

VARNIKUMAR PATEL

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Education

VIT Bhopal University

August 2023 – Present

B.Tech in Computer Science & Engineering (Artificial Intelligence and Machine Learning)

8.04/10 CGPA

- **Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, Computer Networks, Database Management Systems, Machine Learning, Artificial Intelligence, Deep Learning

Work Experience

Mittal Alliance Industries Private Limited

May 2025 – June 2025

Web Developer Intern

Indore, India

- Contributed to design and development of sites like **Quanter AI**, **Snix**, **Bruno**, **Pankh**, and **Dr. Pawan Verma**.
- Built responsive UIs with **React.js** and **Tailwind CSS**, Improved mobile responsiveness by **40%**.
- Used **Framer Motion** and **GSAP** animations, Increased user session duration by **25%** and improved interactivity.
- Transformed high-fidelity **Figma designs** into production-ready code, cut UI iteration cycles by **35%**.
- Refactored components to boost reusability and performance, achieved **40% faster renders** and better UX.

Projects

Glaucoma Eye Detection using Enhanced Medical Imaging (In Progress)

[GitHub](#)

- Applied **CLAHE/MCLAHE** using **OpenCV** and **Python** to enhance contrast in MRI scans and improve visibility of critical retinal features.
- Performed directional feature extraction (horizontal, vertical, diagonal) using **Wavelet** and **Fractional Wavelet Transform (WT/FAWT)** with **PyWavelets** and **NumPy**.
- Currently developing a **custom image filter** using **Python** and **OpenCV** to enhance directional feature separability, reduce background noise, and improve signal clarity prior to dimensionality reduction and classification.
- Planned to use **PCA** for dimensionality reduction and visualization of feature space via **scikit-learn** and **matplotlib**.
- Implementation of **ML classifiers** such as **SVM**, **KNN** for final prediction is in progress using **scikit-learn** and **NumPy**.

Converso – AI-Powered Voice Learning Platform

[Live Here](#)

- Launched **Converso**, an AI-first platform enabling voice-based collaborative sessions and real-time teaching.
- Implemented using **Next.js**, **TypeScript**, and **Tailwind CSS** to ensure fast load times and scalability.
- Integrated the **Vapi API** for seamless, multilingual voice interaction via speech-to-text and text-to-speech.
- Employed **Clerk** for robust authentication, user role management, and subscription-based access.
- Structured real-time data handling with **Supabase** and **PostgreSQL** for efficient backend operations.
- Monitored performance using **Sentry** and crafted modern UI components with **shadcn/ui** and **Radix UI**.

Technical Skills

Languages: Python, Java, C++, JavaScript

Web Development: React.js, Next.js, Tailwind CSS, Node.js, Express.js, HTML, CSS, TypeScript, Bootstrap

Cloud & Tools: Firebase, Supabase, MongoDB, Sentry, Docker, Git, GitHub, Postman, VS Code, Clerk

ML & Data Analysis: Scikit-learn, TensorFlow, Pandas, NumPy, Matplotlib, Seaborn, OpenCV, PyWavelets, Power BI, Excel

Achievements & Leadership

- Achieved top **1.4%** selection (out of 40,000 applicants) in Algo University.
- **Finalist in Smart India Hackathon 2024** - Developed an innovative solution, top-ranked in the university.
- Led Gujarati Club events as Event Lead at VIT Bhopal, managing logistics and 10+ team members.
- Assisted in **TCS recruitment** coordination for 300+ students as a Placement Cell Member at VIT Bhopal, managing interview logistics and communication.

Algorithmic Competitions/Achievements

- Solved **500+** DSA problems across **LeetCode** and **GFG**, including 160+ Medium/Hard problems, strengthening core problem-solving skills.
- Achieved a **Coding Score of 1012** and secured [Rank 297 at VIT](#) on GeeksforGeeks with a **103-day max streak** and the **100 Days Badge 2024**.