

# SANDEEP BALABANTARAY

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## Education

### Vellore Institute of Technology

Bachelor's in Computer Science and Engineering (B.Tech)

CGPA : 8.58

2022 - 2026

## Experience

### AlgoUniversity (YC S21)

July 2025 - Aug 2025

SWE Co-Op Intern

Remote

- Architected Codeblaze, an online judge platform for 500+ active users, featuring a self-built Docker-based compiler and a React + Tailwind interface with custom dashboards and an admin console for live coding.
- Scaled backend in Django/DRF with Docker-sandboxed judging and SQLite, handling 10K+ submissions/day.
- Deployed AWS EC2 with Nginx & SSL, integrating Docker workers & Vercel frontend, ensuring 99.9% uptime
- Built Ember, an AI coding assistant using Google Gemini for code analysis, test evaluation, and intelligent hints

- [Deployment Link](#)    [Video Link](#)

### Madhya Pradesh Police

Dec 2024 - Feb 2025

Frontend Web Developer & Database Manager Intern

Bhopal, Madhya Pradesh

- Digitalized 50+ manual police forms into a web system using React and Flask, reducing paperwork by 70%.
- Crafted a user-friendly interface reducing form processing time by 50% and enabling seamless data analysis and entry.
- Automated database operations and Excel extraction workflows, cutting data retrieval time by 60%.

## Projects : <https://github.com/AxilBlaze>

### Nexus AI Gallery | DeepFace, GenAI(Gemini, Google ADK), Qdrant, ChromaDB

Nov 2025 - Dec 2025

- Architected a multimodal visual search pipeline using RetinaFace + FaceNet512 for biometric encoding and CLIP-based semantic retrieval, achieving 99% face detection accuracy.
- Implemented a high-recall vector search system with Qdrant (768-d embeddings) and Gemini-powered re-ranking to minimize false positives in strict semantic matching.

- [Video Link](#)    [GitHub Link](#)

### Walmart AI Shopping Assistant | Machine Learning, Flask, GenAI (Gemini)

June 2025 - July 2025

- Developed a hybrid market-basket recommendation engine combining FP-Growth and Apriori, improving bundle suggestion accuracy by 20% and add-to-cart conversion by 15% in A/B trials.
- Integrated a React frontend and Chrome Extension with a Flask + Gemini 2.0 Flash API and OCR pipeline to parse grocery lists from text, voice, and image inputs, achieving 95%+ accuracy with  $\pm 2$ s latency..

- [Link](#)    [Video Link](#)

### Medipred | Machine Learning, Flask

Aug 2023 - Dec 2023

- Built pipelines to ingest and transform healthcare data, preprocessing 10M+ records with Pandas and normalization.
- Enhanced ML performance by 25% through handling missing values, outliers, and robust normalization techniques.
- Trained & validated ML models achieving 90%+ accuracy across 5,000+ diverse healthcare records of multiple diseases

- [Video Link](#)    [GitHub Link](#)

## Technical Skills

**Programming Languages:** Python, C++, HTML, CSS, Javascript

**Frameworks:** Django REST Framework, FastAPI, Flask-RESTful, Reactjs, Tailwind

**Databases:** MySQL, PostgreSQL, MongoDB, QdrantDB, ChromaDB

**AI & Machine Learning:** PyTorch, TensorFlow, Scikit-learn, Hugging Face Transformers, LangChain, FAISS

**Specialization:** Data Visualization, Deep Learning, NLP, RAG, Computer Vision, GenerativeAI

## Achievements

- Meta HackerCup (AI Track)** : Finalist in Meta's ongoing official AI-focused coding competition.
- Coding Profile** : [LeetCode](#) (Knight, Rating: 1889, Top 5% globally) — [CodeForces](#) (Specialist, Rating: 1201)
- AlgoUniversity**: Earned 2nd place out of 1000+ students in a programming camp focused on advanced graph theory

## Co-Curricular

### Amdocs Gen AI Hackathon| Semi-Finalist

Nov 2024 - Dec 2024

- Collaborated with peers to craft a GenAI tutor using an ensemble of Mistral, GPT-1, and LLaMA with chain-of-thought reasoning, selected from 500+ students for its innovative solution.

### Smart India Hackathon| Qualified University Finals

Nov 2023 - Dec 2023

- Led the team in deploying an ML model for a healthcare project, advancing through all internal rounds and ranking among the top 20% of 200+ teams.