

# Sandipan Paul

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## EDUCATION

### Dr. Ambedkar Institute Of Technology

Bachelor of Engineering - Electrical & Electronics; CGPA: 8.13

Bengaluru, India

Dec 2022 – Present

## EXPERIENCE

### AI/ML Intern

Jun 2025 – Present

Strydden Technologies LLP.

Ahmedabad, India — Remote

- Built a **FastAPI-based clinical AI triage service** using **RAG pipelines and Pinecone vector search** for symptom assessment.
- Improved symptom retrieval relevance using **semantic search and ontology-driven symptom taxonomy**.
- Implemented **stateful session management with MongoDB** to maintain multi-turn triage conversations.
- Integrated **WATI WhatsApp webhooks** to enable real-time AI triage interactions.
- Built a **regulatory compliance assistant using RAG** to answer and compare frameworks such as **HIPAA, CCPA, and SOC2**.
- Implemented **tamper-proof** medical report signing workflows using **SHA-256** hashing and **ECDSA digital signatures**.
- Built a **25-case automated security test suite** for a **medical e-signature pipeline**, achieving **68%** overall code coverage and **95–100%** coverage across cryptographic signing, key rotation, and tamper detection modules.

### Robotics Intern

Jul 2024 – May 2025

Just Robotics

Bengaluru, India

- Engineered an RC controller using websockets/serial communication; optimized interface latency by **30%**.
- Implemented a lightweight **Flask** backend to process real-time robotic control signals via WebSockets.

## PROJECTS

### CodeCortex-AI | Python, FastAPI, LangGraph, GitHub API | Code

Feb 2026

- Built a **multi-agent code review system** using LangGraph for automated PR validation.
- Detected vulnerabilities (SQLi, XSS, auth issues) using **LLM-based security auditing**.
- Achieved **sub-5s latency** with Groq Llama 3.3 70B for near real-time feedback.
- Integrated **GitHub webhooks** to analyze PR diffs and post structured reviews.
- Added **LangSmith tracing** for observability and prompt optimization.

### FrameForge | Python, VideoDB, Redis, LangGraph, Langsmith | Web

Jan 2026

- Built an **AI video processing pipeline** that converts long-form footage into short clips using **multimodal analysis** and automated scene segmentation.
- Engineered a **fault-tolerant ingestion pipeline** with anti-bot detection and multi-strategy fallback mechanisms using yt-dlp, achieving **90%** success rate.
- Implemented content moderation and virality scoring (**0–100**) using **Groq Llama 3**, ensuring brand-safe outputs with **sub-1s avg latency** (max 1.5s).
- Optimized performance using **Redis caching**, reducing redundant LLM calls by **50%**.

### Observe | Python, Gradio, DVC, MLflow, Grafana | Code

Oct 2025

- Developed an **end-to-end MLOps pipeline** integrating FastAPI, DVC, MLflow, and Grafana for **real-time NLP monitoring**.
- Fine-tuned **DistilBERT** for news classification with custom tracking of inference latency and request metrics.
- Containerized workflow for observability, visualizing latency and confidence trends via **Grafana** dashboards.

## SKILLS

**Languages:** Python, C, C++, JavaScript, HTML/CSS

**Libraries & Frameworks:** Flask, FastAPI, Streamlit, Gradio, TensorFlow, PyTorch, OpenCV, NLTK, LangChain, LangGraph, LangSmith, Mem0, Postman, SQLAlchemy

**Cloud/DevOps:** AWS (S3, EC2), GCP, Docker, Kubernetes, Git, GitHub Actions, Airflow, DVC, Dagshub, Redis

**Databases:** PostgreSQL, MongoDB, SQLite, Pinecone, Qdrant, Firebase

**MLOps & Data Tools:** MLflow, Grafana, Prometheus, Jupyter Notebook, VideoDB

## ACHIEVEMENTS

- Won the **Best Innovation** award for developing a Drone surveillance system using CV and AI (Tech Nexus 2025).
- Won the **Innovator's Edge** award for developing an interactive Braille script system (Hack Colossus 2024).