

VARNIKUMAR PATEL

varni1505@gmail.com | 9510728395 | Portfolio | LinkedIn | Github

Education

VIT Bhopal University

August 2023 – Present

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

8.05/10 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 – Present

Web Developer Intern

Indore, India

- **Architected** and **Deployed** multiple high-performance web applications, contributing to projects like **Quanter AI**, **Snix**, **Bruno**, **Pankh**, **Dr. Pawan Verma** and several others.
- **Redesigned** and **Overhauled** key UI components with React.js and Tailwind CSS, **Improving** mobile responsiveness by **40%** and optimizing cross-device performance.
- **Created** immersive user experiences by integrating Framer Motion and GSAP animations, **Growing** user session duration by **25%** and boosting interactivity.
- **Conceptualized**, **Coded**, and **Tested** reusable, scalable components; **Restructured** codebases to achieve **40% faster renders** and a smoother 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 **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**.

CompileVerse – Online Code Compiler with AI Review System

[Live Here](#)

- Developed **CompileVerse**, an **AI-integrated online code compiler** supporting **Java**, **C++**, **C**, and **Python** with real-time execution and intelligent code review, improving debugging efficiency by 35%.
- Engineered the platform using the **MERN stack (MongoDB, Express.js, React.js, Node.js)**, optimizing backend API response times by 40% through efficient routing and database queries.
- Containerized code execution with **Docker** and deployed scalable **microservices** on **AWS**, ensuring isolated, secure, and high-performance runtime environments.
- Integrated **Monaco Editor** with sandboxed execution, boosting reliability and reducing crashes by 25%.
- Designed responsive, secure UI using **React.js** and **Tailwind CSS**, increasing user engagement by 20%.

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, Pandas, NumPy, Matplotlib, Seaborn, OpenCV, 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**.