

Sujatro Ganguli

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linkedin.com/in/sujatro-ganguli-68429328b — Portfolio

PROFESSIONAL SUMMARY

Computer Science undergraduate with strong proficiency in Python, AI, and backend development. Experienced in building RAG frameworks, optimization systems, and open-source libraries. Skilled in creating efficient, modular solutions and translating research concepts into functional software. Seeking opportunities in software development, AI engineering, or related domains.

EDUCATION

Vellore Institute of Technology (VIT), Vellore	2023 – Present
B.Tech in Computer Science and Engineering (Current CGPA: 8.7)	
CBSE Class XII — 94%	2023
CBSE Class X — 95%	2021

TECHNICAL SKILLS

Languages: Python, C++, C, Java, MATLAB, SQL, HTML, CSS, JavaScript

Frameworks & Tools: Flask, Streamlit, OpenCV, MediaPipe, BeautifulSoup, Git, Linux, Ollama, FastAPI, React, TensorFlow

Domains: Machine Learning, Retrieval-Augmented Generation (RAG), Web Development, Algorithmic Optimization, API Design, Data Processing

Coursework: Artificial Intelligence, Compiler Design, Data Structures, Operating Systems, Software Engineering

PROJECTS

- RAG System for Automated Question Generation** *Python, Streamlit, Ollama*
Enhanced a modular RAG system to assist in generating question papers from textbooks. Created ingestion scripts for varied data formats and an interactive Streamlit interface. Reduced manual workload by approximately **75%** while maintaining modular extensibility.
- Multi-Agent Debate Framework for LLMs (Research)** *Python, Ollama*
Building a multi-agent framework to improve creative reasoning in large language models. Planned prompt diversity, agent orchestration, and evaluation logic for debate-driven response generation.
- Web Crawler and Knowledge Assistant** *Python, BeautifulSoup, RAG*
Expanded a web crawler integrated with a retrieval system to answer natural language queries based on website data. Improved data pipelines for efficient and structured information access.
- Exoskeleton Optimization with NSGA-II** *MATLAB*
Applied the Non-Dominated Sorting Genetic Algorithm (NSGA-II) for optimizing biomechanical control parameters in exoskeleton systems. Used simulation-based testing to analyze multi-objective performance trade-offs.
- Gestualis — Open Source Gesture Recognition Library** *OpenCV, MediaPipe*
Built during a 20-hour hackathon, this Python package enables real-time gesture recognition without deep learning. Supports left/right hand differentiation and modular usage. Attained over **3K downloads** on PyPi.
- EVA — Embedding Versioned Assistant (CLI Tool)** *Python, Ollama*

Built a modular CLI-based framework functioning as a lightweight RAG repository system. Stores embeddings in a custom .eva format and updates only modified files, enabling efficient RAG execution on evolving datasets such as notes or documents. Supports file-level querying within directories for flexible retrieval.

EXPERIENCE & INTERNSHIPS

- **Summer Research Intern — Physical Research Laboratory (PRL) May 2025 – July 2025**
Worked on visualizing Martian subsurface radar data collected by SHARAD using the RAGU framework. Automated and improved visualization workflows with Python, processing and rendering over **3 GB of radar data** from a **2 TB+** dataset. Enhanced accessibility and reproducibility through open-source integration.
 - **Hackathon Achievements**
Caterpillar Industry Hackathon (1st Place, 2024): Created a technician-assistance app with face-ID login, voice-to-text functionality, and gamification for engagement. Developed 4 feature modules including dashboard and report generation.
Yantra Central Hackathon (Track Prize, 2025): Led a 4-member team to build a genomic analysis platform using **TensorFlow** trained on **Runpod**. Implemented backend with **FastAPI**, frontend with **React**, and connected both via **RESTful APIs**. Accomplished **89% accuracy** in breast cancer prediction on an **8.39 MB dataset**.
 - **Community Leadership & Volunteering**
Volunteered 100+ hours with NGO CINI for educational outreach and modernization of two NGO websites using HTML/CSS and GitHub Pages.
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ACHIEVEMENTS

- 1st Place — Prima Vera Filmmaking Competition (2023)
 - 1st Place — Bio Sim City Minecraft Competition (2023)
 - National Qualifier — First Lego League Robotics (2019)
 - 3K+ PyPI Downloads for Gestualis (2025)
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CERTIFICATIONS

- DELF B1 Certification in French (2020)
 - Udemy — Python Programming (64.5 hours, 2021)
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LANGUAGES

English | French | Hindi | Bengali

INTERESTS

Full-stack development, Machine learning, Open-source engineering, Music, Reading, Theatre