SEAN GHAELI

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SKILLS SUMMARY

- (Proficient, Over 100 hours): OOP, Python, JavaScript, Git, React, Rest APIs, MATLAB, Java
- (Familiar): C++, relational databases (SQL), cloud deployment, data structures and algorithms, TensorFlow, OpenCV

TECHNICAL EXPERIENCE

Kardium — *Software Systems R&D Engineer* **September 2022 – Present**

- Working towards developing medical device software used for 3D sensing, mapping, and analyzing blood flow and voltage within the heart chambers.
- Utilizing: MATLAB, advanced data structures and algorithms, Java, C++, Git

Motion Metrics — *Full-Stack And Cloud Software R&D Engineer* **May 2022 – August 2022**

- Deployed application to centralize records management of products, automatically create customized client profiles to optimize sales and support, and track product development to aid production engineers
- Wrote RESTful API and achieved 100% line coverage across all 24 endpoints by writing 288 test cases
- Utilized: TypeScript, React, MySQL, REST APIs, Git, Python, cloud storage, Azure, CI/CD pipelines

Cascadia Carbon — *Full-Stack Software Engineer* **January 2021 – April 2021**

- Increased product sales by 24% by deploying a new sales platform and company website
- Grew mobile userbase by 30% after redesigning the iOS application architecture
- Utilized: JavaScript, Swift, Git, PHP, cloud storage

UBC, Condensed Matter Theory Research — *Research Engineer* **May 2020 – August 2021**

- Developed signal processing scripts to probe properties of quantum materials by measuring thermal noise
- Designed two iterations of 2-layer PCB using Altium to make low noise transistor measurements
- Utilized: Python, C++, MATLAB, Altium, LTSpice, electrical design & debugging, machining

SOFTWARE PROJECTS

Autonomous Simulated Vehicle Competition **Fall 2021**

- Used Linux to configure ROS environment and implemented vehicle with autonomous features such as PID navigation control, collision avoidance, and license plate detection
- Utilized OpenCV image processing library to implement SIFT for object detection and categorization
- Achieved 99%+ licence plate detector accuracy by training CNNs with TensorFlow
- Utilized: Linux, ROS, Gazebo, OpenCV, SIFT, TensorFlow, Convolutional Neural Networks, Python

Autonomous Mars Rover Robot Competition **Summer 2021**

- Used C++ to interface with microcontroller to implement robot control functionality, which included PID line following, mechanical actuation, and sensor communication
- Custom made PCB boards for all robot modules such as motor drivers which led to optimal noise reduction
- Utilized: C++, electrical design, mechanical design, machining, component selection

Concurrent Wikipedia API and Server **Fall 2020**

- Employed Java to implement multi-threaded server to concurrently handle Wikipedia API requests
- Built upon Java's native concurrent queue to implement finite-time buffer object to avoid server overflow
- Used Wikipedia's Java API to support requests such as finding search trends and relevant search results
- Utilized: Java, multi-threading, web sockets, servers

EXTRA CURRICULAR

Quantum Computing Hackathon **April 2021**

- Used Microsoft Quantum Computing Library (Q#) to manipulate qubits and implement basic functions
- Implemented quantum tinder for our freestyle project using gates, oracles, and Grover's algorithm
- Among 200 project submissions, our group was one of the 11 invited back to do a live project demo

Young Brainport Summer School **August 2018**

- Attended ASML semiconductor design challenge making allocation decisions about chip manufacture
- Won X-ray crystallography data processing design challenge at multi-billion dollar food processing company

EDUCATION

Department of Applied Science**, University of British Columbia (UBC)** — *Fourth Year* **Fall 2019 – Present**

- Major: *B.A.Sc.* in *Engineering Physics*