

# SHIQI HE

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## EDUCATION

<b>University of Michigan (UMich)</b> <i>PhD in Computer Science and Engineering</i>	<b>09 2023 – Now</b> <i>Ann Arbor, USA</i>
<b>University of British Columbia (UBC)</b> <i>Master of Science (MSc) in Computer Science - CGPA - 88.8/100</i>	<b>09 2020 – 05 2023</b> <i>Vancouver, Canada</i>
<b>Hong Kong Polytechnic University (PolyU)</b> <i>BSc (HONS) Computing, Department of Computing - CGPA - 3.90/4.00</i>	<b>09 2016 – 08 2020</b> <i>Hong Kong SAR</i>
<b>Korea Advanced Institute of Science and Technology (KAIST)</b> <i>Exchange Program, School of Computing - CGPA - 3.60/4.30</i>	<b>02 2019 – 06 2019</b> <i>Daejeon, Korea</i>

## 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 Mostajabdeh, 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

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### Alibaba

*Research Intern, Tongyi Lab*

05 2025 – 08 2025

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)

*Research Assistant, Supervised by Prof. Wei Wang*

06 2023 – 08 2023

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

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

06 2022 – 11 2022

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)

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

06 2021 – 09 2021

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)

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

06 2019 – 09 2019

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)

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

01 2019 – 03 2019

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

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### Graduate Course - Security and Privacy | Term Paper

*“An Analysis of Existing Spectre Mitigations in eBPF”*

2021

UBC

### Graduate Course - Distributed System | Term Paper

*“Time-Bounded API Energy Minimization Offloading Strategy in Mobile OCR Applications”*

2019

KAIST

## AWARDS & SCHOLARSHIPS

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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