

# Ritchie Xia

3<sup>rd</sup> Year Computer Engineering Student | University of British Columbia

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## TECHNICAL SKILLS

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**Languages:** C, Java, HTML, CSS, JavaScript, Python, SystemVerilog/Verilog, ARMv7, x86-64

**Tools:** Git, MATLAB, Intel Quartus, ModelSim, Node, Bash

## PROJECTS

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### OS161 Kernel, CPEN 331 Project

Sep – Dec 2021

- Implemented synchronization primitives, system calls, and virtual memory using **C** and **x86** to develop a simple Linux kernel
- Utilized **multithreading** through synchronization of threads and processes to improve speed of operation
- Managed memory using a PID table and FD table to keep track of threads and switch their statuses to signal whether it is active, queued, or finished and waiting for cleanup
- Used **GDB** to debug issues such as deadlocks, system faults, and memory leaks to ensure code quality

### BookCards, CPEN 291 Project (<https://github.com/ritchiexia/book-recommender>)

Mar – May 2021

- Developed a web app in a group of 4 using **Python**, **React** and **MongoDB** that recommends books based on user preference
- Programmed an **embedding model** to pair new users with existing users of similar taste, followed by **reinforcement learning** to actively update the user vector and the user's recommend books

### Find Free Space, nwHacks (<https://github.com/ritchiexia/FindFreeSpace>)

Jan 2021

- Created a web app using **Python** and **OpenCV** for upper body detection from a camera input and returns a count to a **MongoDB** database to inform users of a room's occupancy level

## ENGINEERING STUDENT TEAMS

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### UBC Rocket

Sep 2019 – Apr 2020

#### Internals Subteam Member

- Integrated core components of rocket into an efficient, functional design
- Used **SolidWorks** to design and perform force analyses on mid-assembly of rocket including main and drogue parachute bays, spoked plates, and threaded rods providing room for avionics board to be housed

## OTHER WORK EXPERIENCE

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### Trek Bicycle Corporation, Burnaby, BC

Jul – Oct 2020

#### Sales Associate

- Provided a personal shopping experience by qualifying customer needs and finding ideal products matching requirements
- Effectively communicated customers' technical issues with the technician team for bicycle repairs and spare parts

### SFU Camps, Burnaby, BC

Jun – Aug 2019

#### General Instructor of Computers

- Supervised, formed lesson plans, and taught basics of computer programs such as **Scratch**, **HTML**, the Adobe suite (**Photoshop**, **After Effects**), and **SketchUp** to groups of about 25 campers aged 10-12

### BC Hockey, Burnaby, BC

Sep 2014 – Mar 2017

#### Ice Hockey Official

- Communicated with 2 other officials clearly and effectively each game to make split second decisions to ensure safe and fair play between players aged 4-13

## EDUCATION

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University of British Columbia, BAsC Computer Engineering  
Co-op: Available for 4-16 months beginning May 2022

Expected April 2024