

# ABHISHEK PAL

Mumbai, Maharashtra

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## EDUCATION

Vidyalankar Institute of Technology

B.Tech - **CGPA - 9.71**

2022 - 2026

Mumbai, India

SMT. CHM College

HSC - Computer Science - **Percentage - 76.5%**

2020 - 2022

Thane, India

King Lord English High School

SSC - **Percentage - 88.60%**

2020

Thane, India

## COURSEWORK / SKILLS

- Data Structures & Algorithms
- Artificial Intelligence
- Machine Learning
- LLMs
- PyTorch
- Computer Vision
- Web Development
- Audio processing
- NLP

## PROJECTS

**NeuralTraffic** | YOLOv8, Python, OpenCV, Tkinter

04 2025

- Developed an AI-powered smart traffic light control system leveraging YOLOv8 for real-time vehicle detection and lane-wise prioritization.
- Assigned dynamic weights to different vehicle types (e.g., Motorcycle: 1, Car: 3, Truck/Bus: 5, Emergency: 50) to quantify lane congestion more meaningfully.
- Implemented a dynamic green signal allocator: the lane with the highest cumulative weight gets the longest green signal time.
- Integrated emergency vehicle override — upon ambulance detection, that lane is prioritized until the vehicle passes, then control resumes previous logic.
- Future scope includes integrating siren detection, GPS routing data, and deploying on edge devices like Raspberry Pi for real-world use.

**DraupadiAI** | Python, Librosa, Pyaudio, Tensorflow, ReactJS

10 2024

- About project **Draupadi-AI**
  - \* An AI-based mobile application enhancing women's safety through real-time voice recognition and anomaly detection.
  - \* Detects distress signals like screams or predefined keywords (e.g., "help me") and triggers alerts.
  - \* Sends emergency alerts with location and audio clip to the Women Protection Community.
  - \* Includes features like 'I Am Safe' mode, hotspot crime location mapping, and LLaMA-based chatbot for crisis support.
  - \* Uses advanced ML techniques for continuous audio surveillance without interruption.
  - \* Integrates gesture recognition for additional emergency detection.
- [Demo video here](#)

**DSALizer** | HTML, CSS, ReactJS

11 2024

- DSALizer, an interactive visualization tool for sorting and searching algorithms, aimed at enhancing algorithm comprehension through real-time visualizations. Integrated a range of algorithms, with dynamic user input and adjustable parameters. Designed an intuitive interface that supports hands-on learning and promotes a deeper understanding of algorithmic performance and complexity analysis.

## ACHIEVEMENTS

- **NeuralTraffic** won **2nd Prize** at the **Tantravihar State-Level Project Competition**, showcasing innovation in AI-based traffic management. [[View Certificate](#)]
- Ranked in the **Top 10%** of my college for academic excellence.
- Secured a place in the **Top 32** at **Mumbai Hacks**, the world's largest GenAI hackathon, which set a **Guinness World Record**.

TECHNICAL SKILLS

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**Languages:** Python, Java, C, C++, JavaScript, SQL  
**Machine Learning & AI:** PyTorch, TensorFlow, Computer Vision, Audio Processing (Librosa, PyAudio)  
**Developer Tools:** VS Code, Google Colab, Anaconda  
**Technologies/Frameworks:** Linux, Git, GitHub, ReactJS

EXTRACURRICULAR


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Vrikshit Foundation

2024 – Present

Member

Mumbai

- Beach Clean , Planting Drive 

CERTIFICATIONS

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- Machine Learning - Udemy
  - Python for Data Science - XIE
- Java
  - SQL