Ahmad Uzzam Masood

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Data Engineer with 2+ years of experience building scalable ETL pipelines with Apache Spark and PostgreSQL, and orchestrating workflows using Apache Airflow. Skilled in real-time data processing, Anomaly Detection, and site outage prediction with Apache Spark (batch and streaming). Proficient in leveraging AWS services including S3, EC2, Lambda and DynamoDB to deploy cloud-native solutions. Developed real-time monitoring systems with Kafka, FastAPI, and PostgreSQL for critical operational insights. Experienced in TensorFlow and PyTorch for machine learning and deep learning applications.

Technical Skills

Software: AWS (S3, EC2, Lambda, DynamoDB, CloudWatch), Spark, Kafka, Hadoop, Airflow, Docker, Django
Programming Languages: SQL, Python

Experience

Data Engineer
PLC Group   *08/2023 - Ongoing*
- Built real-time Anomaly Detection and Site Outage Prediction pipelines using Kafka, Spark, Airflow, and PostgreSQL. Processed streaming data for site performance monitoring and outage predictions, accessible via FastAPI.
- Developed Performance Monitoring Pipelines for over 2500 sites, automating hourly and monthly performance tracking with Pandas and PostgreSQL.
- Optimized pipelines for large-scale data processing and operational alerts.

Key Technologies: Kafka, Spark, Airflow, PostgreSQL, FastAPI

Machine Learning Engineer - Intern
Quixel   *05/2022 - 10/2022*
- Developed a Python script that segments colors based on natural human perception, helping artists with cleaning textures.
- Automated ML pipelines by integrating Machine Learning tools in Photoshop using Javascript.

Embedded Systems Engineer - Intern
Center of Advance Studies in Telecommunication   *01/2022 - 03/2022*
- Analyzed rice seeds by deploying a prototype Seed Analysis system on Raspberry Pi 3. The system uses OpenCV for rule-based classification.

Projects

Automated Crypto Trading Bot Leveraging DynamoDB, EC2, Lambda, and CloudWatch

Developed a scalable cryptocurrency trading bot using Flask on EC2, with DynamoDB for storing bot configurations and user data. Integrated AWS Lambda for executing trading strategies and CloudWatch Events for automating scheduled execution based on user-defined frequencies. Implemented secure JWT authentication and trend analysis with Kraken API.

Predictive Site Outage Monitoring System leveraging Spark, PostgreSQL, Kafka, FastAPI

Designed and implemented a real-time outage monitoring system for distributed sites using PostgreSQL, Spark, Kafka, and FastAPI. This project handles large-scale site data, processes streaming energy and environmental metrics, and predicts outages with accurate alerts. It includes parallel processing with Spark, data ingestion from Kafka, and serves data via FastAPI endpoints.

Education

Bachelor of Science in Computer Engineering
COMSATS University Islamabad • August 2022 • CGPA: 3.09

Certifications

Deep Learning Specialization by DeepLearning.AI
Coursera - 2021

Machine Learning by IBM
Coursera - 2023

Additional Information

Languages: English (*fluent*), Urdu (*Native*)