Ayush Agarwal

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Professional Summary

Software Developer skilled in C, C++, Python, and Data Structures & Algorithms (DSA). Experienced in developing scalable solutions using Generative AI, Transformer models, and the LangChain framework. Proven ability to build AI-driven applications and collaborate with cross-functional teams to deliver high-performance systems. Passionate about solving complex problems using cutting-edge technologies.

Experience

Member & Collaborator
Linpack Club, VIT Bhopal University *2024–Present*

- Collaborated on projects involving MATLAB and Artificial Intelligence.
- Participated in group discussions, workshops, and hands-on sessions to enhance technical and analytical skills.
- Contributed to team-based projects, fostering a collaborative learning environment.

Event Anchor
MATLABverse Nextwave Hackathon, Linpack Club, VIT Bhopal University *December 2024*

- Anchored a technical/cultural event, demonstrating strong public speaking and interpersonal skills.
- Facilitated smooth event execution and actively engaged with participants.
- Received positive feedback for clarity, confidence, and audience connection.

Projects

Video Manipulation Detection *Project Owner & Developer*
Deployment Link

- Developed an end-to-end AI system to detect video manipulation using object detection and optical flow analysis.
- Utilized **PyTorch**, **OpenCV**, and **Hugging Face Transformers** for frame processing and model inference.
- Built and deployed a **Streamlit** UI to enable video uploads, visualization, and report generation.
- Demonstrated expertise in computer vision, deep learning, and full-stack integration.

Medical Chat Summary and Risk Scoring System *Project Owner & Developer*
Deployment Link

- Designed a real-time summarization and risk prediction tool using **Streamlit** and **Python**.
- Integrated **Groq Cloud LLMs** to generate context-aware summaries of medical chat transcripts.
- Created and labeled a custom healthcare dataset for model training and evaluation.
- Implemented a **Random Forest Classifier** to assess patient risk based on extracted features.
- Managed the complete pipeline, including data preprocessing, model training, UI/UX design, and deployment.

Multimodal Emotion Recognition using WESAD Dataset *Project Owner & Developer*

- Built an end-to-end emotion recognition system using the **WESAD dataset**; evaluated **LDA**, **Random Forest**, **AdaBoost**, **Decision Tree**, and **KNN**.
- Performed signal processing and feature extraction on chest and wrist sensor data; identified optimal sensor-model combinations using cross-validated metrics.

Education

B.Tech in Computer Science and Engineering (Core)
VIT Bhopal University *Expected Graduation: 2027*

- GPA: 8.60
- Relevant Coursework: Artificial Intelligence & Machine Learning, Object-Oriented Programming, Data Structures & Algorithms

Skills

Programming: Python, Java, C++
Frameworks/Tools: TensorFlow, PyTorch, Transformers, OpenCV, Git
Data Analysis: Pandas, NumPy, SQL
Soft Skills: Communication, Public Speaking, Team Collaboration, Leadership, Decision-Making, Critical Thinking, Time Management

Certifications

- **OOPS Concepts in C++** — CodeChef [Link]
- **Introduction to Large Language Models** — Google Cloud Skill Boost [Link]
- **OOPS Concepts in Python** — CodeChef [Link]
- **The Bits and Bytes of Computer Networking** — Coursera [Link]
- **Fundamentals in AI and ML** — Vityarthi [Link]
- **Generative AI** — Google Cloud Skill Boost [Link]