

MUHAMMAD ABRAR R

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Education

Vellore Institute of Technology, Chennai, India.

July 2021 – Current

BTech Computer Science and Engineering

CGPA: 9.13

Maharishi Vidya Mandir Sr. Sec. School, Chennai, India.

July 2007 - May 2021

Percentage: 96

Experience

Viseka Global Private Limited

May 2024

Product Development Summer Intern

Chennai, India

- Engineered a highly functional **Customer Chatbot** powered by **LLama3** an open source LLM; enabled seamless product inquiries and efficient order placement while enhancing user engagement through **real-time inventory management support by 33%**.
- Developed the complete application using the **Flask** framework and deployed it via **Ngrok** for external access.
- Analyzed user interactions with the integrated bot to identify **bottlenecks in inventory management processes**; Refined targeted solutions leading to an enhanced average query resolution time of under **3 minutes**.

Projects

Smart Traffic Signal Routing System

[Source Code](#)

- Led a team of 3 to build an **AI-driven system** that schedules traffic based on **real-time aerial imagery**.
- Integrated **RTMP Protocol** on a DJI drone to analyze traffic densities, enhancing **vehicle congestion management** across **three monitored intersections within the campus**.

Vehicle Rental System

[Source Code](#)

- Built a backend with **FastAPI** and **MongoDB** for efficient vehicle and booking management, enabling seamless **CRUD** operations.
- Implemented **JWT authentication** with role-based access control for admins and users.
- Designed REST APIs for **vehicle listings, user bookings, and payment workflows**, improving the booking process and system reliability.

IoT-Based Smart Garbage Collection and Route Optimization System

[Source Code](#)

- Developed a **distributed network of IoT-enabled smart dustbins** capable of relaying real-time **fill status and location** to a central server, optimizing waste collection routes and improving **operational efficiency by 25%**.
- Created an interactive interface for tracking location and capacity of over 300 smart dustbins; provided insights leading to **streamlined asset utilization rates** during peak collection hours without increasing labor costs.

Technical Skills

Languages: Python, Java, C , C++ , CPP, HTML, CSS

Frontend Frameworks: ReactJS, Angular, Bootstrap, TailwindCSS

Backend Frameworks: FastAPI, Express, NodeJS

Machine Learning: Tensorflow, Large Language Models LLMs, Deep Learning, Ollama, Huggingface

Databases: MongoDB, MySQL, SQLite

Tools & Technologies: Git, Linux, RESTful APIs, Robot Operating System, UiPath

Related Coursework: Data Structures, Algorithms, SDLC, Object-Oriented Programming, Software Development, Automation, Software Application, Operating Systems, Computer Networks, Database Systems, Computer Architecture

Coding: 1600+ Leetcode Contest Rating, 5 Star Coder @ HackerRank

Soft Skills: Analysis, Team Collaboration and Communication, Quick Learning, Research.

Honours and Awards

First Place, University-Level Hackathon

November 2024

Stack: Yolo v8, Gemini API

VIT Chennai

- Led the project "Intelligence of Things," which focused on spatial information processing of Vision Data for enhanced contextual understanding.

Top 50, Amazon ML Challenge

September 2024

Stack: Idefics2 VLM

Amazon

- Ranked in the top **0.06%** (out of 76,000+ participants) in the Amazon ML Challenge, earning a pre-placement interview opportunity.