Violet Colwell

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Education

BS ECE, MS CS: Worcester Polytechnic Institute [2022-Present]: Real-Time Embedded Systems | Programming Language Design | On-Device Deep Learning | Advanced Cryptography | Cross-Cultural Communications | Achieving Effective Operations | Big Data Management and Analytics | Data Visualization | Computer Organization and Design | Discrete Time Signal And System Analysis

Skills

Software

Programming Languages: HTML | CSS | Javascript | Typescript | C (Embedded) | C++ | Rust | Bash | Python | Java | Ruby (RoR) | MATLAB

Frameworks, Libraries, and Miscelaneous Technologies: Node | ReactJS | React Native | NextJS | AWS | Docker | MySQL | MariaDB | Firebase | MongoDB | Hadoop | Git | Magento | Laravel | Auth0 | GraphQL | NGINX | Apache 2 | PyTorch | Tensorflow

Web and Mobile Development: Designing and building highly-performant web and mobile applications. Experience includes building secure APIs, backends, and robust/accessible frontends. Also includes Studies in User Experience and Usability.

System Administration: Installing and admistering MacOS, Windows, and Linux (Arch, Ubuntu, Debian) in both desktop and server settings. Creating, updating, securing, and backing up, servers running a variety of stacks in AWS.

Hardware

Development Boards and Chips: MAX78000 | Raspberry Pi | Arduino | NXP FRDM | Particle | TI LaunchPad | ESP-32 | AVR | NXP MC09

Projects: SateLights | Groovebox | Logic Analyzer | Bit-Banged Serial Port | Raspberry Pi Zero Facial Recognition Device | Wii Nunchuk I2C Library | MIDI Library | 7 Segment Display Library | LCD Display Library

Frameworks, Software, and Tools: CodeStudio | Arduino | CodeWarrior for NXP | ESP IoT Development Framework | AVRDUDE | Maxim ai8x | Analog Devices MSDK

Experience

Undisclosed Startup [2024 - Present]
Full stack developer and development lead for mobile and web application prototype.

WPI Music Perception and Robotics Lab [2025 - Present]
Developing devices at the intersection of human-robotic interfaces, machine learning, generative music, and sensor signal processing.

WPI BASH Lab [2023 - Present]
Researching distributed machine learning on Low-Power edge devices.

Eduporium [March 2022 - 2024]

User Analytics System: Designed and built a user analytics system that generates nightly user metrics with a corresponding web app for control and data display. Primarily built with Python, NextJS, Docker, and AWS.

Magento Development and Maintenance: Fixing bugs and adding features in Magento, increasing SEO, performance, and security of main site, and performing updates.