

Ro-ee Tal

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EDUCATION

UNIVERSITY OF BRITISH COLUMBIA

2021 | Vancouver, CA
Major: **Engineering Physics - 81%**
Dean's Honor List
International Community Achieve...
Outstanding International Student...

KING DAVID HIGH SCHOOL LINKSFIELD

2015 | Johannesburg, SA
Valedictorian | 10 Distinctions
Top 1% of National Graduates
AP Math | AP English | IT

RELEVANT CLASSES

Introduction to Instrument Design
Principles of Software Construction
Probability
Linear Algebra
Introduction to Computation

SKILLS

Embedded systems
Data analysis
Full-stack development

LANGUAGES

C | Java | Python | Matlab | Igor

TOOLS

Git | Gradle | Travis CI
JUnit | STM32CubeMX | GDB

OTHER

Independent + Collaborative worker
Enthusiastic + fast learner
Team management | Public speaking
Problem solving | Decision making

LINKS

roeetal.com | [GitHub](#) | [LinkedIn](#)

PUBLICATIONS

Duplicated Voting Processors...

WORK EXPERIENCE

QUANTUM DEVICES GROUP | RESEARCH ASSISTANT

Jan 2018 - Apr 2018 | Vancouver, CA

- Researched the behavior and fabrication process of nanowire devices relating to majorana qubits for Microsoft's Quantum Computer.
- Expanded the lab's **Igor** codebase to support asynchronous data measurement, making experiments up to 4x faster.

QUANTUM DEVICES GROUP | SUMMER RESEARCH ASSISTANT

May 2017 - Aug 2018 | Vancouver, CA

- Prototyped a low-cost lock-in amplifier with **17 bit** precision and reduced digitization.
- Integrated fast signal sampling and processing on a **Chipkit Uno32 ARM** MCU.
- Developed a communication server with a **Raspberry Pi | Flask** back-end. Uses a socket and queue to prevent **HTTP** requests from flooding and crashing the system.

VOLUNTEER WORK

UBC SAILBOT | SOFTWARE DEVELOPER

Jan 2018 - Present | Vancouver, CA

- Developed the **Simulink** control block for rudder using **Matlab**.
- Developing a **RRT** local path-finding algorithm in **C++** to visualize path optimization given weather, obstacles, ship movements and possible sailing maneuvers.

UBC ORBIT | COMMAND AND DATA HANDLING TEAM LEAD

Sep 2016 - Sep 2017 | Vancouver, CA

- **Lead** the Command and Data Handling sub-team (which consisted of 5 developers).
- Focused on decision making, delegating tasks and team cohesion.
- Designed and prototyped Trillium, the satellite's low-cost communication system, which prevents radiated-induced failures from occurring during orbit.
- Developed using **STM32 F4 ARM** MCUs and programmed in **C**. (See publications).

RELEVANT PROJECTS

VANESSA | A FULLY AUTONOMOUS ENPH 253 ROBOT

2018 | Vancouver, CA

- Worked in a group of 4, responsible for high-level system design.
- Designed, prototyped and developed the robot's software system (**STM32 F4**).
- Integrated a **neural network image processing** navigation system.
- Programmed the robot's controls in **C**.

EDUHACKS | A REAL-TIME COMPREHENSION ASSISTANT WEB-APP

2017 | Vancouver, CA

- Generates questions using **natural language processing** & linguistics algorithms.
- Developed a **Flask** back-end and implemented Tensorflow's **SyntaxNet** NLU toolkit.

AUTOMATED CLAW | AN APSC 101 CLASS PROJECT

2016 | Vancouver, CA

- Overall best performance: grabbing few large & many small objects.
- Developed using **Arduino** and ultra-sonic sensors, programmed in **C**.

POCKET WALLET | A MONEY TRACKING APP FOR MANAGING ALLOWANCES

2013 | Johannesburg, SA

- My first programming project. Taught myself **Objective-C** and **IOS** development.
- Downloaded a few hundred times throughout the world.