Xander **Naumenko**

SOFTWARE/EMBEDDED SYSTEMS DEVELOPER · ENGINEERING PHYSICS STUDENT

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Summary

Languages: C, Python, 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 - Current*
- Cumulative average of 91.7% (4.33/4.33 GPA equivalent) over all classes
- Currently on track to complete a minor in honours math

Experience

Tesla *Palo Alto, CA*
FIRMWARE SYSTEM VALIDATION INTERN *May 2022 - December 2022*
- Responsible for firmware of custom PCB enabling automation of regression/hardware in the loop testing
- Wrote driver code for onboard peripherals including I2C adcs, digital potentiometers, servos, pwm outpus and others
- Refactored firmware codebase and CAN interface, making the system modular for future versions and reducing CAN bus load by 80%

UBC Rocket *Vancouver, BC*
AVIONICS TEAM LEAD *September 2019 - May 2022*
- Head of the 5 person avionics subteam for UBC Rocket, a student run design team attempting to launch a rocket to over 100km
- Wrote large scale firmware codebase completely from scratch
- Developed robust testing system for testing firmware, enabling complete software in the loop validation

TRIUMF Particle Accelerator *Vancouver, BC*
RESEARCH INTERN *January 2021 - May 2021, July 2019 - August 2019*
- Conducted precision magnetic field maps of important components to reduce experimental uncertainty of the multi-year experiment
- Implemented python models to reconstruct original magnetization of objects which improved uncertainty in magnetization by 70%
- Wrote graphical user interface with pyqt for easy use of custom measurement apparatus

Spot Solutions *Vancouver, BC*
SOFTWARE DEVELOPER *May 2020 - August 2020*
- Singlehandedly 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%
- Wrote a .NET Core web application for the generation of resumes for internal company usage
- Responsible for Sysadmin duties including setting up Proxmox environment migrating SQL databases across hosting platforms

Technical Projects

Simulated Autonomous Driving Competition
PYTHON, TENSORFLOW, KERAS, ROS, GAZEBO, OPENCV *September 2021 - December 2021*
- Developed 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 custom data test data generation scripts
- Developed computer vision driving algorithm for navigating course as well as avoiding other cars and pedestrians

GoodKnight
TYPESCRIPT, ELECTRON, REACT, NODE *July 2021 - January 2022*
- An Electron based piece of chess database software made as a personal project with source code available on Github
- Integrates with engines such as Stockfish to provide analysis of many chess positions

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

tiaraOS (TiaraOS Is A Recursive Acronym Operating System)
C, x86 ASSEMBLY, MAKE, BASH, *May 2022 - June 2022*
- Completely custom hobby operating system called tiaraOS to learn principles of OS kernel development
- Implements VGA output, paging and higher half kernel and work on both qemu emulator and physical x86 machines