Akshan Verma

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EDUCATION

Vellore Institute of Technology, Chennai
B.Tech Computer Science and Engineering *2021-2025*

- **Related Coursework:** Data Structures & Algorithms, Objects & Design, Computer Organization & Programming, Operating Systems, Machine Learning, Artificial Intelligence, Object-Oriented Programming, Statistics & Applications

Mother's Global School

- CBSE(Class X) *2019*
- CBSE(Class XII) *2021*

SKILLS

Programming: Python, C++, C
Libraries/Frameworks/Tools: Langraph/Langchain, FastAPI, LLMs, NLP, Numpy, Pandas, Autogen, SciKit-learn, Matplotlib, Seaborn, OpenCV, PowerBI, MS Excel
Database: MySQL
Version Control: Git, GitHub

EXPERIENCE

VectoScalar Technologies
Generative Artificial Intelligence Intern *Dec'24 - Current*

- Developed generative AI-powered agentic features (Langchain, Autogen), including a workflow tool that reduced development effort by an estimated **30-40%**.
- Developed an **LLM-based** question-answering application for students, achieving a **92%** accuracy rate in answer generation.

Ascendiya Technologies
Software Development Intern *Nov'23 - Dec'23*

- Developed responsive interfaces with **react.js**, emphasizing reusable components and design
- Utilized **Git/Github** for version control and seamless collaboration within the development team

Defence Research and Development Organisation(DRDO)
AI Robustness Testing Research Intern *Nov'23 - Jan'24*

- Conducted robustness testing of **Tensorflow**-based AI models, identifying vulnerabilities and failure points. Improved model robustness by **6%** through adversarial training
- Integrated robustness testing seamlessly into the **Tensorflow-**based AI development lifecycle resulting in a more streamlined testing process and earlier detection of vulnerabilities.

PROJECTS

Personal Finance Agentic AI [Github]

- Developed a personal finance system with generative AI agents (Autogen/LangGraph) for budgeting, investment, and fraud detection, achieving a **95%** user satisfaction rating and reduction in fraudulent transaction alerts.
- Tech: FastAPI, Autogen/LangGraph, Pandas/NumPy, Hugging Face Transformers, MongoDB, React.js.

AI Based Dynamic API Rate Limiter[Github]

- Developed an AI-driven API rate limiting system using the token bucket algorithm and **LSTM**-based real-time traffic prediction, achieving a **15%** reduction in network traffic.
- IImplemented anomaly detection with **Isolation** Forest to identify and mitigate abnormal or abusive API usage

Virtual Mouse with Hand Gestures[Github]

- Developed a real-time virtual mouse application using hand gestures.
- Utilized **MediaPipe** for hand landmark detection, **OpenCV** for image processing and **PyAutoGUI/Pynput** for mouse control.

Multi-Modal and Multi-Lingual Chatbot Development[In-Progress]

- Developed a **Natural Language Processing (NLP)**- -based chatbot capable of handling text and voice inputs in multiple Indian local languages.
- Used **HuggingFace**, **Stable Diffusion**, other **APIs** for chatbot conversation/image generation and used **FastAPI** for backend integration .

ACTIVITIES

- Completed an online course for **Machine Learning(Supervised and Unsupervised)** on Coursera
- Placed among the top teams in a **GDSC hackathon** for innovative problem-solving and collaboration.