Kuljot Chadha

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PROFESSIONAL SUMMARY

An Engineer with over 3 years of experience specializing in the strategic design and automation of large-scale data systems. Expertise in building and managing resilient platforms for advanced analytics and machine learning by applying modern principles of Infrastructure as Code, containerization, and streamlined deployment lifecycles. Adept at translating complex data into actionable business intelligence and operational efficiency.

SOFTWARE SKILLS

- **Programming & Languages:** Python, Java, C++, R, SAS, Swift, SQL, Ignition SCADA, Shoplogix MES
- **Data Engineering & Warehousing:** Apache Spark, PySpark, Apache Kafka, Apache Hadoop, Airflow, Snowflake, ETL, Pandas, NumPy
- **Cloud & DevOps:** AWS (EC2, S3, Lambda, CloudWatch), Google Cloud (GCP), Terraform, Docker, Kubernetes, Jenkins
- **Data Science & Machine Learning:** Scikit-learn, TensorFlow, Keras, PyTorch, Linear & Logistic Regression, Decision Tree, ARIMA, Deep Learning (FRCNN, YOLO, ResNet50, VGG16, LSTM)
- **Databases:** PostgreSQL, MySQL, MS SQL, MongoDB
- **Frameworks & Developer Tools:** Flask, Django, FastAPI, Git, GitHub, Power BI, Tableau

PROFESSIONAL EXPERIENCE

Magna International | ***Software Programmer*** **Nov 2024 – Present**

- Improved production line fault response time by an estimated 20% by engineering a real-time analytics platform using the Ignition SCADA system, Apache Kafka, and AWS.
- Enabled self-service analytics by building the core ETL pipeline that unified data from the Shoplogix MES and on-premises Epicor ERP system into a centralized S3 data lake.
- Reduced manual data entry efforts by 10+ hours per week by architecting and deploying a Python-based application on AWS that replaced the paper-based shift-handoff system.

Sumitomo Rubber USA | ***Data Engineer*** **May 2022 – Oct 2024**

- Reduced manufacturing downtime by an estimated 15% by developing and deploying a suite of predictive maintenance models in Python, TensorFlow, and Scikit-Learn to forecast equipment failures.
- Lowered inventory carrying costs by over 10% by engineering a large-scale analytics platform using Apache Spark to process terabytes of production data stored in a Hadoop/HDFS data lake.
- Improved the reliability of data delivery for all analytics by implementing Apache Airflow to orchestrate complex ETL workflows, which reduced pipeline failures and the need for manual intervention by over 75%.

African Bank | ***Data Engineer*** **Feb 2020 – July 2021**

- Materially reduced fraud-related financial losses by architecting a real-time detection platform with Python-based ML models, which decreased false positives by over 15%.
- Slashed the mean time to respond to fraudulent activity by an estimated 35% by automating the alert lifecycle using a streaming data pipeline built on Apache Kafka and orchestrated with Apache Airflow.
- Enhanced the accuracy of risk models by over 20% by integrating external data sources and retraining predictive models with TensorFlow and Keras.

PROJECT

B2B Price Aggregation Platform and Real-Time Analytics

- Engineered a distributed web scraping fleet using Python (Scrapy) and Airflow with proxy rotation to bypass anti-scraping measures and ingest pricing data from hundreds of sources.
- Developed a Flask REST API to serve the aggregated and normalized data from a PostgreSQL database to a React frontend, enabling users to find and compare wholesale prices.

Real-Time Market Data Engine & Health Metric Analysis

- Built a low-latency data pipeline using Apache Kafka and Spark Structured Streaming to process high-throughput financial data from a live API source.
- Implemented stateful aggregations with watermarking in Spark to handle late-arriving data, persisting results to Timescale DB for visualization on a live Streamlit dashboard.

E-commerce Predictive Inventory Control System

- Deployed a time-series forecasting model (ARIMA) as a versioned REST API using Flask and Docker, serving predictions to optimize inventory levels.
- Architected and built an end-to-end MLOps pipeline on AWS using Airflow to automate the entire ML lifecycle, including monthly model retraining, validation, and deployment.

EDUCATION

- **University at Buffalo, The State University of New York** **Aug 2021 – Feb 2023**
  Master of Science in Data Science