

Haotian(Jack) Gong

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EDUCATION

- **The University of British Columbia** Vancouver, BC
B.S. (Honors) in Computer Science; GPA: 3.9/4.0 (90/100)
Courses: Computer Hardware and OS, Machine Learning and Data Mining, Advanced Database Systems.
Sep 2019 - Current

EXPERIENCE

- **Systopia Lab, The University of British Columbia** Vancouver, BC, Canada
Research Assistant - Prof. Margo Seltzer
May 2022 - Current
 - Developed a graph processing system in C++ which performs graph analytics on large-scale graph datasets.
 - Designed concurrency control system with the OpenMP framework to facilitate concurrent read and writes on the database, improving analytics runtime by up to 10x with multithreaded execution.
 - Implemented edge-centric and vertex-centric graph algorithms (Connected Components, Triangle Counting), and tested them for runtime and correctness. Profiled runs to identify and resolve performance bottlenecks.
- **Digital Health Innovation Lab, The University of British Columbia** Vancouver, BC, Canada
Clinical Data Warehouse Pipeline Developer
May 2021 - August 2021
 - Built pipeline that performs automatic data ingestion, replacing previous method that requires manual execution, shrinking SQL codebase by 90%.
 - Perform exploratory data aggregation, cleaning and analysis with Python Pandas.
- **Philips HealthTech** Vancouver, BC, Canada
DevOps Engineer Intern
Jan 2021 - Apr 2021
 - Created Slack chatbot that pushes AWS alerts to Slack channels, reducing human effort in monitoring.
 - Template and optimize Bamboo CI/CD pipelines. Create and deploy cleanup and data extraction jobs to Kubernetes cluster.
- **The University of British Columbia** Vancouver, BC, Canada
Teaching Assistant
Sep 2020 - May 2022
 - TA for CPSC 121: Models of Computation(2020W) and CPSC 213: Introduction to Computer Systems(2021W).
 - Mark exams/assignments, hold office hours, and instruct lab sections with 20+ students.

PROJECTS

- **UBC AgroBot** Created script with depth-sensing camera to transition image detection results from Tensorflow into 3D coordinates for an autonomous agriculture robot which perform targeted weeding, fertilizing, and data collection.
<https://github.com/apricot2012/demo-realsense-depth-detection>
- **Lyrical Articulator** Maintain project to process vocal melodies and their corresponding lyrics in Mandarin / Cantonese, and identify tonal irregularities that will impede the listener's interpretation of the lyrics.
<https://github.com/apricot2012/Lyrical-Articulator>
- **AP Management System** Designed a database app built with the Django framework, that simulates a centralized management system of an amusement park. <https://github.com/apricot2012/Amusement-Park-Django>
- **InsightUBC** Implemented RESTful web server using TypeScript and Bootstrap, able to process queries for course and classroom data.

SKILLS SUMMARY

- **Languages** C++, C, Python, Java, SQL, Unix scripting
- **Tools** Kubernetes, WiredTiger, Hotspot, GIT

HONORS AND AWARDS

- UBC Trek Excellence Scholarship, Awarded to top 5% of students in faculty 2019, 2020
- Placed 4 out of 58 in ACM-ICPC Pacific Northwest Regionals Division 2 2020
- One of 60 invitees to the Lloyd Auckland Invitational Workshop at UWaterloo 2018