

SHIQI HE

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EDUCATION

University of Michigan (UMich)

09 2023 – Now

PhD in Computer Science and Engineering

Ann Arbor, USA

- Area(s): Multimodal Language Models, Diffusion Serving Systems
- Advisor: Mosharaf Chowdhury

University of British Columbia (UBC)

09 2020 – 05 2023

Master of Science (MSc) in Computer Science - CGPA - 88.8/100

Vancouver, Canada

- Area(s): Federated Learning
- Thesis: GlueFL: Reconciling Client Sampling and Model Masking for Bandwidth Efficient Federated Learning
- Advisors: Ivan Beschastnikh, and Mathias Lécuyer

Hong Kong Polytechnic University (PolyU)

09 2016 – 08 2020

BSc (HONS) Computing, Department of Computing - CGPA - 3.90/4.00

Hong Kong SAR

- Outstanding Student Award (1 / 150)
- Advisor: Song Guo

Korea Advanced Institute of Science and Technology (KAIST)

02 2019 – 06 2019

Exchange Program, School of Computing - CGPA - 3.60/4.30

Daejeon, Korea

SELECTED PUBLICATIONS & PREPRINTS

- [1] **Shiqi He**, Yue Cui, Xinyu Ma, Yaliang Li, Bolin Ding, and Mosharaf Chowdhury. “Branch-and-Browse: Efficient and Controllable Web Exploration with Tree-Structured Reasoning and Action Memory”. In: *arXiv Preprint arXiv:2510.19838*. 2025.
- [2] **Shiqi He**, Insu Jang, and Mosharaf Chowdhury. “Mordal: Automated Pretrained Model Selection for Vision Language Models”. In: *International Conference on Learning Representations (ICLR 2026)*. 2025.
- [3] Runyu Lu, **Shiqi He**, Wenxuan Tan, Shenggui Li, Ruofan Wu, Jeff J Ma, Ang Chen, and Mosharaf Chowdhury. “TetriServe: Efficient DiT Serving for Heterogeneous Image Generation”. In: *ASPLOS 2026*. 2025.
- [4] Qifan Yan, Andrew Liu, **Shiqi He**, Mathias Lecuyer, and Ivan Beschastnikh. “FedFetch: Faster Federated Learning with Adaptive Downstream Prefetching”. In: *International Conference on Computer Communications (INFOCOM 2025)*. 2024.
- [5] Zhifeng Jiang, Peng Ye, **Shiqi He**, Ruichuan Chen Wei Wang, and Bo Li. “Lotto: Secure Participant Selection against Adversarial Servers in Federated Learning”. In: *USENIX Security Symposium 2024*. 2024.
- [6] Feijie Wu, Song Guo, Zhihao Qu, **Shiqi He**, Ziming Liu, and Jing Gao. “Anchor Sampling for Federated Learning with Partial Client Participation”. In: *International Conference on Machine Learning (ICML 2023)*. 2023.
- [7] **Shiqi He**, Qifan Yan, Feijie Wu, Lanjun Wang, Mathias Lécuyer, and Ivan Beschastnikh. “GlueFL: Reconciling Client Sampling and Model Masking for Bandwidth Efficient Federated Learning”. In: *Conference on Machine Learning and Systems (MLSys 2023)*. 2023.
- [8] Feijie Wu, **Shiqi He**, Song Guo, Zhihao Qu, Haozhao Wang, Weihua Zhuang, and Jie Zhang. “Sign Bit is Enough: A Learning Synchronization Framework for Multi-hop All-reduce with Ultimate Compression”. In: *ACM/IEEE Design Automation Conference (DAC 2022)*. 2022.
- [9] Rindranirina Ramamonjison, Timothy Yu, Raymond Li, Haley Li, Giuseppe Carenini, Bissan Ghaddar, **Shiqi He**, Mahdi Mostajabdaveh, Amin Banitalebi-Dehkordi, Zirui Zhou, et al. “NL4Opt Competition: Formulating Optimization Problems Based on Their Natural Language Descriptions”. In: *Conference on Neural Information Processing Systems (NeurIPS 2022) Competition Track*. 2022.

