

# Nawaz Warsi

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## Experience

### Tata Elxsi

Jun 2023 – Present

Software Engineer

Bangalore, India

- Automated system validation workflows using **Python** and proprietary scripting for embedded software modules on **HIL** benches, achieving **95%+ test coverage** and enabling continuous integration through **CI/CD pipelines (Jenkins)**.
- Developed **C++** simulation modules and system stubs for real-time control validation, applying **object-oriented programming** and contributing to embedded software integration within **real-time systems**.
- Designed and maintained 150+ robust system and edge-case test scenarios; optimized automation scripts to reduce execution time by **30%**, improving early defect detection rates by **25%**.
- Analyzed large-scale sensor and log data using **Python (pandas, NumPy, matplotlib)** for failure diagnostics and KPI reporting; collaborated with developers to debug issues using **GDB, CAN tools**, and integrated outputs into test automation.

### Algo University

Sep 2024 – Present

SDE Externship

Hyderabad, India (Remote)

- Developed a scalable **online code execution platform** using the **MERN stack**, enabling users to write, compile, and run programs in **C++, Python, and Java** directly in the browser without local setup.
- Built the full-stack web application using **React.js** for frontend, **Node.js** and **Express.js** for backend APIs, and **MongoDB** for data persistence, supporting real-time user interaction and execution workflows.
- Designed and implemented RESTful APIs for secure code execution, user authentication, and submission handling; containerized backend services using **Docker** to ensure portability, scalability, and environment consistency.
- Deployed the solution with **AWS EC2** and **ECR** for backend infrastructure and **Vercel** for frontend hosting, achieving low-latency response times and ensuring high availability under concurrent usage.

## Projects

### Drowsiness Detection. | C++, OpenCV, Computer Vision, Machine Learning, Image Processing, Real-Time Systems

- Developed a real-time **driver drowsiness detection system** using **C++** and **OpenCV** for continuous facial and ocular monitoring.
- Implemented machine learning-based heuristics to reliably detect signs of fatigue such as prolonged eye closure and yawning.
- Integrated real-time **audio and visual alerts** to immediately notify drivers upon detecting potential drowsiness.
- Optimized the image processing pipeline to improve frame processing speed, reduce false positives, and ensure consistent system performance in real-world driving conditions.

### House Easy | Python, Scikit-Learn, AWS, Flask, RESTful API, Excel, Postman

- Developed a web-based **house price prediction system** using **Python**, leveraging property features such as BHK, area, and number of bathrooms for input.
- Implemented a **Linear Regression model** using **Scikit-Learn** to deliver accurate and interpretable price predictions.
- Containerized and deployed the model using **Flask** on an **AWS EC2** instance, ensuring scalability and smooth user experience.
- Exposed model inference via **RESTful APIs** for real-time client-server communication and easy integration.

## Technical Skills

**Programming Languages:** C, C++, Python, JavaScript, SQL, HTML & CSS

**Libraries/Frameworks:** Node.js, Express.js, React.js, MongoDB, RESTful APIs

**Developer Tools:** VS Code, Git, Postman, AWS, Docker

**Other:** Data Structures and Algorithms, DBMS, OOP Concepts, Operating System, Networking

## Achievements

- Solved **800+ Data Structures and Algorithmic** problems on coding platforms like **LeetCode** and **GFG**.
- LeetCode Contest Rating: **1660**, view profile.
- Secured World Rank **1750** among 34K+ participants in LeetCode Weekly Contest 415 (top **5%**).
- Earned **5★** in **C++, Problem Solving**, and **SQL** on **HackerRank**.

## Education

Lovely Professional University

B.Tech in Computer Science and Engineering (CSE)

July 2019 – May 2023

CGPA: 8.08