Vaibhav Tyagi

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Education

VIT Bhopal University — Bhopal, Madhya Pradesh
BTech in Computer Science and Engineering(CGPA:8.94) — *Sep 2022-Present*

Father Agnel School — Noida,Uttar Pradesh
XII th PCM+CS(Percentage:94.8) — *Apr 2021-Jun 2022*

Father Agnel School — Nodia,Uttar Pradesh
X th (Percentage:92.6) — *Apr 2019-Jun 2020*

Technical Skills

- Languages: Python,C++,SQL(MySQL),HTML/CSS
- Frameworks: PyTorch,Tensorflow,Numpy,Matplotlib,Pandas,plus expertise in Retrieval-Augmented Generation (RAG), Generative AI, Agentic AI
- Cloud & DevOps: AWS,Docker,CI/CD

Projects

CodeSynth|*Python,LangGraph,FastAPI,Groq* — Aug 2025-Sep2025

- Developed an AI-powered coding assistant that transforms natural language requests into complete, functional projects through multi-agent collaboration.
- Implemented modular agent architecture including Planner, Architect, and Coder agents to break down user inputs into detailed project plans and executable code files.
- Designed and built the system using **OpenAI OSS, Groq, and LangChain** ensuring clean code generation of Python, JavaScript, and CSS, file management, and real-time user interaction.
- Conducted end-to-end testing and optimized the assistant for diverse coding tasks including web applications, APIs, and utility tools, enhancing productivity and developer experience.

Hand Face Rapid Response System(HFRRS)|*Python,Tensorflow,OpenCV* — Feb 2024-May 2024

- Engineered an AI-powered recognition system with 95% predictive accuracy for **real-time gesture** and facial expression detection.
- Integrated 5+ web browser features to enhance user experience and interaction.
- Deployed an automated **email alert system** triggered by emergencies, reducing response time by 40%.
- Trained deep learning models using TensorFlow with over 100,000 labeled images, ensuring high precision.
- Optimized model inference speed and reduced latency by 30% through efficient algorithm implementation and hardware acceleration techniques.

SafeScan.ai|*XGBoost,Scikit,Python,Tensorflow* — Jan 2025-Feb 2025

- Developed an XGBoost-based breast cancer detection model using the **sklearn dataset**, achieving 98.24% accuracy in classifying malignant vs benign tumors.
- Curated feature selection process employing heatmaps for correlation analysis and feature importance scoring, enhancing model with **99.1% sensitivity** in identifying true positive malignant tumors.
- Streamlines the machine learning pipeline for clinical diagnostics using Python, reducing model training time by 40% through **ameliorate hyperparameter** configurations and efficient data preprocessing techniques.
- Implemented cross-validation and ensemble techniques to enhance model robustness and maintain consistent performance across diverse clinical datasets.
- Collaborated with clinical experts to interpret model results and integrate AI-driven insights into diagnostic workflows, improving early detection accuracy and aiding decision-making.

Co-Curriculars

- Cleared Dr. G Vishwanathan codeathon (top 10%) by solving algorithmic challenges in C++.
- IIT Madras Malware Safety Hackathon: Cleared 2 rigorous rounds among 500+ participants by developing a malware detection bot and increasing the SMOTE score using synthetic data augmentation.
- Certifications: Machine Learning Specialisation by Deeplearning.ai ↖, Enterprise Grade AI by IBM ↖