WORK EXPERIENCE

Alibaba

05 2025 – 08 2025

Research Intern, Tongyi Lab

Hangzhou, China

- AgentScope 1.0: A Developer-Centric Framework for Building Agentic Applications
 - * Enabling controllable web agent exploration with tree-structured reasoning
 - * Storing and reusing past actions via action memory to reduce repeated interactions

Hong Kong University of Science and Technology (HKUST)

06 2023 – 08 2023

Research Assistant, Supervised by Prof. Wei Wang

Hong Kong SAR

- (USENIX Security 2024) Lotto: Secure Participant Selection against Adversarial Servers in Federated Learning
 - * Enabling verifiable randomness for random selection
 - * Approximating informed selection through a refined process

Huawei Canada

06 2022 – 11 2022

Support Researcher (Part-Time), Big Data and Intelligence Platform Lab

Vancouver, Canada

- (NeurIPS 2022 Competition) NL4Opt: Natural Language for Optimization Modeling
 - * Formulating optimization problems based on their natural language descriptions
 - * Helped host the competition. A total monetary prize of \$22,000 USD

Hong Kong Polytechnic University (PolyU)

06 2021 – 09 2021

Research Assistant, Edge Intelligence Lab, Supervised by Prof. Song Guo

Hong Kong SAR

- (DAC 2022) Sign Bit is Enough: A Learning Synchronization Framework for Multi-hop All-reduce with Ultimate Compression
 - * A sign-bit compression-based learning synchronization framework for decentralized machine learning
 - * Attended the conference in San Francisco for oral presentation

Microsoft Research Asia (MSRA)

06 2019 – 09 2019

Research Intern, System Research Group, Supervised by Dr. Yang Chen

Beijing, China

- (Microsoft Hackathon 2019 Beijing) Confirmation Time Prediction in Ethereum
- (SOSP 2021) Forerunner: Constraint-based Speculative Transaction Execution for Ethereum
 - * A computing framework to accelerate Ethereum transaction processing through speculative execution

Hong Kong Polytechnic University (PolyU)

01 2019 – 03 2019

Research Assistant, Alibaba-PolyU Research Group, Supervised by Prof. Jiannong Cao

Hong Kong SAR

- Food Traceability System: A Web App based on Hyperledger Fabric (Nodejs SDK) for food traceability
 - * Conducted performance testing and debugging for the system and the Ionic frontend interface
 - * Assisted in setting up Hyperledger Fabric service in multi-node using Docker and debugging Fabric smart contract

OTHER PROJECTS & SKILLS

Graduate Course - Security and Privacy | Term Paper

2021

"An Analysis of Existing Spectre Mitigations in eBPF"

UBC

Graduate Course - Distributed System | Term Paper

2019

"Time-Bounded API Energy Minimization Offloading Strategy in Mobile OCR Applications"

KAIST

AWARDS & SCHOLARSHIPS

HKSAR Government Scholarship Fund - Talent Development Scholarship

Scholarship 2020

The Hong Kong Polytechnic University Scholarship

Scholarship 2019

Microsoft Research Asia Stars of Tomorrow Internship Program

Award of Excellence 2019

Bright Future Charitable Foundation Asian Exchange Scholarship

Scholarship 2019

2018 ACM-ICPC Asia Regional Contest Shen Yang Site

Silver Medal 2018

2018 EY (Ernst & Young) Cyber Asia Case Competition

First Runner-up Team (HK\$10,000) 2018

24-Hour IEEE Xtreme Programming Competition 11.0

World Top 30 (3%) 2017

PolyU COMP Freshman Project Competitions

First Runner-up Team 2016

China National Olympiad in Informatics in Provinces (NOIP)

First Prize (Hunan Province) 2014