

VEDANK WAKALKAR

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Education

Vishwakarma Institute of Information Technology

2022 – 2026

Bachelor of Technology in Computer Science in AIML, CGPA:8.59

Pune, Maharashtra

Industry Projects

Piyush IT Services

Jan 2025 – May 2025

ML-Driven ECU Failover System

Pune, Maharashtra

- Designed a real-time ECU attack response dashboard using Streamlit, integrating anomaly-based threat detection and interactive visualization for electric vehicle (EV) networks.
- Constructed a K-Nearest Neighbors-based failover recommendation engine by preprocessing high-dimensional ECU telemetry data and training models to suggest resilient backup ECUs during cyberattacks.

Syngenta (Academic Project)

Aug 2024 – Dec 2024

Farm Assistant Chatbot

Pune, Maharashtra

- Architected a full-stack AI-powered crop and fertilizer recommendation chatbot using FastAPI and React, enabling farmers to interact via conversational UI for real-time agricultural support.
- Implemented RESTful APIs embedding ML models for context-aware crop and fertilizer predictions, and integrated Groq's LLaMA 3-based LLM to handle open-ended natural language queries.
- Developed a responsive React frontend supporting dual-mode input (structured free-form), with robust form validation and seamless backend interaction.

Projects

AskYourPDF | Next JS, Clerk, Express JS, BullMQ, Redis, LangChain, Qdrant

May 2025

Built an AI-powered PDF processing platform using Next.js, Express.js, and Clerk, supporting secure document uploads and semantic search functionalities.

- Orchestrated an asynchronous PDF parsing and embedding pipeline with BullMQ, Redis, LangChain, and Gemini 1.5 Flash, utilizing Qdrant for efficient semantic retrieval.
- Devised a scalable background job queue system to manage resource-intensive processing, significantly enhancing system responsiveness and throughput.

Cotton Disease Detection | FastAPI, React, Docker, Groq API

October 2024

- Developed a deep learning-based Cotton Disease Detection system with a 94% detection accuracy, advancing early identification capabilities for farmers..
- Created a machine learning recommender for crop and fertilizer suggestions, attaining 96% accuracy and improving agricultural decision-making.
- Established an end-to-end solution with FastAPI backend and React frontend, seamlessly connecting third-party APIs to deliver a reliable user experience.

Technical Skills

Languages: Python, JavaScript, TypeScript, SQL, HTML/CSS, Express JS

Developer Tools: Docker, GitHub, AWS

Technologies/Frameworks: Next.js, RESTful APIs, React.js, FastAPI, Node.js, Prisma ORM, Clerk, LangChain, BullMQ, Redis, Qdrant, CI/CD Pipelines

Database/Storage: MongoDB, PostgreSQL, Qdrant Vector DB

Certifications

IBM DevOps Capstone

Deep Learning Specialization

0-1 Full Stack Web Development Course

IBM DevOps and Software Engineering

Extra-Curricular Activities

Served as Associate Community Service Director at Rotaract Club of VIIT.