

# Shubham Sarkar

## Machine Learning Engineer

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Leetcode: <https://leetcode.com/u/ShubhamSarkar243>

### SUMMARY

Machine Learning Engineer with hands-on experience designing and deploying NLP-driven systems for document analysis, semantic search, and intelligent insights. Strong background in text preprocessing, embedding-based retrieval, multimodal learning, and scalable ML pipelines. Proven ability to collaborate across data, product, and infrastructure teams to deliver low-latency, production-ready AI systems using Python, PyTorch/TensorFlow, Docker, and cloud platforms.

### SKILLS

**Machine Learning & AI:** Supervised & Unsupervised Learning, NLP, Computer Vision, Multimodal Models, Feature Engineering, Model Evaluation

**Frameworks & Libraries:** TensorFlow, PyTorch, scikit-learn, Hugging Face, Pandas, NumPy

**MLOps & Deployment:** Docker, MLflow, DVC, FastAPI, Flask, Streamlit, CI/CD

**Data & Systems:** SQL, ETL Pipelines, Linux, AWS, Vector Databases

**Programming :** Python,C, Javascript

### WORK EXPERIENCE

#### Machine Learning Engineer , Freelance

Oct 2025–Nov 2025

- Built an end-to-end sentiment analysis pipeline to extract and analyze user comments from YouTube videos using Python and popular ML libraries (e.g., scikit-learn, pandas, NLTK/spaCy).
- Preprocessed and cleaned large-scale text data, applying NLP techniques such as tokenization, stopword removal, and lemmatization to improve model performance
- Used DVC and git for Version Control, MLflow for experiment tracking, AWS for deployment and
- Containerized the application for reproducible deployment (e.g., with Docker), or deployed as a web app
- Flask RESTful APIs for backend

[Demo](#) , [Youtube Sentiment Analysis-Code](#)

#### Machine Learning Engineer , Freelance

July 2025–Aug 2025

- Built a production-ready ML pipeline from ingestion to deployment.
- Engineered structured features, optimized models via hyperparameter tuning.
- Deployed a real-time inference application with monitoring.
- Demonstrated strong ML system design and deployment discipline.
- See it in action: [Live Demo](#), [code](#)

### PROJECTS

#### Golden Crossover Backtester

- Collected and cleaned historical stock data for NIFTY-listed equities using Python, Pandas, and NumPy.
- Developed and automated the Golden Crossover (20/50 SMA) trading strategy to generate buy/sell signals.
- Built a backtesting framework to evaluate strategy performance, including profitability, risk-reward, and win/loss ratios.
- Visualized trading signals and price trends with Matplotlib; summarized results in tabular format for reporting.
- Compared strategy returns to buy-and-hold benchmarks to assess effectiveness.

[Code](#)

#### Smart Product Pricing Model, Amazon ML Challenge 2025

- Built a multimodal document intelligence system combining product descriptions and images.
- Engineered transformer-based text embeddings and CNN/CLIP image embeddings for semantic representation.
- Designed efficient feature storage and retrieval pipelines for large-scale inference.
- Tuned models for accuracy and relevance using SMAPE and ranking-based evaluation.
- Demonstrated scalable semantic understanding across unstructured data.
- Built and fine-tuned models using TensorFlow, and scikit-learn, achieving 142 rank.

### EDUCATION

#### Bachelor of Technology ,Jadavpur University

2023–2027

#### High School , Hariyana Vidya Mandir

2021–2023

### EXTRACURRICULARS

#### Core Member, Jadavpur University Entrepreneurship Cell

• Organized national-level flagship events such as E-Summit 2025 and Hult Prize 2025, achieving 5,000+ registrations and 1,000+ on-campus attendees.

• Contributed to the establishment of an Incubation Center at Jadavpur University under the Institution's Innovation Council (IIC)

#### Coordinator, Jadavpur University Finance Club

• Led planning and execution of Finspire 2025, a national-level finance event with 1,000+ registrations and 500+ on-ground attendees, strengthening the club's national presence.

• Delivered high-impact trading and investment courses to 100+ students, improving engagement in financial markets