Yazhuo Zhang

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Education

Ph.D. in Computer Science, Emory University   *Atlanta, USA*
COMPUTER SCIENCE DEPARTMENT, ADVISOR: YMIR VIGFUSSON   *Aug.2019 - Present*

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, 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'23)**.

2. 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'24)**.

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'23)**.

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'23)**.

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'19)**.

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'18)**.

Work Experience

Research Intern @ Magnition

CDN Performance What-if Analysis (Manager/Mentor: Irfan Ahmad)   June. 2023 - Present
- 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 (Manager: Anna Blasiak, Mentor: Scott Roche)   May 2022 - Aug 2022
- 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 (Manager: Yao Yue, Mentor: Rebecca Isaacs)   *Feb 2021 - May 2022*
- 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.

Teaching Experience

2021	**Teaching assistant**: CS326 Analysis of Algorithms	*Emory University*
2020	**Teaching assistant**: CS551 System programming	*Emory University*
2020	**Teaching assistant**: CS170 Introduction to Computer Science	*Emory University*
2018	**Teaching assistant**: Fundamentals of Computers	*SCUT*
2017	**Teaching assistant**: Database	*SCUT*
2017	**Lab instructor**: Parallel Algorithms and Programming	*SCUT*

Awards and Honors

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**

Services & Activities

2021	**External Reviewer**: USENIX Annual Technical Conference (ATC'21)
2022	**Volunteer**: 12th Workshop on Large Scale Distributed Systems and Middleware (LADIS)
2020	**External Reviewer**: 12th USENIX Workshop on Hot Topics in Cloud Computing(HotCloud'20)