

# Riya Singh

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## EDUCATION

### VIT Bhopal University

B.Tech in Computer Science - 8.86 GPA

09/2022 – 05/2026

Bhopal, India

## TECHNICAL SKILLS

- **Languages & ML:** Python, SQL, Scikit-learn, PyTorch, Keras, TensorFlow, FAISS | **Data & Visualization:** NumPy, Pandas, OpenCV, Plotly, Matplotlib | **AI/LLM Tools:** Streamlit, Cohere API, Gemini API, RAG Systems | **Databases & DevOps:** MySQL, Vector DBs, Firebase, N8N

## PROJECTS

### DataGlow

03/2025

Technologies: Python, Streamlit, Scikit-learn, Pandas, NumPy, Plotly, CSV, Random Forest, SVM

- Designed a comprehensive data preprocessing and machine learning web application using the Streamlit framework to automate data cleaning, transformation, and predictive modeling workflows for CSV and Excel datasets.
- Developed an interactive, multi-page Streamlit application featuring scikit-learn's Random Forest and SVM algorithms. The tool automates model training (utilizing a 70-30 train-test split), provides instant predictions, and visualizes results with accuracy scores and confusion matrices.
- Deployed an end-to-end ML pipeline featuring data upload validation, preprocessing operations (duplicate removal, missing value handling, normalization), model selection interface, and achieved on-demand prediction functionality with downloadable processed datasets in CSV format.

### Multimodal RAG with Hierarchical Chunking

09/2025

Technologies: Python, Streamlit, Cohere, Gemini, FAISS, PDF2Image, PyPDF2

- Engineered an enhanced Retrieval-Augmented Generation (RAG) application that processes PDF documents with 4-level hierarchical chunking, achieving 35% better context preservation compared to flat chunking methods.
- Implemented structure-aware document parsing with automated header detection using 6 regex patterns, successfully identifying hierarchical structure in 85% of technical documents and research papers.
- Integrated Cohere for multimodal embeddings and FAISS vector database for sub-second similarity search across 1000+ document chunks.
- Built an interactive Streamlit interface featuring real-time API quota monitoring, batch document processing, and context-aware search with hierarchical result visualization across multiple granularity levels.

## EXPERIENCE

### iOS Club | Technical Co-Lead

10/2023 – 05/2025

- Organized and coordinated Techastra (Dec 2023), a flagship technical event with 150+ participants.
- Appointed as Technical Co-Lead in April 2024, leading project development, driving innovation initiatives, and mentoring team members.

## CO-CURRICULAR

### Smart India Hackathon 2024 | National Finalist

12/2024

- Achieved top-6 national team selection for the hardware problem statement: *Development of a Cost-Effective Myoelectric Prosthesis*.
- Fabricated a transradial prosthetic hand from recycled 3D-printed materials and low-cost sensors, achieving a 92% cost reduction.

## HOBBIES & EXTRA-CURRICULAR

- Engage in daily practice on Elevate and Lumosity to improve cognitive skills such as memory, focus, and processing speed.
- Practice Sudoku to enhance strategic planning and attention to detail.
- Trained in 10-meter air pistol shooting with competitive experience up to the North Zone level.