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AYUSHMAN PANI

Machine Learning Engineer

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Machine Learning Engineer specializing in production-grade ML systems, credit risk modeling, and LLM-based RAG architectures. Strong experience in model development, experiment tracking, explainability, and deployment using FastAPI and Docker. Built scalable ML pipelines with monitoring, drift detection, and real-world serving constraints.

Skills

Programming:	Java, Python, C, C++, JavaScript, TypeScript
ML & AI:	Scikit-learn, TensorFlow, PyTorch, XGBoost, Model Evaluation (ROC-AUC, PR-AUC, F1), Cross-Validation, Hyperparameter Tuning
LLMs & NLP:	Transformers, HuggingFace, LangChain, RAG, FAISS, SentenceTransformers, Prompt Engineering
MLOps & Deployment:	FastAPI, Docker, CI/CD, MLflow, Model Versioning, Drift Detection, SHAP Explainability
Data & Tools:	Pandas, NumPy, Feature Engineering, Data Preprocessing Pipelines, Git, Linux

Projects

Credit Default Risk Prediction System (Production ML + API Deployment)
Github Repo | *Live Deployment*

- Engineered an end-to-end credit default risk prediction system on 300K+ structured financial records with severe class imbalance.
- Built and benchmarked Logistic Regression, Random Forest, and XGBoost models; achieved ROC-AUC 0.76 and PR-AUC 0.25 with optimized XGBoost.
- Designed a production-grade preprocessing pipeline with feature engineering, categorical encoding, imputation, and class imbalance handling.
- Deployed the trained model as a scalable REST API using FastAPI for real-time default probability prediction.
- Integrated MLflow for experiment tracking, model versioning, and reproducible ML workflows.
- Implemented SHAP-based model explainability for local and global feature attribution.
- Built monitoring components including data drift detection and prediction stability checks.

Intelligent Financial Compliance Assistant (LLM + RAG System)
Github Repo | *Live Deployment*

- Designed and implemented Retrieval-Augmented Generation (RAG) system for KYC/AML compliance document querying.
- Built document ingestion pipeline with PDF parsing, chunking strategy, and embedding generation.
- Used SentenceTransformers embeddings with FAISS vector store for efficient semantic retrieval.
- Integrated HuggingFace Transformer models for context-aware answer generation.
- Engineered prompt constraints to ensure grounded, audit-safe responses.
- Deployed scalable REST API using FastAPI.
- Designed architecture to handle token limits, context optimization, and OCR fallback for scanned documents.

Experience

Machine Learning Intern — **Jan 2024 — April 2024**
Summer Internship– Machine Learning & Deep Learning Using Python — *Bhubaneshwar, Odisha*

- Developed supervised and unsupervised ML models using Scikit-learn and TensorFlow.
- Implemented classification pipelines including feature scaling, encoding, and cross-validation.
- Evaluated models using accuracy, precision, recall, and ROC-AUC metrics.
- Built mini-projects involving real-world data preprocessing and model optimization.

Education

Bachelor of Technology (CSE), *Silicon University* (CGPA : 8.08) — 2022 — present
Higher Secondary, DAV NTPC Kaniha (Percentage: 85.9%) — 2020 — 2022
Matriculation, DAV NTPC Kaniha (Percentage: 95%) — — 2020

Activities

2x Finalist in Nirman Hackathon.
Lead a team of 7 in college events.
Participated in Build-a-thon in SparkUp Summit
Received recognition for leadership and organizational skills during many fest, contributing to the overall success of college events.