

# Aryan Hemant Sahu

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 [Aryan Sahu](#) |  [aryaniscoding](#) | [LeetCode](#) | [Portfolio](#)

## EDUCATION




### Pune Institute of Computer Technology (PICT)

B.E. in Electronics & Telecommunications (Honours in AI & Machine Learning)




CGPA: 9.68/10

2023 – Present

## EXPERIENCE

- **Shoption Pvt. Ltd.**  September 2025 - December 2025  
IT Intern Hybrid
  - Engineered production-grade multilingual RAG chatbot backend using FastAPI, PostgreSQL+pgvector (HNSW), and Gemini/Cohere, supporting en/hi/mr with 768-dim semantic search with batched translation enhancement.
  - Implemented hybrid retrieval pipeline combining dense vector search (cosine ANN), PostgreSQL FTS, and Cohere reranking, processing 200→50→5 passage refinement with real-time CRM enrichment via parallel async HTTP calls.
  - Integrated sentiment analysis (TextBlob) and telemetry system tracking per-step latency, cumulative token usage across all LLM operations, CPU/RAM metrics, reducing response latency by 40% through system architecture.
- **Aeronica Advance Technologies Pvt. Ltd.**  June 2025 - August 2025  
Control Systems Intern Hybrid
  - Developed PID, MPC, and LQR algorithms on STM32 for tri-axis stabilization using MPU6050 feedback.
  - Optimized control loops to reduce response time by 13%, significantly improving quadcopter stability.
- **NxTechWorks Consulting Pvt. Ltd.**  May 2025 - June 2025  
Data Science Intern Remote
  - Architected a RAG chatbot with Cross-Encoder reranking, improving document retrieval precision by 25% for complex Q&A tasks, and integrated summarization with automatic question-answer generation.
  - Produced and deployed n8n workflows that deliver personalized nearby event suggestions via email and automatically sync updates to Google Calendar.

## PROJECTS

- **AquaMitra: Hybrid RAG + Text-to-SQL** August 2025 - September 2025  
*Python, FastAPI, Uvicorn, LlamaIndex, HuggingFace, DuckDB, SQLAlchemy + duckdb-engine* 
  - Built a Hybrid RAG QA assistant with LlamaIndex routing, queries via Text-to-SQL on a single DuckDB table.
  - CSV ingested into DuckDB, used case-insensitive text filters and persisted chat logs with executed SQL latency.
  - Delivered a FastAPI + Uvicorn backend using SQLAlchemy (duckdb-engine), exposing /api/chat, /api/health, and /api/history and integrating the full RAG/Text-to-SQL pipeline.
- **FareFlow: Smart Parking System** Feb 2025 - May 2025  
*Python, Flask, ESP32-CAM, Plate Recognizer API, SQLite, OpenCV* 
  - Built an end-to-end parking solution with ESP32-CAM video feed and Flask backend.
  - Automated license plate recognition via Plate Recognizer API, achieving 98% accuracy at 0–3m
  - Evolved dynamic fare logic calculating fees based on parking duration, eliminating manual billing errors.
- **The Gladiators Fantasy Cricket Team Selector** May 2025 - July 2025  
*Python, pandas, scikit-learn, Docker* 
  - Built an computerized fantasy-cricket selection engine using scikit-learn Pipelines with ColumnTransformer and RandomForestRegressor tuned via RandomizedSearchCV.
  - Containerized workflow with Docker and a reproducible data pipeline leveraging pandas/numpy.

## SKILLS

- **Programming Languages:** Python , C / C++ , MySQL
- **Data Science & ML:** Pandas ,Numpy, Matplotlib, Seaborn, Scikitlearn, Tensorflow, NLP, OCR, Transfer learning
- **Web Technologies:** Flask, Uvicorn, FastAPI
- **Database Systems:Relational:** MySQL, SQL ,PostgreSQL , **Vectordb :** Faiss , pgvector
- **DevOps & Version Control:** Docker, Model deployment, Git/Github
- **Other:** Google colab, VS code, Kaggle, Huggingface, Control system algorithms
- **Software development:** OOP, DSA, DBMS, CN, System Design, clean coding

## ACHIEVEMENTS

- Demonstrated advanced problem-solving ability by solving over **400** Data Structures and Algorithms problems on LeetCode and GfG
- Ranked in the top 45 out of 650+ teams nationwide in the Dream11 gameathon