Brian Hill

Haymarket, VA | 703-946-1545 | hillbr20@gmail.com
LinkedIn: brian-hill-0082161a3 | Github @TrojanPinata | brianchill.us/

Summary

Software developer well-versed in embedded systems and microcontroller programming. Driven to implement robust, real-world solutions applicable to a wide range of situations while focusing on meeting and exceeding customer expectations. Strong knowledge in both software development and hardware engineering, providing a blend of both skill sets while implementing complex solutions. Brings a unique outlook and energy to new situations and environments providing valued solutions to a variety of customers.

Clearance

Active Public Trust Clearance *May 2023*

Work Experience

Software Developer Chantilly, VA
CACI International Inc. *May 2023 – Present*

- Modified and develop SQL scripts for conversion between government financial systems.
- Developed Python-Selenium-based Robotic Process Automation (RPA) software for automated testing of government financial software (Momentum).
- Utilized government-based Agile approach to efficiently iterate on customer requirements.
- Deployed and release solutions to client with minimal downtime and confirmed functionality.
- Tested and maintained current and legacy systems to validate performance and compliance with current systems.
- Analyzed client requirements and create necessary documentation for future development and integration.
- Worked with experienced team members to design workflows surrounding previous software solutions.
- Evaluated and implemented new interface technologies to provide fresh and intuitive user experience.
- Developed Node-based GUI for Python backend in ReactJS.

Sales Associate and Print Specialist Manassas, VA
The UPS Store *November 2020 – March 2025*

- Managed Enterprise IT network and point of sales systems to handle high traffic with minimal downtime.
- Upgraded and install Point of Sale (POS) systems to meet corporate guidelines.
- Implemented methods to efficiently manage multiple enterprise grade network printers.
- Worked with a team to ensure the stability and integrity products through logistics process.
- Designed client products using mainstream graphic design software.

Skills & Attributions

Languages: Python, C/C++, Rust, Java, PL/SQL, MATLAB, VHDL, JS/Web, Bash
Software: MS Office, Adobe CC, Autodesk Inventor, Xilinx Vivado/Vitis, KiCAD, PSpice, Docker, Git, Jenkins, SQL Developer, Nginx/Apache, Node, OpenCV, Linux, Proxmox
Development Focuses: Microcontrollers, Embedded Systems, Internet of Things, Autonomous Control Systems, Embedded Linux Systems, FPGAs

Education

George Mason University Fairfax, VA
Computer Engineering, BS

- Notable Courses: Circuit Analysis I/II, Data Structures and Embedded Systems Programming, Continuous-Time Signals and Systems, Networking, Operating Systems, Computer Architecture, Embedded Systems, Linear Electronics, FPGA Design in VHDL, Microcontrollers, Internet of Things, Mobile Robots

Awards & Certifications

AWS Cloud Practitioner Accreditation | June 2023
GMU Tech Talent Awards | Multiple Years

Personal Projects & Research

Autonomous Lighter Than Air Vehicle Capstone
mason.gmu.edu/ nyao4/

- Office of Naval Research sponsored project via GMU CIAO Lab.
- Developed unique shared Center of Gravity/Center of Buoancy blimp from common components for high reproducibility while maintaining high maneuverability.
- Trained object detection model (YOLOv8) in high performance formats for reduced latency and to allow for accurate and fast detection.
- Designed and implemented fully functioning object detection, localization, and controls system in both C++ and Python.
- Tested and deployed codebases on battery constrained hardware with four motor stabilization system and sensors.

Keyboard Design
brianchill.us/#/Keyboard & https://github.com/TrojanPinata/Model-B

- Designed PCB for external manufacturing using chosen layouts, and configuration of all onboard components.
- Added functionality to existing firmware and documented changes/code on Github.
- Wrote bill of materials and chose cost effective components for design which were implemented into final product.
- Designed and manufactured ergonomic housing to contain assembly while remaining unique against other designs on the market.

Open-Source Macropad
brianchill.us/#/Macropad & https://github.com/TrojanPinata/Macropad-Pico

- Designed simple, easy to manufacture 3D printed case, printable on any 3D printer.
- Wrote firmware based on existing, widely used software to promote consitancy between similar keyboards.
- Engineered PCB for cost effective production with alternatives to reduce reliance on third party manufacturing.

Drawing Robot
brianchill.us/#/PiDraw

- Developed program for decoding location instructions and drawing on custom designed hardware.
- Designed CAD model of all components for low material 3D printing and structural stability during high stress movements.
- Used OpenCV to process images and generate location instructions from input images.

OpAmp-based Line Following Robot
brianchill.us/#/LineFollower

- Designed Opamp based platform to drive four motors - Controlled by photoresistor-LED, TX-RX design.
- Integrated low-budget off the shelf components into design to satisfy budget requirements.
- Designed and manufactured PCB by hand for faster design-manufacturing turn around.