

Ayushman Singh

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EDUCATION

Sardar Vallabhbhai National Institute of Technology

Bachelor of Technology in Computer Science and Engineering

- Current CGPA: 8.65/10.0

Surat, Gujarat

August 2024 – Present

Mount Index International School

Higher Secondary Certificate (CBSE)

- Score: 90.4%

2024

A.S.M.P. Public School

Secondary School Certificate (CBSE)

- Score: 95.2%

2022

EXPERIENCE

Summer Research Intern

May 2025 – June 2025

MNNIT Allahabad, Prayagraj

On-site

- Developed an AI-based **single-person tracking system in dense crowds** for Mahakumbh 2025 to aid public safety and surveillance.
- Implemented real-time **object detection and tracking** using **YOLO** with **OpenCV** and **NumPy**.
- Applied **Kalman Filter** and appearance-based re-identification to handle occlusions and identity switches.
- Conducted the project under the mentorship of **Dr. Anubhav Rawat**.

PROJECTS

Eco-Route AI | *Next.js, React, Firebase, PyTorch, OSRM API, Global Forest Watch API*

GitHub

- Built a multi-stakeholder platform for sustainable road planning and forest fire management using geospatial data.
- Developed eco-friendly route optimization using **OSRM API** and **PyTorch**-based ML models to minimize impact on forests and wildlife habitats.
- Implemented forest fire detection using satellite imagery for early response and monitoring.
- Designed dashboards for road usage, forest health, and environmental impact analytics.
- Integrated **Firebase authentication** and **Cloudinary image compression** for secure access and efficient media handling.

TransitFlow | *React, Node.js, Express, MongoDB*

Website | GitHub

- Built a one-stop transportation platform addressing urban mobility challenges as part of Web Wonders.
- Designed and integrated **Future Transport**, a visualization module showcasing next-generation transport systems.
- Developed responsive and modular UI components using React, ensuring cross-device compatibility.
- Collaborated in a team-based environment using Git for version control and feature integration.

Genesis | *React, Express, PyTorch, Firebase*

Website | GitHub

- Developed **Genesis**, a full-stack application for detecting AI-generated images using a deep learning model.
- Trained and fine-tuned a ConvNeXt image classification model in PyTorch to distinguish real and AI-generated images.
- Integrated the trained model with a React frontend and Express backend, including features such as Grad-CAM explanations, prediction history, and cloud-based image storage.

TECHNICAL SKILLS

Languages: Python, JavaScript, C++, C, HTML/CSS, SQL

Frameworks: React, Node.js, Express.js, FastAPI, Tailwind CSS

ML / Data: Scikit-learn, CatBoost, Pandas, NumPy, PyTorch, Feature Engineering, Regression Models

Computer Vision: YOLO, OpenCV

Databases: MongoDB, MySQL

Tools: Git, GitHub, Postman

COMPETITIVE PROGRAMMING

- LeetCode:** Max. Rating 1573, 600+ problems solved
- Codeforces:** Max. Rating 1121
- CodeChef:** Max. Rating 1243

ACHIEVEMENTS

- Secured **1st Rank** in **Web Wonders**, a web development competition organized by NIT Surat.
- Secured **AIR 948** among **2248 teams** in ICPC Asia Amritapuri Regional Online Preliminary Contest.