Ganesh Krishna

Machine Learning Engineer

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Professional Summary

AI/ML Engineer with **4+ years of experience** in developing and deploying predictive and deep learning models across healthcare, enterprise, and research environments. Skilled in **Python, TensorFlow, PyTorch, Scikit-learn, and PySpark** with hands-on expertise in **MLOps, AWS, Azure, and data pipeline automation**. Strong in **feature engineering, model optimization, and explainable AI (XAI)** with a proven ability to deliver scalable, compliant, and data-driven solutions.

Experience

McKesson – **AI/ML Engineer** | **USA | Aug 2024 – Present**

- **Developed** end-to-end predictive models using **Python, Scikit-learn, and TensorFlow**, forecasting patient medication adherence from structured healthcare datasets of over **500K+ records**.
- **Constructed** data ingestion and transformation pipelines with **PySpark** and **AWS Glue**, automating ingestion from pharmacy, clinical, and claims sources while maintaining HIPAA compliance.
- **Optimized** hyperparameter tuning and model training through **MLflow** and **GridSearchCV**, achieving measurable performance gains across drug demand forecasting models.
- **Implemented** explainable AI (XAI) methods using **SHAP** and **LIME** to interpret diagnostic predictions for clinicians, improving transparency in medical decision workflows.
- **Deployed** trained models as scalable **RESTful APIs** via **Flask** and **Docker**, integrated into McKesson's analytics platform for near real-time prescription insight delivery.
- **Integrated AWS SageMaker** pipelines for model retraining and monitoring, reducing manual update frequency and ensuring version control across multiple ML environments.
- **Collaborated** with data governance and compliance teams to align ML operations with **HIPAA** and **GDPR** requirements, safeguarding sensitive medical and patient data.
- **Presented** analytical outcomes and performance dashboards using **Power BI** and **Tableau**, enabling executive stakeholders to track operational efficiencies and medication supply trends.

University of Texas at Arlington — **Research Assistant | USA | Aug 2023 – May 2024**

- **Investigated** sentiment analysis approaches using **BiLSTM** and **Word2Vec**, achieving **90.3% classification accuracy** across 50K+ academic and review text samples.
- **Engineered** SQL and **PL/SQL** data pipelines to preprocess institutional datasets, reducing query latency and enhancing model training throughput.
- **Conducted** data mining, clustering, and classification experiments with **Python**, **Scikit-learn**, and **Weka**, supporting multiple academic research initiatives.
- **Generated** synthetic data samples using augmentation strategies to balance underrepresented student activity datasets, strengthening model generalization.
- **Prepared** structured documentation and technical summaries for research publications and conference presentations under faculty supervision.
- **Delivered** analytical findings through interactive visual reports and presentations using **Power BI** and **Matplotlib**, ensuring data clarity for non-technical audiences.

Dell Technologies – **Machine Learning Engineer** | **India | Jun 2020 – Aug 2022**

- **Architected** predictive models to forecast hardware component failures using **Scikit-learn** and **XGBoost**, enabling proactive maintenance for enterprise clients and reducing downtime.
- **Curated** large-scale telemetry datasets exceeding **10TB** from server monitoring systems, applying **ETL pipelines** with **PySpark** and **Airflow** for structured ingestion and preprocessing.
- **Refined** model accuracy through **feature selection**, **hyperparameter tuning**, and **cross-validation**, achieving measurable improvements in anomaly detection precision.
- **Constructed** real-time inference APIs using **Flask** and **Docker**, integrated within Dell's internal analytics dashboards to automate alert generation.
- **Implemented TensorFlow Serving** for scalable model deployment across hybrid environments, maintaining consistent version control and monitoring model drift.
- **Evaluated** model explainability using **SHAP** values, translating technical outputs into actionable metrics for system engineers and product teams.
- **Collaborated** with cross-functional DevOps teams to integrate ML pipelines into **CI/CD workflows**, ensuring reliable production rollouts with minimal rollback incidents.
- **Documented** end-to-end model lifecycle processes, including data lineage, model governance, and validation results, aligning with **Dell's AI ethics and compliance standards**.

Technical Skills

- **Programming & Data Handling:** Python, NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, OpenCV, SQL, Jupyter Notebook
- **Machine Learning Techniques:** Supervised & Unsupervised Learning, Feature Engineering, Model Evaluation, Cross-Validation, Ensemble Methods (Random Forest, XGBoost)
- **Deep Learning:** Neural Networks, CNNs, RNNs, LSTMs, Transfer Learning, Computer Vision, Natural Language Processing (NLP)
- **Data Preprocessing & Analysis:** Data Cleaning, Normalization, EDA, Dimensionality Reduction (PCA, t-SNE), Outlier Detection
- **Model Deployment & MLOps:** Docker, Flask/FastAPI, REST APIs, CI/CD, AWS Sagemaker, MLflow, Git, Kubernetes (basic)
- **Big Data & Cloud Platforms:** AWS (S3, EC2, Lambda), Azure ML, Google Cloud AI Platform, Spark (PySpark), Hadoop (conceptual)
- **Mathematics & Statistics:** Linear Algebra, Calculus, Probability, Hypothesis Testing, Optimization Algorithms
- **Automation & Scripting:** Bash, Shell Scripting, Basic Linux Administration
- **Version Control & Collaboration:** Git, GitHub, Agile/Scrum, Jira, Code Reviews

Education

University of Texas at Arlington — **Arlington, TX**
Master of Science in Computer Science — Aug 2022 – May 2024

Loyola Institute of Technology — **Vijayawada India**
Bachelor of Technology in Computer Science and Engineering — May 2018 – May 2022

Projects

Multi-Agent LLM Debate: Benchmarking Reasoning and Factuality on GSM8K & MMLU

- **Designed** and implemented a **multi-agent debate** framework in Python to evaluate and **enhance LLM reasoning** and factual accuracy
- **Simulated** structured debates between **GPT-4 Turbo** and **Gemini 2.5 Pro** using advanced prompt engineering and API-driven inference.
- **Benchmarked** models on GSM8K and MMLU datasets (100+ samples each), achieving up to **98% accuracy** and **96% convergence**.

Microsoft Bing News Analytics

- **Designed Azure Synapse** pipelines to ingest and transform real-time Bing news feeds into **Delta Lake tables** for analytical processing.
- **Implemented** sentiment classification using **Python, TextBlob**, and **Azure Machine Learning**, enabling automated news trend scoring.
- **Embedded** Power BI dashboards for continuous visualization of sentiment distribution and keyword frequency insights.

Search Engine on U.S. Inaugural Addresses

- **Formulated** a **Python-based search engine** utilizing **TF-IDF** vectorization and **cosine similarity** for document retrieval.
- **Optimized** query efficiency with **vectorized computation** using **NumPy** and **SciPy**, achieving faster text matching performance across large datasets.
- **Indexed** processed speeches into structured storage to enable **semantic query support** and efficient information extraction.

Certifications

- **CompTIA Security+ ce Certification(SY0-701)** — CompTIA | Oct 2025 | Code: 7752YXJ5XB111YLJ
- **Microsoft Certified: Identity and Access Administrator Associate** — Microsoft | May 2025
- **Microsoft Certified: Fabric Analytics Engineer Associate** — Microsoft | 2024 – 2026
- **Databricks Lakehouse Fundamentals** — Databricks | 2024