

Matthew Wright

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Summary

Detail-oriented and highly focused systems software engineer and data scientist with experience developing robust and maintainable production code. Lifetime learner and versatile thinker with experience across many software domains and a proven ability to dive deep into new problems.

Experience

3Flares Technologies Inc.

Software Engineer, Halifax, Nova Scotia
02/2021 - Present

- Designed and developed FreeRTOS-based embedded software using C and IAR.
- Analyzed, debugged, maintained and added features to multiple embedded system designs.
- Worked directly with clients to guide designs and manage expectations.

4DNav LLC

Software Engineer
11/2020 - 03/2021

- Developed a custom visualization tool for real-time, real-world, and accurately positioned 3D display of offshore drilling equipment using the Unity game engine.

Daxsonics Ultrasound Inc.

Software Engineer, Halifax, Nova Scotia
10/2019 - 02/2021

- Developed firmware for a high voltage, high frequency pulser. Firmware written in C for an ATSAM21 Microchip microcontroller, including hardware controls and user interface via SCPI over USB.
- Worked on a team of two to design and implement a GUI in NanoGUI for a high framerate ultrasound imaging system, including the UI and the USB 3.0 video streaming interface to the imaging hardware.

Alentic Microscience Inc.

Software Engineer, Halifax, Nova Scotia
02/2018 - 10/2019

- Designed and implemented neural network applications using PyTorch, TensorFlow, and TensorRT.
- Routinely performed data collection, cleaning, and exploration to guide machine learning algorithm designs, such as dimensionality reduction and sample visualization with t-SNE technique.
- Developed and deployed an HTTP server and REST API in C using libmicrohttpd on an NVidia single-board-computer.
- Created an iOS app in Swift and Xcode to remotely control custom research hardware.
- Contributed to a custom Linux kernel build for an NVidia single-board-computer.

Daxsonics Ultrasound Inc.

Junior Software Engineer, Halifax, Nova Scotia
09/2014 - 02/2018

- Automated electrical and visual test and measurement procedures for ultrasound transducer production.
- Worked remotely with the client and contractors on production C++ for a class II ultrasound medical device (10,000s LOC project).
- Implemented vectorized, high-speed C++ module to process high-frequency ultrasound signals and measure transducer output power.
- Led discussions with engineers from multiple disciplines and companies to determine software designs.

Ultra Electronics Maritime Systems

Embedded Systems Engineer (Co-op student)
01/2014 - 04/2014

- Designed and implemented an embedded system used to process and transmit digital compass data, including hardware and software.

Extracurricular Activity Contributed to Torus, an open source secrets management tool which leverages client side decryption in Go (<https://github.com/manifoldco/torus-cli/>).

Education

Masters of Computer Science

Dalhousie University, Halifax, Nova Scotia
09/2020

- Extended state-of-the-art genetic programming-based reinforcement learning algorithm Tangled Program Graphs, developed at Dalhousie by Dr. Malcolm Heywood and his student Dr. Stephen Kelly, to perform real-valued actions (https://web.cs.dal.ca/~mheywood/Thesis/MWright_MCS.pdf).

Bachelor of Engineering

Dalhousie University, Halifax, Nova Scotia
02/2016

- Completed the Electrical and Computer Engineering co-discipline.
- Completed co-operative education.
- Graduated with Sexton Distinction (highest GPA in graduating class).

Skills

- Neural network development.
- Comfortable in Windows, Linux or MacOS.
- Organized and self-directed.
- C, C++11(+), and Python.
- Data wrangling in numpy, matplotlib, and sklearn.
- Git with GitHub and BitBucket.
- Organized
- Lifelong learner.
- Embedded system development.