

CHOWHAN DUTTA

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SUMMARY

Final year CSE student at SRMIST specialising in AI and ML, with shipped projects in computer vision, Generative AI and LLM powered systems. Builds and deploys full stack AI applications end to end.

EDUCATION

SRM Institute of Science and Technology (SRMIST)

Chennai, India

B.Tech in Computer Science and Engineering | AI and ML | 2022 to 2026

EXPERIENCE

AI/ML Trainee GUVI x HCL

March 2026 to Present

Chennai, India

- Trained across 35 structured sessions in supervised and unsupervised learning, neural networks, model evaluation and deployment with Python and data science tooling.
- Applied feature engineering, data preprocessing and model interpretability techniques on real world datasets across multiple graded assignments.
- Executed the full ML lifecycle across projects: data ingestion, model training, evaluation and cloud deployment.

PROJECTS

ShieldAI Real Time Weapon Detection System

[\[GitHub\]](#) [\[Live\]](#)

Python · FastAPI · YOLOv11 · ONNX Runtime · OpenCV · WebSocket · Docker · Hugging Face Spaces

- Trained a custom YOLOv11s model on 4 weapon classes across 120 epochs on a T4 GPU and exported to ONNX, cutting inference cost to CPU only with no external API dependency.
- Streamed detections from webcam and CCTV feeds over WebSocket in real time; introduced quadrant crop scanning at 1280px which measurably improved knife recall at distance.
- Packaged the full system in Docker and deployed publicly to Hugging Face Spaces with 100% on device inference and zero third party API calls.

RAGs AI Multi Format Document Q&A System

[\[GitHub\]](#) [\[Live\]](#)

Python · FastAPI · LangChain · React.js · Vercel · Render

- Designed and shipped a full RAG pipeline accepting PDF, Word and CSV inputs, enabling natural language queries over documents with accurate, grounded responses.
- Optimised chunk size and vector retrieval strategy to reduce hallucination and improve answer relevance; shipped with FastAPI on Render and React on Vercel.

Local SLM Benchmark AI Model Evaluation Tool

[\[GitHub\]](#) [\[Live\]](#)

Python · FastAPI · Ollama · phi3 · llama3.2 · gemma2

- Benchmarked phi3, llama3.2 and gemma2 across 30 prompts in 10 task categories, recording tokens per second, latency and response time with auto generated ranked reports.
- Built a Temperature Lab running identical prompts at four temperature settings to quantify how randomness impacts output quality, alongside a structured JSON mode with auto retry.

Handwritten Character Recognition CNN + GAN

Python · TensorFlow · Keras · GAN · OpenCV · NumPy

- Designed a five stage OCR pipeline pairing a CNN classifier with a GAN for synthetic data generation, outperforming a CNN only baseline on underrepresented handwriting patterns.
- Generated synthetic training samples using the GAN to fill dataset gaps, directly improving model accuracy on writing styles with limited real world coverage.

TECHNICAL SKILLS

Languages: Python, TypeScript, SQL

AI / ML: PyTorch, TensorFlow, Keras, Scikit-learn, ONNX Runtime, YOLOv11, OpenCV, MediaPipe

Generative AI & LLMs: LangChain, OpenAI API, Hugging Face, RAG, Ollama, Prompt Engineering

Frontend & Backend: React.js, Next.js, Tailwind CSS, FastAPI, Node.js, REST APIs, WebSocket

Deployment & Cloud: Docker, Vercel, Render, Firebase, Hugging Face Spaces

Tools: Git, GitHub, Google Colab, Jupyter Notebook, Roboflow, VS Code