019.

6. Deyou Tang, Henglin Liang, **Yazhuo Zhang**, Qingmiao Zeng. Parallelization of Back Propagation Neural Network on Knights Landing Platform. *The 14th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (CNC-FSKD)*, 2018.

Industry Research Experience

Research Intern @ Magnition
CDN Performance What-if Analysis — June. 2023 - Present
Manager/Mentor: Irfan Ahmad

- Conducted a thorough survey of the existing CDN architecture and performance requirements through reviewing academic literature and interviewing CDN industry experts.
- Designed and implemented a versatile CDN simulator utilizing the Lingua Franca language. This simulator facilitates explorations of various parameter spaces, including but not limited to resource allocation and eviction policies.
- Currently engaged in the rigorous assessment of the CDN simulator's performance and applicability in real-world scenarios, aiming to optimize its effectiveness and utility.

Research Intern @ Akamai
MetroCache Routing Performance Analysis — May 2022 - Aug 2022
Manager: Anna Blasiak, Mentor: Scott Roche

- Collected traffic data on test machines with the geo-choice feature enabled, providing geo-partition and geo-choice results for each ECOR.
- Designed and conduct experiments focused on determining the impact of various parameter settings on geo-choice results, leading to a deep understanding of geo-choice performance and its correlation with parameter adjustments.
- Identified optimal parameters' range for geo-choice feature. Additionally, uncovered potential capacity deficiencies in specific regions.
- Devised an interactive tool for for monitoring geo-choice feature's performance, thus enhancing the company's capacity to promptly identify and rectify performance-related issues.

Researcher @ Twitter
What-if Analysis for Hypothetical Service Migration — *Feb 2021 - May 2022*
Manager: Yao Yue, Mentor: Rebecca Isaacs

- Enhanced Google Cloud Dataflow for the construction of service dependency trees, capable of querying tens of millions of Zipkin traces and storing crucial details of sibling spans.
- Devised a latency-critical path model, LatenSeer, which can estimate end-to-end latency distributions under hypothetical latency changes in internal services, further reporting each service's latency slack.
- Evaluated LatenSeer using prototypes and production traces. LatenSeer predicts end-to-end latency distribution within 5.35% error (D-Statistic).
- Helped investigate cache cluster behavior during failover periods and clock skew distributions among production machines.

Awards and Honors

2024	NSDI'24 diversity grant
2023	OSDI'23 diversity grant
2023	HotOS'23 travel grant
2022	OSDI'22 diversity grant
2021	OSDI'20 student grant
2018	Outstanding cadres of Student Association
2016	Excellence of Commercial Promise of Intel Cup Parallel Application Challenge

Teaching Experience

2021 **Analysis of Algorithms** (Teaching Assistant), *Emory University*
2020 **System programming** (Teaching Assistant), *Emory University*
2020 **Introduction to Computer Science** (Teaching Assistant), *Emory University*
2018 **Fundamentals of Computers** (Teaching Assistant), *SCUT*
2017 **Database** (Teaching Assistant), *SCUT*
2017 **Parallel Algorithms and Programming** (Lab Instructor), *SCUT*

Services

2024 **Artifact Evaluation Committee**: ATC'24
2024 **Artifact Evaluation Committee**: OSDI'24
2024 **External Reviewer**: EuroSys'24
2022 **Volunteer**: LADIS'22
2021 **External Reviewer**: ATC'21
2020 **External Reviewer**: HotCloud'20