

# Haotian (Jack) Gong

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## SUMMARY

Computer science graduate with co-op and research experience in database and cloud systems. Familiar with methods and tools for low-level development in storage and networking. Excited about exploring all aspects of the infrastructure stack to build cloud applications for performance and scalability.

## EDUCATION

- The University of British Columbia** Vancouver, Canada  
*B.Sc. (Honors) in Computer Science; GPA: 91.3/100* September 2019 - June 2024  
**Courses:** Tradeoffs in Designing Computer Systems(Graduate), OS Design and Implementation(Graduate), Compiler Construction, Advanced Machine Learning

## 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.
  - Second-authored paper in submission to SIGCOMM 2024.
- 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 preperation 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 departements 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

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