Spencer Neilan

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Objective

Engineer with 7 years of experience in IoT, Security, Embedded Systems, AI, and Computer Vision. Looking for a great team!

Programming Languages

C (Ninja), C++ (Ninja),Shell/Posix/Linux (Ninja), Python (Ninja), Javascript/Vue.JS (Proficient), CSS (proficient), Matlab (proficient), C# (proficient), Java (novice), Rust(novice), Solidity (novice)

Software Skills

Embedded Linux, IoT, Cybersecurity, AWS, GCP, Network engineering, Frontend development, Solidity, SolidWorks, Altium, Open Source/GNU/FSF, containerization, continuous integration testing of embedded devices. Coursera DeepLearning.AI specialization Udemy: Blockchain Developer bootcamp

Work Experience

Sensormatic (Formerly Shoppertrak)----------Lead QA Automation Engineer----------October 2020 – Present

- Technical Lead for QA team of 20+ people, to guide the bring our QA automation to the next level.
- Built CI/CD pipeline for compiling, nightly builds, automatic testing and deployment of Orbit 8. (Embedded Linux, Jenkins)
- Converted our test framework from unittest to pytest, and into docker.
- Winner and main contributor of 3 company-wide hackathons, one of which resulted in a product that transformed the business, real time traffic data.
- Developed a new type of general adversarial network for image enhancement (Python, side project)
- Developed a blockchain based device authentication system for MQTT (Solidity, web3js)

Shoppertrak----------Embedded Design Engineer----------Dec 2014 –

- Wrote pilot project software for deep learning based computer vision analytics using intel OpenVINO framework. (C++, Python, Shell Scripting, GCP)
- Developer on a small team that designed the Orbit 8 traffic counter, saving 100$ per orbit from the previous model, an ARM linux based stereo vision camera using FPGA SoC technology. (Linux, C/C++, shell, VHDL)
- 3 patents, 2 granted, 1 in progress.
- Sole developer on ShopperTrak's main product, the ST600, the communication gateway for the sensor devices in a retail store. They install 10,000 units a year. (Linux, C/C++, Posix Shell)
- Designed an MQTT Client in for reporting traffic data and device health in near realtime and high availability. (C++)
- Designed device to device automatic SSH encryption system. (Shell scripts, C++)
- Redesigned TLS client for improved security and certificate management, and maintained improvements based on newly published CVEs. (C++/Shell)
- Developed and maintained our device provisioning software, DeviceLoader. (Java)
- Designed automated tests in python and continuous integration for device regression testing. (Python)
- Led the team in adopting AGILE development processes, and improved QA processes.

Buildthis LLC----------Contractor----------July – Sept 2014

- Developed a prototype machine vision application for a Raspberry Pi to detect vandalism on billboards. (MATLAB)
- AGILE environment.

NASA Johnson Space Center----------Student Intern----------June – August 2013

- Developed computer vision application to guide a robot on the user's gaze on a video for use in a psychological experiment in the human interfacing field.
- Collaborated with experimenters to form design requirements, and evaluated multiple alternatives.
- Designed a new technique with just a $10 CMOS Camera mounted on glasses, without infrared.

NASA Johnson Space Center----------Student Intern----------June – August 2012

- Created a 3D graphic application for spatially immersive displays using distributed computing.
- Created an animated scene of the ISS in orbit around the earth for an immersive spacewalk experience, navigated with a 6-axis joystick.
- Utilized Unity3D, Blender, LightWave, Ubuntu, Bash Shell Scripts, C#, Javascript, XML.

NASA Wallops Flight Facility----------Student Intern----------June – August 2011

- Prototyped an H-bridge magnetorquer control circuit and wrote code to interface it with the satellite flight computer.
- Selected components that satisfied certain low power requirements for a space environment.
- Wrote firmware for a PIC18 in C.

Senior Design Project----------Milwaukee, WI----------September – May 2014

- Worked on a team of 4 with a sponsor company, Team 221 LLC, in Houston, TX to collaboratively develop an Arduino Due based embedded development board with onboard peripherals ideal for robotics.
- Designed hardware and developed libraries to interface with the various peripherals on the board: WiFi, Bluetooth, Ethernet, SD Card, USB OTG, an ARM Cortex M3 Processor, CAN Bus, battery monitor, and quadrature.
- Designed a 4 layer board in EagleCAD, manufactured, soldered, and tested.

Education

Milwaukee School of Engineering (MSOE) — Graduated May 2014
B.S. Electrical Engineering, Physics minor — GPA 3.64/4.00

Achievements and Projects

- Blackbelt in Shotokan Karate.
- Three internship tours at, and two technical papers published to NASA.
- Made a VR game for Google Cardboard on iOS, which uses machine learning. (Unity/C#).
- Self taught frontend+backend web developer.