Ro-ee Tal

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WORK EXPERIENCE

AMAZON WEB SERVICES | Software Development Engineer — Jun - Aug 2019 | Cape Town, SA

- Designed and developed an internal, containerized stream-processing data analytics tool and launched it to production.

PRINCIPLES OF SOFTWARE CONSTRUCTION | Teaching Assistant — Sep - Dec 2018 | Vancouver, CA

- Lead programming labs, design review sessions and office hours to help students debug and understand core concepts.

QUANTUM DEVICES GROUP | Research Assistant — Jan - Apr 2018 | Vancouver, CA

- Assisted in experimental research in topological quantum computing by conducting transport experiments of superconductor-semiconductor nanowire quantum devices and analyzing data, to characterize device behaviour.
- Explored additional 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

UBC SAILBOT | Software Developer — Jan 2018 - Jan 2019 | Vancouver, CA

- Worked on simulating control dynamics of the sailboat as well as designing and implementing a RRT* local path-finding algorithm in Python to visualize path optimization given real-time constraints.

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.

EDUHACKS | Real-time comprehension assistant AI — Sep 2017 | Vancouver, CA

- Developed a comprehension assistant web platform 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) 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 and published paper to IAC: Duplicated Voting Processors for the Low Cost Radiation Hardening of Computers.

EDUCATION

UNIVERSITY OF BRITISH COLUMBIA — Expected 2021 | Vancouver, CA

BASc Engineering Physics | Dean's Honor List

ETH ZURICH — Sep 2019 - Feb 2020 | Zurich, CH

MSc Exchange Semester in Computational Science and Engineering | ML and AI specialization

SKILLS & INTERESTS

LANGUAGES C | C++ | Java | Python | Matlab | Mathematica | SQL
TOOLS Git | Gradle | Travis CI | JUnit | Tensorflow | PyTorch | wandb | Simulink | Docker
I LIKE Walking My Corgi | Classic Fiction | Tarantino Films | Philosophical Discussions | Soccer | Rugby