

Haotian (Jack) Gong

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EDUCATION

- **University of Michigan** Ann Arbor, United States
PhD Student September 2024 -
- **The University of British Columbia** Vancouver, Canada
B.Sc. (Honors) in Computer Science; GPA: 91.4/100 September 2019 - June 2024
Courses: Tradeoffs in Designing Computer Systems(Graduate), OS Design and Implementation(Graduate), Compiler Construction, Advanced Machine Learning
Thesis: Less is More: Designing a Flexible Graph Store with Key-values

PUBLICATION

Jialong Li, Haotian Gong, Federico De Marchi, Aoyu Gong, Yiming Lei, Wei Bai, Yiting Xia. "Uniform-Cost Multi-Path Routing for Reconfigurable Data Center Networks." To appear in *Proceedings of the ACM SIGCOMM 2024 Conference*. 2024.

EXPERIENCE

- **Max Planck Institute for Informatics** Saarbrücken, Germany
Research Intern - Prof. Yiting Xia May 2023 - September 2023
 - Participated in the design of a novel routing algorithm on top of reconfigurable optical data center networks, implemented the algorithm in the *htsim* network simulator with C++, reduced flow completion time by up to 51% while improving the bandwidth efficiency by 38% compared to the state-of-the-art.
- **Systopia Lab, The University of British Columbia** Vancouver, Canada
Research Intern - Prof. Margo Seltzer May 2022 - April 2023
 - Contributed C++ code to the "Flexograph" graph processing system; leveraged the iterator programming model and the OpenMP parallel programming framework to speed up graph algorithms by up to 14× with multi-threaded execution. Resulting work in preparation for submission to VLDB. [Code]
 - Independently explored 2 paradigms of memory - storage interactions in graph processing systems. Presented findings through written and verbal reports in graduate seminar course. [Report]
- **Digital Health Innovation Lab, BC Hospitals** Vancouver, Canada
Software Developer May 2021 - August 2021
 - Built a Python pipeline that modularizes and automates patient data ingestion into the i2b2 data warehouse, reduced size of legacy SQL codebase by 95%.
- **Philips Lifeline** Vancouver, Canada
DevOps Engineer Intern January 2021 - April 2021
 - Prototyped Slack chatbot using a full serverless architecture that pushes AWS CloudWatch alerts to Slack channels, eliminating manual monitoring effort for the DevOps team.
- **The University of British Columbia** Vancouver, Canada
Teaching Assistant
 - Took on teaching assistantships for Models of Computation (2020W1, W2), Introduction to Computer Systems(2021W1, W2), Computer Hardware and Operating Systems (2022W2), Definition of Programming Languages (2023W1).
 - Led tutorial sections and office hours, averaged 87% student favourable rating.

TECHNICAL PROJECTS

- **UBC AgroBot** Design team member 2019-2023. Built image detection framework for agriculture robot capable of fully-autonomous fertilization, targeted weeding, and data collection.
- **ED Forecast** Selected student project for Borealis AI "Let's Solve it" challenge. Implemented and compared ML models that forecast patient arrival patterns for emergency departments in hospitals around Canada. [Code]
- **Course Copilot** Worked in a team of three to develop chatbot application that resolves course material related questions. Investigated 3 major context extraction methods that ground large language models with factual truth, mitigating LLM "hallucinations". [Code, Report]

SKILLS SUMMARY

- **Languages:** C++, C, Python, Java, Racket, SQL
- **Tools & Frameworks:** Perf, OpenMP, WiredTiger, Kubernetes, Django, PyTorch
- **Certificates:** AWS Certified Solutions Architect – Associate

HONORS AND AWARDS

- Dean of Science Scholarship 2023
- UBC Science Undergraduate Research Experience Award 2022
- ACM-ICPC Pacific Northwest Div.2 Canada Site Champions 2020
- UBC Trek Excellence Scholarship, awarded to top 5% in faculty by sessional GPA 2020, 2021, 2022
- UBC Basketball Intramurals Champions 2022