

# Brian Hu

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(613) 462-9805 • brian.hu@mail.mcgill.ca

## Education

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**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

**Relevant Coursework:** Honours Algorithms and Data Structures, Software Design, Operating Systems, Programming Languages & Paradigms, Intro. to Data Science

## Experience

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**Data-Intensive Storage and Computer Systems Lab, McGill University**

Apr. 2021 - Present

*Undergraduate Research Assistant (NSERC)*

- 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
- (*In-Progress*) Propose and develop novel design to address a bottleneck and implement in the LSM tree structure of RocksDB

**Computer Science Undergraduate Society, McGill University**

Sept. 2020 – Apr. 2021

*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
- Analyzed network traffic with Wireshark and resolved packet retransmission issues
- Created documentation for lab's proprietary AIDA software (Agile Abstraction for Advanced In-Database Analytics)

## Projects

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### Simulated Operating System

- Developed operating system prototype written in **C** that can be interacted with using the command line
- Implemented OS shell (parser and interpreter), kernel, virtual memory and basic contiguous file system
- Simulated boot sequence, memory managing, concurrent script execution (using a CPU scheduler)

### Command Line Robot Application

- Implemented software design principles such as Template, Command, Decorator, Strategy, Composite in **Java** to create a robot application controlled using basic actions and programs
- Created unit tests with **JUnit**, used reflection and white/black box testing to maximize branch coverage
- Developed supporting UML and documentation detailing the application

### Netflix Movie Generator

- Developed web application using **React** to suggest movies that can be filtered
- Automated scraping of over 5000 titles from online sources using **Selenium**
- Integrated connection to uNoGs API to access extensive movie details

## Technical Skills

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

**Frameworks and Libraries:** React.js, Node.js, JUnit

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