Akash Patil

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Education

Veermata Jijabai Technological Institute (VJTI), Mumbai   **2024 – Present**
Bachelor of Technology (B.Tech) in Computer Engineering   CGPA: 7.43/10

Projects

- **LeetCode Platform with AI Assistant** 🔗   **Mar. 2025 – Jun. 2025**
  React, Node.js, Express.js, MongoDB, Redis, Judge0 API, Gemini AI, Monaco Editor, Cloudinary
  - Developed full-stack coding practice platform with real-time code execution supporting multiple programming languages using Judge0 API integration for instant feedback and testing
  - Implemented AI-powered learning assistant using Gemini AI to provide personalized hints, debugging assistance, and detailed solution explanations, improving user engagement by enabling context-aware help
  - Integrated Monaco Editor for professional-grade code editing experience with syntax highlighting, IntelliSense, and multi-language support comparable to VS Code
  - Built scalable authentication system using Redis-based session management for secure user login/logout and integrated Cloudinary for video solution hosting and delivery

- **Jal Shakti - Groundwater Monitoring Platform** 🔗   **Oct. 2025 – Dec. 2025**
  Next.js, Flutter, MongoDB, Machine Learning, Grok LLM, Data Analytics
  - Architected national-scale groundwater monitoring platform to evaluate water health across India, enabling citizens and authorities to track water quality, level trends, and compliance with BIS safety standards
  - Developed analytics dashboards for DWLR (Digital Water Level Recorder) monitoring stations providing insights on groundwater extraction stress, aquifer capacity, and contamination indicators
  - Implemented Random Forest machine learning forecasting models to predict future groundwater level fluctuations, enabling data-driven planning for agriculture-dependent regions
  - Integrated Grok LLM for generating real-time water sustainability recommendations tailored for policymakers, researchers, and urban planners based on comprehensive station data analysis

- **Study.io - AI Study Assistant** 🔗   **Aug. 2025 – Oct. 2025**
  Next.js, Tailwind CSS, Gemini AI, Pinecone, LangChain, RAG Pipeline
  - Built AI-powered personal study assistant enabling users to upload PDF documents and books for interactive question-answering with citation-backed responses grounded in uploaded content
  - Engineered complete RAG (Retrieval-Augmented Generation) pipeline using Gemini AI, LangChain, and Pinecone vector database for accurate semantic search and context-aware responses
  - Implemented advanced text chunking strategies, vector embeddings generation, and document retrieval workflows to optimize response accuracy and minimize latency for real-time conversations
  - Designed scalable Next.js architecture with efficient data retrieval mechanisms ensuring fast performance and reliable knowledge referencing for enhanced learning experience

Technical Skills

- **Programming Languages:** JavaScript, C++, TypeScript, Python
- **Frameworks & Libraries:** Next.js, React.js, Node.js, Express.js, Tailwind CSS
- **Databases:** MongoDB, SQL, Redis, Vector Databases
- **AI Tools:** LangChain, Pinecone, Groq/Gemini APIs, RAG Pipeline
- **Developer Tools:** Git/GitHub, Postman, VS Code, Linux, Google Colab, Kaggle

Achievements

- **Smart India Hackathon (SIH) 2025 Finalist** Selected among top teams nationally to present a high-impact digital solution in the **software division** at the Grand Finale hosted in **Coimbatore, Tamil Nadu**.
- **Meritorious Award for Academic Excellence** for securing distinction throughout all semesters with a cumulative score of **97.21%** in diploma examinations, achieving **34th rank across Maharashtra**.

Leadership & Extracurricular

- **Sponsorship Head, Department Committee:** Led sponsorship initiatives and successfully secured over 2.5 lakh in funding through strategic outreach campaigns, sponsor negotiations, and establishing long-term partnerships for departmental events
- **Robotics Enthusiast:** Designed and programmed line-following robot using IR sensors and C++ for embedded systems control, gaining hands-on experience in robotics and participating in technical competitions