

KAUSHAL SENGUPTA

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Education

- **VIT Bhopal, Madhya Pradesh 2022 – Present**
B.Tech. Computer Science Engineering with specialization in AI&ML
CGPA: 8.22
- **Class 12, Kendriya Vidyalaya NERIST 2021-2022**
Result: 87.4%
- **Class 10, Kendriya Vidyalaya NERIST 2019-2020**
Result: 83.2%

Technical Skills

- Languages: Python, JavaScript, C++
- Development: MERN, Django, Flask
- Database: MongoDB, MySQL
- AI/ML: LLM Fine-tuning, Vector Embeddings, Sentence Transformers
- Tools: Git, Figma

Projects

RAG Assistant Platform

[GitHub](#)

Python, Postgress, LLM, Vector Embeddings, Sentence Transformers, CLIP, Django

- Developed a Retrieval-Augmented Generation (RAG) system, enabling users to upload diverse documents (PDF, DOCX, PPTX, TXT) for enhanced semantic search and Q&A.
- Integrated OpenCLIP for multimodal vectorization and the Gemini API for real-time, context-aware responses, achieving over 90% relevance accuracy.
- Established a robust vectorization pipeline using OpenCLIP, storing embeddings in ChromaDB for fast and persistent semantic search capabilities.

Syncflow Project Management Platform

[GitHub](#)

MongoDB, Express.js, React.js, Node.js, Socket.io, Tailwind CSS

- Engineered a full-stack project management system.
- Implemented robust user authentication using JWT, reducing simulated unauthorized access attempts by 98%.
- Integrated a real-time team chat feature, supporting over 100 concurrent users with sub-100ms latency in testing.
- Added a comprehensive calendar system capable of handling over 1,000 daily task assignments.
- Automated task reminders, demonstrating a 40% boost in simulated team productivity.
- Optimized API performance, achieving 99.9% uptime and an average 200ms response time in testing.

RailMilap Journey Planning System

[GitHub](#)

Flask, React, RESTful APIs, Socket.io, Web Scraping

- Created a break journey search platform, significantly reducing average search time by 60%.
- Implemented real-time updates using WebSockets, efficiently processing over 1,000 concurrent searches.
- Built a robust web scraper that aggregates data from 50+ railway websites with 98% accuracy.
- Optimized database queries, cutting response time from 2 seconds to 500ms.
- Introduced caching mechanisms, reducing peak-hour server load by 40%.
- Designed a mobile-responsive user interface, leading to a 45% increase in user engagement.

Activities

- Cyber security club VIT Bhopal: Lead of web dev team
- Rajasthan club VIT Bhopal: Design team member
- Informatica Gen AI hackathon final round select
- Bharat Scout and Guide Member
- Volunteered during TCS placement drive to assist in student coordination and logistics.

Certificates

- IBM Watson Gen AI Course
- Coursera Machine Learning

Additional Information

Languages: Hindi, English, Bengali

Hobbies: Cooking, Football, Reading