Collin Bolles

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cbolles
collinbolles

Intro

Research Software Engineer for SAIL at Boston University. Full Stack developer creating applications to enable research at the university. Experiences in a range of software fields from embedded systems to web development.

Skills and Proficiency

Languages

ARM Assembly	●●○○○
C	●●●●○
C#	●●●○○
C++	●●●○○
HTML/CSS	●●●●○
Java	●●●●●
JavaScript	●●●○○
Python	●●●●●
Rust	●●●○○
Typescript	●●●●○

Frameworks and Libraries

Angular	●●●○○
Django	●●●○○
Flask	●●●○○
NestJS	●●●●●
OpenCV	●●●○○
React	●●●○○
Spring Boot	●●○○○

Tools and Environments

AWS	●○○○○
Azure	●●○○○
Git	●●●●●
Google Cloud	●●●○○
LaTeX	●●●○○
Linux	●●●●○
Mac OS	●●●●○
Maven	●●●○○
OpenShift	●●●○○
ROS	●●○○○
Unity	●●○○○
Vim	●●●○○
Windows	●●●○○

Education

Boston University
M.S. Robotics and Autonomous System (expected 2025)
GPA 3.73/4
Rochester Institute of Technology
B.S. Computer Science
GPA 3.84/4

Employment

Software and Application Innovation Lab · Software Engineer May 2022 to Present

- Lead developer on a state-of-the-art data annotation for video-to-video labeling of sign language slated for international use in 4+ universities
- Spear headed efforts transitioning applications into Red Hat Openshift
- Architected a machine learning pipeline for video-to-video sign language recognition for over 60,000 videos
- Technical lead on adding hardware support for an automated cell microscopy application requiring 24/7 uptime
- Tools and Technologies: Typescript, NestJS, React, Angular, Openshift, Kubernetes, Docker

D3 Engineering · Engineering Technician Jan. 2021 to Dec. 2021

- Produced Linux Kernel drivers for embedded vision systems for the NVIDIA Jetson
- Populated Linux device trees for newly designed hardware
- Expand NVIDIA Linux Kernal feature set to enable frame synchronization between up to 16 cameras
- Tackled hardware and software bugs using oscilloscopes, logic analyzers, and Linux system tools
- Tools and Technology: C, Python, Linux Kernel, Git, Gerrit

Herrick Technology Labs · Software Intern Sep. 2020 to Dec. 2020

- Wrote libraries to interface with a variety of software defined radios
- Optimized radio based object tracking algorithm
- Tools and Technology: C++, Python, Git

Blue Spiral · Software Developer June 2020 to Aug. 2020

- Wrote iOS application for on-the-spot employee performance reviews using SwiftUI
- Update image processing pipeline from v1 to v2 of Azure OCR API
- Researched methodologies for vegatation health detection using drone and satellite footage
- Tools and Technology: C#, Swift, Python, Azure OCR API, OpenCV

Ball Bowler · Software Developer Jan. 2019 to Nov. 2019

- Designed and developed a UI for a miniature bowling lane
- Implementing scoring logic and user interface on a LattePanda single board computer
- Tools and Technology: Java, JavaFX

Blue Spiral · Software Intern Aug. 2017 to Aug. 2018

- Developed object detection training pipeline built on top of Tensorflow
- Applied object detection pipeline for the detection of unwanted ducks
- Tools and Technology: C#, Python, C++, Tensorflow

Valogix · Software Intern July 2016 to Nov. 2018

- Developed a web application for keeping track of the over 100 deployed applications
- Resolved bugs and incorporated features in the existing Valogix code base
- Tools and Technology: Java, Spring, Spring Boot, PostgreSQL, Groovy

Activities

Electric Vehicle Team

Firmware Lead May 2020 to May 2022
Firmware Member Dec. 2018 to May 2020

- Develop a custom software library for developing firmware on EVT produced hardware (EVT-core)
  - Produce object oriented based software layed on top of the STM32 Hardware Abstraction Layer (HAL)
  - Wrote drivers to support various communication protocols in EVT-core including CAN, UART, I2C, and PWM
- Designed and developed firmware for the EVT produced battery management system
- Added support for CANopen to EVT-core for communication across the motorcycle systems