Shubham Sarkar
Machine Learning Engineer

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SUMMARY

Machine Learning Engineer with a strong foundation in AI, Deep Learning, and Machine Learning. Proficient in Python, TensorFlow, PyTorch, SQL, and cloud-based ML pipelines, with hands-on experience in NLP, Computer Vision, and Data Analytics. Built and deployed multiple end-to-end machine learning projects, including multimodal models for price prediction, portfolio optimization, and sentiment analysis. Skilled in model versioning, CI/CD automation, and containerized deployment using MLflow, Docker, and FastAPI. Passionate about leveraging data-driven insights and scalable ML systems to solve real-world business problems.

SKILLS

AI|Deep Learning| Natural Language Processing | Machine Learning | Computer Vision| OCR |LLM Fine Tuning| LLM Evaluation | Vector Databases | RAG | Tensorflow | Keras | Scikit Learn| Python| Javascript | Fast API | SQL| MLOps| Docker | Data Analytics| Big Data | Hugging Face| AWS | Linux |ETL Pipelines |Data Science | Data Structures and Algorithms| Statistics | Time Series |Business Intelligence | Communication | Accuracy| Power BI

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 churn prediction model using Python and scikit-learn, classifying customers into 5 risk levels for targeted retention.
- Engineered key features, optimized performance with hyperparameter tuning, and deployed a Streamlit app for real-time predictions.
- Showcased expertise in ML pipelines, data preprocessing, and cloud deployment for actionable business insights.
- 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

- Developed a multimodal machine learning model to predict optimal product prices from both text descriptions and product images in an e-commerce dataset of 150K+ entries.
- Engineered NLP and CV pipelines using transformer-based text encoders and CNN-based image embeddings, integrating them through a fusion neural network for price prediction.
- Implemented data preprocessing, including text cleaning, tokenization, and image feature extraction with ResNet and CLIP representations.
- Applied feature engineering, outlier handling, and SMAPE-based evaluation to optimize prediction accuracy.
- 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