

# Sujatro Ganguli

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

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## 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.

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## 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**

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## 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

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## 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.

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## 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

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## INTERESTS

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