Bilal Zakaria

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As a motivated engineer, I bring a keen eye for detail and strong problem-solving skills to the table. Proficient in organization and comfortable in fast-paced settings, I consider myself a team player with expertise in requirements analysis and solution execution. My aim is to exceed expectations in a dynamic engineering role, contributing my skills and continuously advancing in the field. All projects below are attached with a link for code explanations of the projects.

**EDUCATION**

**Middle Tennessee State University Murfreesboro, Tennessee**

*Bachelor of Science in Mechatronics Engineering with a concentration in CS* Graduation: **May 2023**

* **Minors:** Computer Science, Mathematics GPA**:** 4.0 / 4.0 (Rank #1)

**WORK & LEADERSHIP EXPERIENCE**

**Markem Imaje (Dover Corp)** **Remote**

*Software Solution Engineer* June 2023 – Current

* Leveraged the proprietary CoLOS Applications software toolkit to custom design and implement Web UIs tailored to large customers' specific requirements, enhancing product identification and traceability solutions.
* Used CoLOS, a .NET framework built atop of VB, to create dynamic workflows, operator pages, for the user to easily print labels with varying information.
* Utilized MSSQL to write queries, setup tables, and frequently interact with customer ERP systems. Updated stored procedures, reducing processing time and introducing new features.

**Automation NTH** **LaVergne, Tennessee**

*Controls Engineer Intern* May 2022– August 2022

* Successfully devised the AutoCAD Electrical drawings for a B&R automation panel, which included schematics, footprints, and BOM.
* Programmed a MicroLogix 1100 PLC using an inspection sensor, reject sensor, and reject solenoid via RsLogix 500 to streamline the production process by reducing downtime.
* Successfully troubleshot hardware and software issues with PLCs, HMIs, and networks; increased uptime of intern project via Studio 5000.

**PROFESSIONAL PROJECTS (***open source)*

**Project 4-Sight: Electronic Travel Aid (**[***Link***](https://github.com/sometimesB/4-Sight)***)* August 2022 – May 2023**

*Full Stack Engineer & Embedded Engineer*

* Project 4-Sight is an advanced wearable device for the visually impaired, featuring enhanced obstacle detection, extended range, navigation capabilities, and safety sensors. The goal is to create an affordable and customizable jacket with an intuitive design for daily use, providing users with haptic feedback and a website interface for navigation and routing management.
* Created an IoT platform with a website and Arduino hardware. It lets users easily manage navigation and keep an eye on the jacket's performance in real-time. The user-friendly interface is designed using HTML, CSS, and JS, while the back end runs on PHP and MySQL.
* I created a robust back-end API using PHP and MySQL for storing user records and PHP to ensure seamless communication between the website and hardware components. Back-end was fully fleshed out to allow for thousands of concurrent jacket users simultaneously.
* Developed embedded code for Arduino to enable communication between the wearable device and the IoT platform.

**Cryptocurrency Arbitrage Bot (Multi threaded) (**[***Link***](https://github.com/sometimesb/EnergiSuite)**) April 2021 – Feb 2024**

* Created a real-time arbitrage detection bot that scans multiple cryptocurrency websites for price differences and notifies me instantly through Discord. Managed to achieve an impressive 4000% return at its peak.
* Used Python and batch scripts for the project, with Selenium for efficient data scraping, open-source APIs for gathering pricing info, and simple math to spot lucrative arbitrage opportunities. Created an easy to use GUI available for download on Github. Full modularity is included in the GUI.

**SKILLS, ACTIVITIES & INTERESTS**

**Technical Skills:**

● Python, PHP, MySQL, SQL Server, Microsoft WorkFlows, HTML, CSS, JS, Relational databases, NI Multisim (Spice), Linux (ubuntu), circuit design, Git, Cognex, Camera Vision systems, JIRA, Agile Methodology, .NET, Electrical Design, , Visual Studio Code, JSON, REST API’s.

● Planning, Organizing, Requirements Gathering, Testing, Execution, Deployment, Implementation.