GUNJESH KUMAR

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Education

Gayatri Vidya Parishad College of Engineering (A) — Visakhapatnam, India
B.Tech in Information Technology, ***CGPA: 7.91/10*** — *June 2022 – Present*

- Core Coursework: Data Structures & Algorithms, Object-Oriented Programming, Software Engineering, DBMS, OS, Computer Networks.

Experience

CSIR - Central Road Research Institute — New Delhi, India
Software Engineering Intern — *Apr – May 2025*

- Worked on a Flask-based microservice to process dashcam video and generate real-time road safety scores.
- Integrated **YOLOX** and **ByteTrack** (PyTorch) for object detection and multi-object tracking under occlusions.
- Designed a custom safety scoring algorithm using metrics like traffic density, TTC, and pedestrian proximity.
- Optimized OpenCV pipeline with multithreading, improving frame processing throughput by 35%.

GirlScript Summer of Code — Remote, India
Open Source Contributor — *May – Aug 2024*

- Optimized JavaScript code in open-source projects, reducing API latency by 20%.
- Developed unit tests using Jest and PyTest, achieving 85%+ code coverage.
- Collaborated via Git, Jira, and Agile sprints, performing code reviews and mentoring interns.

Projects

Counselling Forms Platform | *React, Node.js, Express, Socket.io, JWT, MongoDB* — GitHub

- Implemented a multi-step dynamic form in **React**, complete with **real-time validation**, **conditional rendering**, and global state management via Context API, improving user input accuracy and reducing form errors.
- Developed **RESTful APIs** in Express with **MongoDB schema** design, including indexing and middleware for **CRUD operations**, supporting 500+ submissions daily and ensuring **data consistency**.

Road Safety Index Scoring System | *Python, Flask, TensorFlow, PyTorch, YOLOX, Docker* — GitHub

- Preprocessed road video datasets in **Python**, applying frame extraction, normalization, and basic augmentation; trained a custom **YOLOX model** in **PyTorch** to detect five hazard types with **90%. mAP**
- Built a **Flask backend** exposing hazard detection and risk scores via **REST** endpoints, and created a simple web interface to visualize detection boxes and dynamic risk metrics for end-user interpretation.

Technical Skills

- **Languages:** C, C++, Python, JavaScript, TypeScript, HTML, CSS
- **Frameworks & Libraries:** React, Angular, Node, Express, Spring Boot
- **Databases:** MongoDB, MySQL, PostgreSQL, Firebase
- **Tools:** Git, SonarQube, Docker, Postman, Jenkins, Swagger, AWS
- **Practices:** Git-based version control, RESTful API design, Microservices Architecture, Unit & Integration Testing, Dockerization, Agile Methodologies

Achievements

- Rated **1830+** on LeetCode, **3★ (1680+)** on CodeChef, and **1654** on GeeksforGeeks across 30+ contests.
- **700+** problems solved across LeetCode, GeeksforGeeks, and CodeChef
- As **Cybersecurity Lead at GDSC GVPCE**, organized **5+ CTF events** and expert sessions, impacting **100+ students**.
- **Top 50 Mentor** in GirlScript Summer of Code 2024, led **15+ contributors** to deliver **10+ open-source projects**.