Xander Naumenko

Software Developer · Quantitative Trader · UBC Engineering Physics Student

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Summary

Languages: C, Python, Rust, C++, JavaScript/TypeScript, HTML/CSS, Java, Swift, C#

Tools & frameworks: Git, React, Electron, TensorFlow, Make, CMake, GDB, Altium

Education

University of British Columbia
Vancouver, BC

BASC in Engineering Physics — *September 2019 - May 2024 (expected)*

- Cumulative average of 91.9% (4.33/4.33 GPA equivalent), expected graduation in May 2024 with minor in honors math

Experience

Jane Street
New York City, NY

Quantitative Trading Intern — *May 2023 - August 2023*

- Used statistics and machine learning techniques to model financial market behavior

Tesla
Palo Alto, CA

Software Development Intern — *May 2022 - December 2022*

- Contributed to the Linux Kernel and baremetal firmware for various cores of Tesla's Autopilot self driving platform
- Brought up low level silicon verification and unit test framework for the Autopilot board
- Led development of software for custom PCB enabling system level regression tests of vehicles, using C, Make and gdb

UBC Rocket
Vancouver, BC

Software & Electronics Team Lead — *September 2019 - May 2022*

- Directed a team of 5 developers to design software, firmware and electronics for rocket going to 100km high
- Wrote large scale firmware codebase completely from scratch in C, using FreeRTOS, MCUXpresso and CMake
- Developed ground station software responsible for communicated with onboard electronics over radio, written in Python using PyQt

TRIUMF Particle Accelerator
Vancouver, BC

Data Science Intern — *January 2021 - May 2021, July 2019 - August 2019*

- Conducted precision magnetic field maps of important components to reduce experimental uncertainty of a multi-year experiment
- Lowered magnetization uncertainty of components by 70% by implemented python models to fit experimental data

Spot Solutions
Vancouver, BC

Software Development Intern — *May 2020 - August 2020*

- Single-handedly recoded Bella Project app in Swift from Java to create iOS version with Unity plugin integration
- Designed a custom PCB and enclosure to record and report data back to above app, reducing space taken by apparatus by 60%
- Decreased internal process times by 10 hours per month by writing a .NET Core web application in C# to automate repetitive tasks

Technical Projects

Computerraria - A 32 Bit CPU Inside Terraria
Rust, C#, Python — *November 2022 - Present*

- Used in-game wiring to construct a fully compliant RISC-V CPU inside Terraria (an adventure video game), video summary here
- Wrote mod to reimplement the circuitry system 50,000% faster than the base game using algorithmic and low level optimizations
- Created high level rust driver API to implement programs like Pong, the game of life and even a 3D renderer on the CPU

Noteation - Music made Intuitive
Typescript, React, Python, Flask, CockroachDB — *September 2022*

- Hack the North finalist (top 12 out of 200+ teams) project that reads+annotates sheet music while flipping pages using gaze tracking
- Uses AdHawk eye tracking to stream events to CockroachDB backend in Python, and React frontend polls for new events to flip pages

Simulated Autonomous Driving Competition
Python, TensorFlow, Keras, ROS, Gazebo, OpenCV — *September 2021 - December 2021*

- Created an AI to drive a car around a simulated street and read license plates as part of a student competition, report here
- Trained CNN to recognize license plates using TensorFlow and developed computer vision self driving algorithm with OpenCV

PCB Business Card
Altium, Reflow Soldering, Bluetooth, NFC — *November 2020 - January 2021*

- A custom PCB that both acts as a business card and a fully programmable microcontroller, pictures/schematics on on Github
- When all chips are placed it has LEDs, bluetooth communication, UART+SPI outputs as well as much more functionality