

Brian Hu

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Education

McGill University – Montreal, Canada

Exp. Graduation: June 2023

Bachelor of Science, Major in Computer Science, Minor in Statistics

GPA: **4.00 / 4.00**

Awards: Dean's List, Faculty of Science Scholarship, MES Bourses d'excellence en sciences, Wing Hing Chan Scholarship in Science

Experience

Data-Intensive Storage and Computer Systems Lab, McGill University

Apr. 2021 - Present

NSERC Undergraduate Researcher

- Research focus on NoSQL systems design for real-time data analytics
- Developed and ran representative data analytics benchmark in **C++** to simulate social media workload using RocksDB to identify significant bottlenecks
- Implemented custom string serializer in **C++**
- Augment in-memory data structure in order to support other data types besides default "Slice" type and ultimately improve performance of read/write operations

Computer Science Undergraduate Society, McGill University

Sept. 2020 – Present

Helpdesk Tutor

- Provided peer-to-peer tutoring to undergraduate students
- Identified areas for improvement and worked towards solutions using **Python, Java, and C**

Distributed Systems Information Lab, McGill University

Sept. 2020 – Dec. 2020

Undergraduate Research Assistant

- Collected network packets over McGill's network using different compression algorithms & Wireshark
- Created documentation for lab's proprietary AIDA software (Agile Abstraction for Advanced In-Database Analytics)

Projects

Full Stack Marathon Training App

<https://github.com/BriannHu/MarathonTrainer>

- Web application using **React, Material UI & React-Chart-js2** for frontend dashboard
- Implemented authentication (Google OAuth) and profile creation using **Redux**
- Allowed creating and saving runs as well as exporting runs into CSV file using **MongoDB, Express & Node.js**

ASL Alphabet Interpretation App

https://github.com/BriannHu/ASL_Alphabet_Interpretation

- **Python** application that converts detected ASL gestures to English Alphabet
- Uses **OpenCV** and **Mediapipe** libraries to provide real-time detection of gestures and displays output to screen

McGill DISCS Lab Website

<https://github.com/BriannHu/DISCS-Website>

- Developed lab website using **React** and **React-Bootstrap** for components, with third-party libraries (ie. scroll-spy) used to enhance visuals

COVID-19 Visualizer

<https://github.com/BriannHu/Covid19Visualizer>

- Web application using **Python, Dash** and **HTML/CSS** to provide real-time visualization of Coronavirus data in Canada
- Deployed and hosted using **Heroku**, automated using **Github Actions**

Technical Skills

Languages: Java, Python, C, C++, Javascript/HTML/CSS, OCaml, R, MIPS

Frameworks and Libraries: React.js, Material UI, Node.js, JUnit

Tools: Git, RocksDB, Unix, AWS (EC2), Heroku