Ro-ee Tal

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WORK EXPERIENCE

PRINCIPLES OF SOFTWARE CONSTRUCTION | Teaching Assistant   Sep - Present 2018 | Vancouver, CA
- Lead programming labs, design review sessions and office hours to help students debug and understand core concepts.
- Implemented design specs, CI, data structures, algorithms, networking and concurrency in production level projects.

QUANTUM DEVICES GROUP | Research Assistant   Jan - Apr 2018 | Vancouver, CA
- Characterized the behaviour of nanowires devices to develop the first topological qubit for a quantum computer.
- Ran experiments and analyzed data of hybrid superconductor semiconductor nanowire devices with a masters student.
- Explored fabrication recipes to improve proximity effect of superconducting contacts in the nanowire devices.
- 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
- Prototyped a 17 bit lock-in amplifier which has 1 bit more precision than the industry standard and is 10x cheaper.
- Combined a Linux communication server and dedicated signal processing MCU into a custom housing and motherboard, which utilizes sockets, scheduling, HTTP, filtering, amplification and phase-sensitive detection.

TECHNICAL PROJECTS

INSTRUMENT DESIGN | A fully autonomous and intelligent robot   May - Aug 2018 | Vancouver, CA
- Received the best prototyping grade for building the only robot with computer vision navigation out of 16 groups.
- Analyzed the challenge and designed, prototyped and manufactured the robot from scratch.
- Integrated neural network object detection into a PID navigation system for finding and retrieving the objectives.
- Integrated the software, control and electrical systems into a custom PCB with back-EMF and transients protection.
- Implemented signal processing and programmed the ARM MCU timers, interrupts and controls in C and Python.

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

UBC ORBIT | Command and Data Handling Team Lead   Sep 2016 - Sep 2017 | Vancouver, CA
- Lead the Command and Data Handling sub-team (5 developers) and developed the satellite's communication system, which is resilient to radiation-induced bit-flips and latch-ups. 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
- Self-taught Objective-C and IOS development over the summer and developed first mobile application.
- Downloaded a few hundred times in Africa, Europe and North America during the year it was available.

EDUCATION

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

SKILLS & INTERESTS

PROGRAMMING C | C++ | Java | Python | Matlab | Igor | SQL
TOOLS Git | Gradle | Travis CI | JUnit | Simulink | TensorFlow | Docker | Eagle | Solidworks
ENGINEERING PCB Design | CAD | Machining | 3D Printing | Lazer + Waterjet Cutting
PHYSICS E-Beam Lithography | Thermal Evaporation | SEM
OTHER Walking My Corgi | Soccer | Snowboarding | Reading Classics | Cooking