Imran Nasir

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Executive Summary

I'm a software engineer with hands-on experience in embedded systems, MATLAB/Simulink, and automation scripting. At McLaren Automotive, I developed toolkits and pipelines that streamlined validation workflows and reduced manual effort. I focus on building scalable, data-driven solutions believing that clean data and strong structure are key to engineering efficiency. I work with intent, follow agile and requirement-driven practices, and aim to turn every line of code into meaningful impact.

Skills

Languages: Python, MATLAB/Simulink, JavaScript/TypeScript, C/C++, SQL/KQL, Bash.

Technologies & Tools: Git, SVN, Jenkins, Artifactory, JAMA, DOORS, Jira, Postman, Swagger, Azure, MATLAB API.

Frameworks and Libraries: Express.js, Next.js, React, Flask, Pandas, NumPy.

Automation & DevOps: CI/CD Pipelines, Unit Testing Frameworks, Scripting for Tooling and Environment Setup, Test Rig Integration.

Embedded & Hardware: ECU Flashing, dSPACE SCALEXIO, Simulink Model Validation, Arduino, ESP32.

Experience

McLaren Automotive Ltd, Graduate Intern — Woking, UK — Jul 2024 – Jun 2025

- Developed scalable backend infrastructure using Express.js, TypeScript, and SQL Server, paired with a Next.js frontend for real-time data visualization. Fully documented REST APIs with Swagger and tested endpoints via Postman.
- Created MATLAB toolkits for end-to-end automation scripts for Simulink model validation, reducing manual test effort by over 80%. Integrated boundary testing and custom model script to cut review times by 40%.
- Built Python tools to manage Git/SVN repo environments supporting 20+ repositories in one environment, ensuring version control sync and automating environment setup.
- Led DevOps automation initiatives, including CI/CD pipeline development and test rig integration. Administered Jenkins, Artifactory, and user permissions across critical engineering tools.

American University of Bahrain, D-Lab, Web Developer — Riffa, Bahrain — Jan 2024 – Jun 2024

- Developed and deployed a full-stack e-commerce platform using Next.js, Supabase, and Three.js to streamline access to 3D printing lab services.
- Enabled real-time 3D model previews for users, improving submission accuracy and enhancing the overall user experience.

Algorithmics Manama, Programming Instructor — Riffa, Bahrain — Jan 2024 – Jun 2024

- Taught programming fundamentals to students aged 10–16 using Python, C++ (via Unity), and visual programming tools like Scratch.
- Delivered engaging hybrid lessons focused on computational thinking, game development, and problem-solving skills.

Projects

Smart Wireless Sensor for Machine Health Monitoring Link to Project

- Designed and implemented a MEMS-based ESP32 sensor system to monitor gearbox vibrations, using real-time data processing and TSA/FFT for early fault detection.
- Built a React-based UI, integrated a Supabase cloud SQL database, and streamlined time-series analysis through MATLAB API integration.

Farz: Machine Learning Trash Sorting Bin Link to Project

- Built an automated trash classifier using OpenCV and a camera module to capture and predict material types with 98% model accuracy.
- Integrated Raspberry Pi and Arduino with a multiplexer and motor system for physical actuation; won "Best Product of the Year" in a startup simulation competition.

Grade Management App Link to Project

- Developed a full-stack grade tracking app using React and Node.js/Express; ensured modular and scalable code structure using agile methodology.
- Acted as Scrum Master, leading weekly standups and managing GitHub Projects for team coordination, progress tracking, and version control.

Lost and Found Windows App Link to Project

- Developed a desktop app using Java and JavaFX for university students to report and track lost items.
- Followed solid OOP practices and implemented MVC architecture for maintainability and clear separation of concerns.

Education

BS **American University of Bahrain**, Computer Engineering — Sep 2020 – Jun 2024

- Honored as an AUBH Active Citizen.
- Dean's List 2021-2023 and Founder and President of the Sustainability Club.
- Teaching Assistant: Introduction to Machine Learning and Data Analytics (CMPE 390) in Fall 2023 and Principles of Electrical Engineering (ELEC 204) in Spring 2024.
- **Relevant Coursework:** Digital Circuits, Operating Systems, Embedded Systems, Software Design and Engineering, Windows Programming, Machine Learning and Data Analytics, and Microprocessors.

Publications

Smart Wireless Sensor for Machine's Health Condition Monitoring Jun 2024
Imran Nasir, Shahd Hamad, Ali Abdulla
Link to Paper