Aftaab Jariwala

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Professional Summary

- Around 4 years of experience as a Machine Learning Engineer specializing in natural language processing (NLP), Artificial Intelligence, Deep Learning, Machine Learning, Data Mining, Advanced analytics, tatistical modeling, GenAI (LLM), and computer vision.
- Expertise in building various machine learning models using algorithms such as Linear Regression, Logistic Regression, Naive Bayes, Support Vector Machines (SVM), Decision trees, KNN, K-means Clustering, and Ensemble methods (Bagging, Gradient Boosting).
- Proficient in implementing and fine-tuning deep learning algorithms, including Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), LSTM, Transformers, BERT, GPT, and Llama.
- Excellent in Python to manipulate data for data loading and extraction and worked with Python libraries like NumPy, Pandas, Matplotlib, SciPy, Scikit-learn, Seaborn, TensorFlow, Ggplot2, OpenCV, PyTorchand NLTK.
- Expert in managing AWS cloud resources like EC2, S3, Elastic Load Balancer, RDS, Glacier, SQS, SNS, Cloud Formation, Route53 and Identity and Access Management.
- Proficient in visualization tools like Tableau, Power BI, and Excel. Skilled in utilizing cloud platforms, including Azure DevOps and Google Cloud (Vertex AI, Google Cloud Storage) for data engineering and machine learning model deployment.

Education

Master of Science in Computer Science | Western New England University, Springfield, MA

Skills

Language/ IDE's: Python, React, C#, Java, C++, MATLAB, Jupyter Notebook, Google Colab, VS Code, SSMS
Machine Learning: Linear, Logistic Regression, Decision Trees, Random Forests, NumPy, SVM, A/B Testing, Naive Bayes
Deep Learning: CNN, RNN, LSTM, NLP, Large Language Model (LLM), LangChain, Hugging Face Transformers (BERT, GPT-3)
Cloud/Visualizations: AWS (EC2, SQS, SNS, Code Deploy, CloudWatch, API Gateway), GCP (Vertex AI, Google Cloud Storage), Tableau, Power BI
Statistical Techniques: Hypothesis Testing, Data Visualization, Data Modelling, A/B testing, Model Evaluation
Packages and Frameworks: NumPy, Pandas, Matplotlib, Scikit-learn, Seaborn, TensorFlow, Keras, NLTK, XGBoost, PyTorch
Database and Tools: SQL Server, MySQL, PostgreSQL, MongoDB, Redis, Neo4j

Work Experience

JPMorgan Chase & Co., MA   **Jun 2024 - Present**
Machine Learning Engineer

- Built and optimized machine learning models for financial analytics, achieving a 35% improvement in prediction accuracy and enabling data-driven decision-making.
- Engineered LSTM-based fraud detection models with a 98% accuracy rate, successfully identifying high-risk transactions and enhancing compliance measures.
- Improved model performance by an average of 10% by fine-tuning BERT for text classification and incorporating data generated by Generative Adversarial Networks (GANs).
- Established Convolutional Neural Networks (CNNs) for anomaly detection in financial transaction data, achieving a 38% reduction in fraudulent activities and improving overall transaction monitoring efficiency.
- Performed hyperparameter tuning using GridSearchCV and conducted extensive feature engineering, achieving a 5% improvement in model performance.
- Developed robust inference pipelines using FastAPI and deployed models on AWS services (EC2, Lambda, SageMaker) to support high-volume financial data processing.
- Leveraged cloud-based ML platforms such as AWS SageMaker and Google Cloud AI Platform to accelerate model development and deployment, reducing time-to-market by 30%.
- Automated and optimized machine learning workflows, reducing operational latency by 40% and enabling efficient data ingestion and processing.
- Partnered with analytics and engineering teams to design scalable ML pipelines and streamline model deployment for various financial products.
- Leveraged time-series models to predict peak hours, enabling staffing adjustments that reduced operational costs by 30% during off-peak periods.
- Built scalable, high-performance backends using FastAPI and WebSockets for machine learning inference pipelines, leveraging multiprocessing for a 2x speed improvement and real-time monitoring.

Aspire Technolab, India   **Jan 2020 – Dec 2022**
AI & Deep Learning Developer

- Designed and fine-tuned ML models, like BERT and RNN-based NER, achieving high accuracy for intent classification and key entity extraction.
- Developed automated pipelines using OCR, RAG, and OpenCV, enhancing text extraction accuracy by 98% and reducing data retrieval latency.
- Boosted ML model efficiency by 38% through algorithm optimization, quantization, and pruning while improving anomaly detection and image recognition accuracy.
- Built and deployed models using XGBoost, CNN, and time-series analysis to optimize business operations, increasing sales demands.
- Deployed scalable models on AWS, leveraging CloudWatch for system monitoring and reducing issue resolution time by 30%.
- Utilized Pandas, NumPy, SciPy, Scikit-learn, PyTorch, and OpenCV to streamline image preprocessing, feature extraction, and deep learning model development.
- Utilized unsupervised approaches such as k-means, Gaussian Mixture Models (GMM), and Encoder-Decoder architecture, resulting in a 20% increase in the precision of text embeddings for evaluation.
- Collaborated on developing a customer service chatbot using Large Language Models (LLMs), integrating with Confluence to retrieve and parse knowledge base articles, enhancing customer satisfaction and service efficiency by 25%.
- Conducted a comprehensive EDA on social media posts, extracting text, metadata, and NLP features. Developed a Long Short-Term Memory (LSTM) model for multi-class sentiment prediction, achieving an 89% validation F1-score.
- Built deep learning models with PyTorch for diverse tasks like image recognition (object detection), NLP tasks (sentiment analysis, topic modeling), and time series forecasting, achieving validation accuracy of 95%.