Ro-ee Tal

roeetal@alumni.ubc.ca | roeetal.com | github.com/roeetal

EDUCATION

UNIVERSITY OF BRITISH COLUMBIA — Expected 2021 | Vancouver, CA
Engineering Physics Major | Honour's Mathematics Minor | Dean's Honor List

KING DAVID HIGH SCHOOL LINKSFIELD — 2015 | Johannesburg, SA
Top 1% of National Graduates | Valedictorian | 10 Distinctions | AP Math | AP English | IT

WORK EXPERIENCE

PRINCIPLES OF SOFTWARE CONSTRUCTION | Teaching Assistant — Sep - Present 2018 | Vancouver, CA
- Running programming labs, design review sessions and assisting students with programming and theoretical questions.

QUANTUM DEVICES GROUP | Research Assistant — Jan - Apr 2018 | Vancouver, CA
- Collaborated with partner research groups, ran experiments, analyze data and explored fabrication techniques for 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 - Aug 2017 | Vancouver, CA
- Designed, prototyped and tested a 17 bit lock-in amplifier, 1 bit more than the industry standard and 10x cheaper.
- Developed a Linux communication server and custom PCB, and integrated a dedicated signal processing MCU, which included sockets and scheduling, HTTP communication, filtering, amplification and phase-sensitive detection.

TECHNICAL PROJECTS

UBC SAILBOT | Software Developer — Jan 2018 - Present | Vancouver, CA
- Developed the control block for rudder using Matlab and currently developing a RRT local path-finding algorithm in C++ to visualize path optimization given weather, obstacles, ship movements and possible sailing maneuvers.

VANESSA | A fully autonomous and intelligent robot — May - Aug 2018 | Vancouver, CA
- Built the most technologically advanced and best prototyped robot out of 16 groups with three other peers.
- Integrated neural network object detection into the PID navigation system for finding and retrieving the objectives.
- Designed the software and electrical systems (which were combined into a custom PCB-shield), implemented digital and analog signal processing, configured the MCU timers and interrupts and programmed the controls in C.

YELP SERVER | A Principles of Software Construction Class Project — Nov 2017 | Vancouver, CA
- Scored 5/5. Created a multithreaded server, structured database and parser. Implemented statistical machine learning.

EDUHACKS | A real-time comprehension assistant web-app — Sep 2017 | Vancouver, CA
- Brainstormed and successfully developed the web-app with 4 other students at a 24 hour hackathon.
- Implemented Tensorflow's SyntaxNet natural language understanding toolkit and a Flask server in a Python back-end.

UBC ORBIT | Command and Data Handling Team Lead — Sep 2016 - Sep 2017 | Vancouver, CA
- Lead the Command and Data Handling sub-team (5 developers) to develop the satellite's communication system, which is resilient to radiation-induced errors while in space. Built using STM32 ARM MCUs and programmed in C.
- Published to IAC: Duplicated Voting Processors for the Low Cost Radiation Hardening of Computers

POCKET WALLET | A money tracking app for managing allowances — Dec 2013 | Johannesburg, SA
- Taught myself Objective-C and IOS development over the summer and developed my first mobile application.
- It was downloaded a few hundred times in Africa, Europe and North America during the year for which it was available.

SKILLS

LANGUAGES C | Java | Python | Matlab | Igor
TOOLS Git | Gradle | Travis CI | JUnit | STM32CubeMX | GDB | Simulink | Confluence