Hailiang ZHAO

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BIOGRAPHY

Currently I am a fourth-year Ph.D. student of College of Computer Science and Technology, Zhejiang University (http://www.zju.edu.cn/). Before my Ph.D. career, I was an undergraduate student from Wuhan University of Technology (http://www.whut.edu.cn/) and received my B.Eng. degree in Computer Science and Technology on June, 2019. In September 2019, I was admitted to study for a Ph.D. degree in Zhejiang University under the supervision of Prof. Shuiguang Deng (https://person.zju.edu.cn/shuiguang) without entrance examination. From September 2022 to August 2023, I am a joint PhD student at Nanyang Technological University (NTU) (https://www.ntu.edu.sg/), Singapore, under the supervision of Prof. Xueyan Tang (https://personal.ntu.edu.sg/asxytang/).

EDUCATION

PhD student, Computer Science and Technology
Zhejiang University, Hangzhou, China — Sep 2019 - Jun 2024

Joint PhD student, Computer Science and Technology
Nanyang Technological University, Singpore, Singpore — Sep 2022 - Aug 2023

Bachelor of Engineering, Computer Science and Technology
Wuhan University of Technology, Wuhan, China — Sep 2015 - Jun 2019

RESEARCH INTERESTS

Currently I am focusing on **Cloud & Edge Computing**, **Distributed Computing & Systems**, and **Optimization Algorithm Design & Analysis**. Recently, I pay great attention to the following topics:

- **Resource Allocation & Job Scheduling Algorithms with Theoretical Guarantees**. Scheduling algorithms are key to realizing improvements in resource utilization for the cloud-native applications. I am interested with the design and analysis of scheduling algorithms for large-scale clusters, DCs, cluster federations, etc. Currently I put special effort on deep learning workload scheduling in GPU clusters.
- **Ready-for-Use Cluster Schedulers in K8s-Native Systems**. K8s (Kubernetes) is an open-source system for automating deployment, scaling, and management of containerized applications. Kube-scheduler is the default component responsible for the scheduling of pods (a set of inter-related containers). By leveraging the power of CRD (`CustomResourceDefinition`), customer schedulers can be designed. I am interested with the R&D of custom schedulers for various batch & elastic workloads.

SELECTED PUBLICATIONS

- **Hailiang Zhao**, Shuiguang Deng*, Feiyi Chen, *et al*, *Learning to Schedule Multi-Server Jobs with Fluctuated Processing Speeds*. In: **IEEE Transactions on Parallel and Distributed Systems (TPDS)**, doi: 10.1109/TPDS.2022.3215947, 2023. (Core A*, CCF A)

- Haowei Chen, Shuiguang Deng*, Hongze Zhu, **Hailiang Zhao**, *et al*, *Mobility-aware Offloading and Resource Allocation for Distributed Services Collaboration*. In: **IEEE Transactions on Parallel and Distributed Systems (TPDS)**, doi: 10.1109/TPDS.2022.3142314, 2022. (Core A*, CCF A)
- Shuiguang Deng, **Hailiang Zhao**, Zhengzhe Xiang, *et al*, *Dependent Function Embedding for Distributed Serverless Edge Computing*. In: **IEEE Transactions on Parallel and Distributed Systems (TPDS)**, doi: 10.1109/TPDS.2021.3137380, 2021. (Core A*, CCF A)
- **Hailiang Zhao**, Shuiguang Deng*, Zijie Liu, *et al*, *DPoS: Decentralized, Privacy-Preserving, and Low-Complexity Online Slicing for Multi-Tenant Networks*. In: **IEEE Transactions on Mobile Computing (TMC)**, doi: 10.1109/TMC.2021.3074934, 2021. (Core A*, CCF A)
- Haowei Chen, Shuiguang Deng, **Hailiang Zhao**, and Jianwei Yin, *Composite Service Selection and Optimization for Mobile Edge Systems*, In: **Chinese Journal of Computers**, doi: 10.11897/SP.J.1016.2022.00082, 2021. (CCF A)
- **Hailiang Zhao**, Shuiguang Deng*, Zijie Liu, Jianwei Yin, and Schahram Dustdar, *Distributed Redundant Placement for Microservice-based Applications at the Edge.* In: **IEEE Transactions on Services Computing (TSC)**, doi: 10.1109/TSC.2020.3013600, 2021. (Core A*, CCF A)
- Shuiguang Deng, Guanjie Chen, **Hailiang Zhao**, Honghao Gao, and Jianwei Yin, *Incentive-driven Computation Offloading in Blockchain-enabled E-commerce.* In: **ACM Transactions on Internet Technology (TOIT)**, doi: https://doi.org/10.1145/3397160, 2020. (Core B, CCF B)
- Shuiguang Deng, **Hailiang Zhao**, Weijia Fang*, *et al*, *Edge Intelligence: The Confluence of Edge Computing and Artificial Intelligence.* In: **IEEE Internet of Things Journal**, doi: 10.1109/JIOT.2020.2984887, 2020. [ESI Highly Cited Paper] [ESI Hot Paper] (JCR Q1)
- Yishan Chen, Shuiguang Deng*, **Hailiang Zhao**, *et al*, *Data-intensive Application Depolyment at Edge: A Deep Reinforcement Learning Approach.* In: **Proceedings of the 17th IEEE International Conference on Web Services (ICWS '19)**, Milan, Italy, 2019. [Short Paper]
- **Hailiang Zhao**, Shuiguang Deng*, Cheng Zhang, *et al*, *A Mobility-aware Cross-edge Computation Offloading Framework for Partitionable Applications.* In: **Proceedings of the 17th IEEE International Conference on Web Services (ICWS '19)**, Milan, Italy, 2019. [Best Student Paper] (Core A, CCF B)
- **Hailiang Zhao**, Wei Du*, Wei Liu, *et al*, *QoE Aware and Cell Capacity Enhanced Computation Offloading for Multi-Server Mobile Edge Computing Systems with Energy Harvesting Devices.* In: **Proceedings of the 15th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC '18)**, Guangzhou, China, 2018. (Core B, CCF C)

HONORS

CSC Scholarship, Sep 2022
Doctoral Freshman Scholarship of Zhejiang University, Sep 2019
Best Student Paper Award of the 2019 IEEE International Conference on Web Service, July 2019
Outstanding Graduate of Wuhan University of Technology, June 2019
Excellence Award of Wuhan University of Technology, Oct 2018