Isabelle André | BASc Electrical Engineering

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WORK EXPERIENCE

Silicon Engineer — *Microsoft*

INTERNSHIP - MAY 2022 - AUG 2022, RALEIGH, NC

- Developed a transaction-based debugging interface using React JS to visualize L2 cache transactions, events, and attributes, facilitating design verification and tag entry debugging
- Correlated multithreaded cache ops on hardware level parsed to JSON
- Created stimulus to verify cache cleaning blocks by driving signals in UVM and adding support in the testbench for new RTL

Automation Engineer — *Apple*

INTERNSHIP - JAN 2022 - APR 2022, CUPERTINO, CA

- Developed an automation framework to process output data from a variety of testers to a database, saving engineers hours of work
- Created new automation tools to reduce manual steps and errors and streamline compliance results across several product lines

Software Integration Engineer — *Tesla*

INTERNSHIP - SEP 2021 - DEC 2021, PALO ALTO, CA

- Added coverage to the air suspension system SIL test infrastructure
- Developed unit tests for air suspension firmware and validated vehicle platform firmware releases in SIL infrastructure
- Lead the bring up and firmware integration of the Semi HIL tester

Research Assistant — *UBC Robotics & Controls Lab*

DEC 2020 - DEC 2021, VANCOUVER, BC

- Automated robotic arms using task-based hierarchical state machines
- Implemented a decentralized motion planning framework for the collision avoidance of arms in a dynamic surgical environment
- Developed a task planning software for trilateral tasks using da Vinci Research Kit robotic surgery platform, ROS, and V-REP simulator

ENGINEERING DESIGN TEAMS

UBC Unmanned Aircraft Systems — *Electrical Lead*

- Developed the firmware and communication layer between Odroid, PWM, and brushed drivers to control the motor system of the aircraft
- Integrated remote PID control capabilities for drive, claw, and winch
- Developed a real-time QR scanning Python program using OpenCV to display location data on screen using an FPV camera system

UBC Launchpad — *Software Engineer*

- Developed an iOS mobile application to track and classify a group's expenses with notifications using Swift, Node.js, and mySQL
- Built application infrastructure and backend API, and containerized the backend with a mySQL database using Docker

UBC Rapid CAD and 3D Printing — *Co-Captain*

- Managed a team of 25+ students contributing to our Consulting, 3D printing, and 3D printer construction and maintenance business
- Lead the design and construction of a new compact & portable 3D printer

EDUCATION

University of British Columbia

SEPTEMBER 2018 - MAY 2023

BASc Electrical Engineering

Vancouver, BC, Canada

Language Skills

Verbal/Written: French, English

TECHNICAL SKILLS

Languages

Python, C++, C, Rust, Verilog, Assembly, Javascript, Matlab, Lua, Bash, Swift

Frameworks

Node.js, React, Angular, Loopback, Ionic

Other

Git, ROS, CAN, I2C, UVM, V-REP, SQL, Simulink, Solidworks, Docker, FPGA, Quartus, Modelsim, Linux

PROJECTS

Avionics Integration Testbench

SYSTEM VERILOG, FPGA, VIVADO, MODELSIM, PYTHON, C, STM32, PCB DESIGN

An avionics equipment emulator consisting of an FPGA based PCB interface device and software package. Aircraft flight parameters are sent by ARINC 429 communication in real-time to avionics equipment from a computer or bi-directionally.

Motion Planning and Velocity Collision Avoidance Framework

PYTHON, ROS, V-REP

Developed a task and motion planning framework to compute collision avoiding velocities such that each robot may avoid collisions without changing their initial trajectory

Metal Collecting Autonomous Robot

C, MAKEFILES, EFM8, STM32F051, NRF24 TRANSCEIVER, BO230XS USB SERIAL

Designed and programmed a metal detecting robot collecting metallic objects automatically, restricted within a 0.5 m^2 perimeter wire, or manually using a controller