Vipransh Ojha

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Education

VIT Bhopal University — Bhopal, India
B.Tech in Computer Science and Engineering (AI & ML Specialization) — Sep 2023 – May 2027 (Expected)

Technical Skills

Languages: Python, TypeScript, JavaScript, C++, Java, SQL, HTML5, CSS3

Web Development & Backend: React, Node.js, Express.js, Flask, FastAPI, REST APIs, Tailwind CSS

Databases & Cloud: MongoDB, PostgreSQL, SQLite, AWS Cloud Services, Docker, Git, Linux

AI/ML & Data Science: TensorFlow, PyTorch, Scikit-learn, OpenCV, Keras, Pandas, NumPy, NLP

Developer Tools & Libraries: OpenAI APIs, Google TTS, Whisper, MediaPipe, Pygame, Matplotlib

Experience

Software Development Intern — New Delhi, India
BISAG-N (MeitY, Government of India) — May 2025 – Jun 2025

- Deployed a full-stack location recommendation system for 500+ users with 85% recommendation accuracy.
- Developed content-based filtering and collaborative filtering algorithms using Python and Scikit-learn.
- Architected a scalable Flask backend with PostgreSQL, processing over 100 queries per second.
- Crafted a responsive user interface with interactive mapping which improved user engagement by 25%.

Research Intern (SERB Sponsored Project) — Bhopal, India
VIT Bhopal University — May 2024 – Jun 2024

- Built 'MolSpectra', a molecular visualization tool from scratch for a computational chemistry research project (SERB Grant No. CRG/2022/002761).
- Engineered an interface to integrate 5+ quantum chemistry packages, including Gaussian and GAMESS, automating simulation workflows for researchers.
- Created the application's GUI using PyQt and integrated 3D molecular rendering with GLEW, streamlining the workflow from structure creation to calculation.

Projects

Dikastirio - AI Assistant for E-Courtroom Proceedings — Dec 2025 – Present

- Built a Unity VR environment for spatial visualization, cutting evidence retrieval time by 40%.
- Engineered a local RAG pipeline (LangChain, Llama 3) for secure analysis with zero data leakage.
- Integrated voice and gesture controls to streamline review, reducing interaction steps by 30%.
- Optimized rendering to maintain 90 FPS for large datasets on standalone VR hardware.

Forensic Identification using Dental Radiology — Aug 2025 – Oct 2025

- Constructed an automated forensic identification system with 92% accuracy in matching dental records.
- Trained a Siamese Neural Network on the DENTEX dataset to compare radiographs.
- Built a Flask-based web interface for experts to upload and analyze AM/PM records efficiently.
- Optimized the system to process over 1,000 records per hour, reducing identification time by 90%.

SpeechSync - Voice-to-Text Synchronization System — Oct 2024 – Dec 2024

- Formulated a real-time voice-to-text synchronization system with 95% transcript alignment accuracy.
- Executed advanced speech processing pipelines using Python and NLP, handling 10+ hours of audio data.
- Fabricated an intuitive and user-friendly interface that improved transcript review speed by 30%.
- Revamped overall system performance for faster processing, reducing synchronization delays by 40%.

Achievements & Activities

- Finalist in the National Buildathon organized by NASSCOM and Gnani.ai.
- Solved over 150+ algorithmic problems on LeetCode.
- Competed in multiple coding competitions and hackathons.