Ro-ee Tal

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EDUCATION

UNIVERSITY OF BRITISH COLUMBIA

2021 | Vancouver, BC

- Engineering Physics
- Dean's Honor List
- International Community Achievement Award
- Outstanding International Student Award

KING DAVID HIGH SCHOOL LINKSFIELD

2015 | Johannesburg, South Africa

- Valedictorian
- Top 1% of National Graduates

SKILLS

PROGRAMMING

Languages

- Python • Matlab + Simulink • Java • C • Swift

Tools

- Tensorflow • Git • Gradle • Docker • JUnit • Travis CI

CAD

- Solidworks • OnShape • Maya • Autodesk Eagle

PHYSICS

- Scanning Electron Microscope
- Electron-beam lithography
- Thermal evaporation

PROJECTS

CRISPY

Present | Vancouver, Canada

A private quant fund.

EDUHACKS

2017 | Vancouver, Canada

A NLP tool designed to help children with comprehension.

APARTMENT BOT

2016 | Vancouver, Canada

A bot that alerts you about new apartment listings.

POCKET WALLET

2013 | Johannesburg, South Africa

A money tracking IOS app that helps you be more responsible with your allowance.

EXPERIENCE

UBC SAILBOT | Software Developer

Jan 2018 - Present | Vancouver, BC

- We are currently in the process of building an autonomous Sailboat to take on the Vic-Maui Yacht Race.
- Developed the dynamics control block for simulating the rudder and the hull.
- Developing the short-term path-finding algorithm.

QUANTUM DEVICES GROUP | Research Assistant

Jan 2018 - Apr 2018 | Vancouver, BC

- Measured nanowire devices as part of underlying research geared towards developing Majorana qubits .
- Analyzed data to characterize the behavior of the nanowire devices and explored how peculiarities in the behavior can be accounted for in fabrication processes.
- Explored fabrication techniques to improve the proximity effect of Aluminum superconducting contacts in InAs nanowire devices, so the wires can be more precisely tuned.
- Improved the labs data acquisition software to include asynchronous device communication for faster and more efficient measurements.
- Built the new heating system for the cryostat with which I was measuring.

UBC ORBIT | Command and Data Handling Team Lead

Sep 2016 - Sep 2017 | Vancouver, BC

- We built a cube satellite with on-board AI capabilities for the purpose of analyzing global vegetation health.
- My sub-team focused on designing the communication system of the satellite, which we call Trillium. Trillium is a low-cost radiation-hardened processing system. We developed it using STM32 MCUs. (See publications).

QUANTUM DEVICES GROUP | Research Assistant

May 2017 - Aug 2017 | Vancouver, BC

- I developed a functioning prototype of a lock-in amplifier, which avoids digitization with an effective 17 bit precision, and a cost thousands of dollars less than than the industry standard.
- Built upon existing code to create the "lock-in" controller responsible for removing noise from a signal.
- Created a versatile communication interface: fast enough to communicate with the "lock-in" controller without affecting its computational speed, and simple enough to integrate with the lab's server and data acquisition setup. This interface runs on a Raspberry Pi .
- Designed the internal circuitry of the device which combines the computation and interface controllers, and also provides additional signal manipulation, buffering and amplification. I designed the circuit and chose IC components using ultra-low noise design concepts.
- I then wrapped all the components in a compact aluminum case, with the industrial design done in 3D CAD software.

PUBLICATIONS

Duplicated Voting Processors for the...

LINKS

GitHub | LinkedIn | roeetal.com