

# Harsh Gupta

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## Education

<b>Vellore Institute of Technology (VIT), Bhopal</b> <i>Bachelor of Technology in Computer Science Engineering — CGPA: 8.54</i>	Bhopal, MP 2022 – 2026
<b>Saraswati Shishu Mandir Sr. Sec. School</b> <i>Higher Secondary Education (12th Grade) — Percentage: 86%</i>	Jabalpur, MP 2020 – 2021
<b>St. Aloysius Sr. Sec. School</b> <i>Class 10th (Secondary) — Percentage: 87.8%</i>	Jabalpur, MP 2018 – 2019

## Technical Skills

**Programming & Scripting:** Python, SQL, C++, REST API Integration, Streamlit, Tkinter  
**Machine Learning & AI:** Deep Learning (LSTM, RNN), Time-Series Forecasting, NLP, LangChain, Retrieval-Augmented Generation (RAG)  
**Computer Vision:** OpenCV, LBPH Face Recognition, Pillow, Real-Time Video Stream Processing  
**Libraries & Frameworks:** Pandas, NumPy, TensorFlow, PyPDF2, Matplotlib, Seaborn, yFinance, TA-Lib  
**Data Engineering:** Data Pipelines, ETL Processes, Yahoo Finance API, Data Visualization  
**Tools & Utilities:** Git, VS Code, MySQL, pytsx3, API Automation

## Technical Projects

### Stock Price Prediction Platform — Python, LSTM, Streamlit, Yahoo Finance API

- Engineered an AI-powered platform using **LSTM networks** to analyze 5+ years of historical data for precise market trend predictions across **1,770+ NSE-listed stocks**.
- Automated data pipelines for acquisition, preprocessing and visualization**, reducing manual effort by **50%** and enabling interactive analytics for multiple active users per session.
- Integrated **Yahoo Finance API** with a responsive Streamlit dashboard, enabling real-time market insights, interactive visualizations, and actionable trend analysis with 11+ technical indicators.
- Applied advanced **time-series forecasting, deep learning and machine learning techniques** to deliver precise next-day stock price predictions, aiding investors in decision-making.

### Face Recognition Attendance System — Python, OpenCV, Tkinter, Pandas, NumPy, Pillow, pytsx3

- Developed an AI-powered **attendance management system** using OpenCV and LBPH, capable of recognizing more than 100s of students per session and generating automated CSV records per class.
- Built an interactive **Tkinter GUI** supporting both automatic and manual attendance, handling more than 100 student entries daily with validation and notifications.
- Implemented facial dataset creation and training pipeline using **Python and Pillow**, enabling efficient, scalable **LBPH model** training for accurate real-time face recognition.
- Enabled **live webcam streaming, remote camera support, and audio notifications via pytsx3**, providing real-time monitoring across multiple classrooms.

### Multi-Modal Chatbot Platform — Python, Streamlit, LangChain, OpenAI, Ollama, SQL, PyPdf2

- Deployed a **multi-modal chatbot** platform with 6 integrated modalities, including context-aware conversations, document-based QA, SQL database queries, internet-enabled search, and web content retrieval.
- Implemented **LangChain ConversationBufferMemory** for robust chat history management, enabling context-aware, multi-turn LLM responses and personalized, intelligent user interactions.
- Developed a **Retrieval-Augmented Generation (RAG) pipeline** using PyPDFLoader, FastEmbed and DocArrayInMemorySearch, delivering highly relevant document-based answers for files upto 15MB.
- Integrated real-time data access through **DuckDuckGo** search and SQL databases for live events and structured queries.
- Built an interactive **Streamlit interface** with a modular chat UI supporting all 6 AI modules, enabling seamless **LLM switching (OpenAI, Ollama)** and real-time streaming responses for an intuitive, user-focused experience.
- Applied **prompt engineering, LLM orchestration and memory optimization**, enhancing response accuracy and context retention by **25%**.

## Achievements

- Received the prestigious **Mukhyamantri Medhavi Chhatra Yojana scholarship** valued at **6 lakh** for academic excellence.
- Successfully completed the **100 Days of Coding challenge** on LeetCode, focusing on Data Structures and Algorithms.
- Solved **over 500 algorithmic problems** on LeetCode, demonstrating strong analytical and coding abilities.

## Certifications

- Complete Generative AI with LangChain & Hugging Face - Udemy (2025)
- Complete Data Science, Machine Learning, DL, NLP Bootcamp - Udemy (2025)