

# Shubham Rathod

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## EDUCATION

### Vellore Institute of Technology, Bhopal

*Integrated MTech in Artificial Intelligence*

*Cumulative CGPA: 7.79*

Bhopal, Madhya Pradesh

*August 2021 – August 2026*

### Shree Shankar School

*Class 12<sup>th</sup> - 78.00%, Class 10<sup>th</sup> - 86.40%*

Dhamnod, Madhya Pradesh

*March 2017 – March 2020*

## TECHNICAL SKILLS

**Skills:** Python, R, SQL, Machine Learning, RAG, NLP, Agentic Workflows

**Frameworks:** PyTorch, Tensorflow, LangChain, React

**Tools:** Git, VS Code, Framework, Jupyter, Pinecone, ChromaDB

## CERTIFICATIONS

AWS Solutions Architect Associate — Data Analysis with Python - FreeCodeCamp

Cloud Computing - NPTEL — Machine Learning with Python - FreeCodeCamp

## CO-CURRICULAR EXPERIENCE

### AI Trainer (Freelance)

Bhopal, Madhya Pradesh (Remote)

*DataAnnotations Tech*

*October 2024 - December 2024*

- Conducted 700+ structured test cases to rigorously evaluate Large Language Models (LLMs) across diverse NLP tasks including content generation, data extraction, coding assistance, ensuring high-quality deliverables.
- Delivered 500+ hours of prompt engineering, annotation, and iterative feedback, significantly improving model accuracy and minimizing hallucinations through data-driven insights.
- Led multilingual evaluations in English and Hindi (Devanagari and Latin scripts), applying five key parameters to enhance localization and user experience.
- Collaborated with remote cross-functional teams to document findings, identify edge cases, and refine AI model performance metrics, strengthening analytical reporting and communication.

## PROJECTS

### Agent AI Coding Assistant

Bhopal, Madhya Pradesh

*Personal Project*

*May 2025 – Present*

- Engineered an AI coding assistant leveraging Retrieval-Augmented Generation (RAG) and ChromaDB to index 500+ code snippets, reducing hallucination rates by 45% and improving output reliability.
- Applied ReAct prompt strategies to enhance Large Language Model (LLM) accuracy, achieving a 92% success rate in resolving Python and JavaScript errors, increasing debugging efficiency.
- Integrated a hybrid precision@3 search pipeline within a custom VS Code extension, boosting suggestion relevance by 35% and streamlining developer workflow.

### NoCap RAG - Context-aware document retriever

Bhopal, Madhya Pradesh

*Personal Project*

*January 2025 – February 2025*

- Architected a document-aware Retrieval-Augmented Generation (RAG) system by integrating LangChain, Pinecone, and OpenAI APIs, increasing factual accuracy by 35% and reducing hallucinations by 40%.
- Designed and implemented a chatbot interface supporting queries on 1,000+ indexed documents, accelerating vector search retrieval by 20% through prompt tuning and vector optimization.
- Utilized advanced NLP techniques such as chunking, embedding, and precision@k evaluation to enable scalable, real-time question and answer interactions, improving responsiveness.

### Crypto Tweet Tracker

Bhopal, Madhya Pradesh

*Personal Project*

*March 2025 – April 2025*

- Developed a real-time monitoring tool using Twitter API v2 and Tweepy to track cryptocurrency mentions by verified influencers, maintaining 99% uptime and delivering timely insights.
- Optimized a JSON-based caching mechanism to reduce API calls by 40% while sustaining high data throughput, improving system performance and scalability.
- Automated keyword detection for terms like Bitcoin and Dogecoin with 15-minute interval checks, processing over 100 tweets per hour, increasing monitoring accuracy.

## EXTRACURRICULAR

### Core Member

Bhopal, Madhya Pradesh

*IoT Club, VIT Bhopal*

*June 2023 – May 2024*

- Organized 5 campus events focused on IoT awareness, technical skills, and peer collaboration.
- Fostered innovation and learning by coordinating with cross-functional student teams.