

# VINAYAK MISHRA

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## PROFESSIONAL SUMMARY:

Results-driven Machine Learning enthusiast with strong conceptual knowledge of ML models and their real-world applications. Currently pursuing a Bachelor's degree in **Computer Engineering at A. P. Shah Institute of Technology (Mumbai University)**, with hands-on experience in developing and deploying full-stack web applications. Skilled in problem-solving, critical thinking, and technical execution, with a proven track record of **leading teams**, participating in **multiple hackathons**, and delivering functional, scalable solutions. Passionate about using AI and software engineering to build systems that solve real-world challenges efficiently.

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## EDUCATION

A.P Shah Institute of Technology, Thane (Mumbai University)

Bachelors in Computer Engineering (2023-2027)

Avg CGPA (SEM I - IV) – 9.15

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## TECHNICAL SKILLS

- Programming Languages: Python, MYSQL (Proficient), C (Intermediate)
- Machine Learning & AI: Computer Vision (OpenCV), ML Algorithms (Classification, Regression),
- Data Science & Analytics: Data Manipulation (Pandas, NumPy), Data Visualization (Matplotlib, Seaborn, Plotly)
- Web Development & APIs: HTML, CSS, Java script, php, API Development, Database Integration

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## PROJECTS

- **AI Reforestation Planning Tool** - *Python, CNN, KNN, LSTM, GBM, Image Analysis, Streamlit, Flask*

Built an AI-driven ecological planning tool for sustainable reforestation. Utilized **CNN** for land suitability detection, **KNN** for climate-based native species recommendation, **LSTM** for survival rate prediction, and **GBM** to estimate long-term **carbon sequestration**. Deployed with a **Streamlit dashboard** and **Flask backend**, enabling real-time, data-informed reforestation strategy planning.

- **TravelMate – Web-Based Travel Assistant** - *HTML, CSS, JavaScript, PHP, MySQL, API Integration*

Built a feature-rich tourism platform that offers **open routing** for customizable trip planning, **cultural insights** tailored to destinations, and **live weather updates** to enhance travel readiness. The platform also integrates a responsive **chatbot** for user assistance and supports **custom booking and itinerary management**, delivering a seamless and interactive travel planning experience.

- **MediChat – LLM-Based Medical Chatbot** - *Python, Mistral-7B, FAISS, Streamlit, Flask*

Developed a **RAG (Retrieval-Augmented Generation)** chatbot tailored for healthcare support, capable of retrieving relevant context from medical documents using **FAISS-based vector search**. Leveraged the **Mistral-7B** language model to generate accurate, context-aware responses. The system is deployed using **Streamlit** for an interactive frontend and **Flask API** for efficient document indexing and model integration.

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## CERTIFICATIONS:

- **CLA: Programming Essentials in C – Cisco**  
core programming concepts, variables, data types, loops, functions, pointers, memory management, modular programming, control flow, and basic debugging techniques.
  - **Altair Data Science Master Virtual Internship**  
data wrangling, preprocessing, feature engineering, exploratory data analysis, visualization using Matplotlib and Seaborn, and end-to-end machine learning workflows.
  - **The Complete Web Development Bootcamp 2024 – Udemy**  
HTML, CSS, JavaScript, and Bootstrap; backend development using Node.js and Express.js; database handling with MongoDB; and RESTful API integration
  - **Python Full Stack Developer Virtual Internship**  
Python scripting, Flask and Django frameworks, SQL and NoSQL databases, REST API creation, and backend integration for full-stack web application development.
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## EXTRACURRICULAR ACTIVITIES

- Led many mini projects for successful completion & deployment
- Served as **Head Boy**, representing the student body and coordinating school events.
- Led as **Captain of Yellow House**, securing 1st place and runner-up in inter-house competitions.
- Appointed **Student Representative** in the Junior College Financial Committee for budget and proposal reviews.
- Represented **Central Railway Division** at the **Scouts & Guides Nationals**, and led contingents at 2 District and 1 State Rally.
- Active participations in hackathons, workshops, seminar.