Muhammad Talha

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Education

Bachelor in Computer Science — **Fast NUCES** — *peshawar* — **2020 - 2024**

- Relevant Courses : Data Structure, Algorithm, Data Science, OOP, Computer Modeling, Final Year Project in **Predictive Analytics.**

Experience

Data Science Intern - Asterisc Technocrat — **August 2023 - November 2023**

- Developed and deployed data preprocessing pipelines to clean and transform large datasets for analysis.
- Built machine learning models to extract actionable insights and solve business challenges.
- Conducted exploratory data analysis (EDA) and presented results using visualization tools like Matplotlib and Seaborn.

Virtual Experience Program Participant – Walmart Global Software Engineering, Forages (Virtual)

- Conducted market research and consumer needs analysis to create data-driven client recommendations.
- Analyzed data to identify trends and patterns, optimizing client-focused strategies.
- Delivered a structured solution approach showcasing problem-solving and data analysis skills.

Projects

Real-Time Traffic Analytics and Dynamic Signaling - Code — FYP

- Fetched real-time traffic data from Google API and simulated it using SUMO.
- Designed and implemented a real-time data pipeline with Kafka and Spark Streaming.
- ***Developed predictive models using SparkML to train a Random Forest Regressor for traffic volume predictions.***
- Displayed ***real-time, historical, and predictive analytics*** on a Streamlit dashboard.

Classifying Cyber Attacks in Networks - Code — June 2023

- Applied classification and clustering techniques using Python for detecting and analyzing cyber attacks.
- Performed data aggregation and visualization with pandas and matplotlib.
- Authored a professional report incorporating findings, using LaTeX for documentation.

Detection of Osteoarthritis in Radiographic Images - Code — 2023

- Built a data preprocessing pipeline, including resizing, normalization, noise reduction, and data augmentation.
- Fine-tuned pretrained models with TensorFlow and PyTorch for knee osteoarthritis detection.
- Designed deep learning architectures to enhance model accuracy for image classification tasks.

Skills

- Python | Numpy | **Pandas** | Matplotlib | **C++** | MySQL | Postgres | Git | Linux | **Apache Spark** | **Apache Kafka** | Apache Airflow
- **Kalman Filters** | Signal Processing | EDA | Simulation with SUMO | Tracking Algorithm
- **Predictive Analytics** | Data Wrangling | Data Visualization

Certifications

- Data Analysis with Python | Data Science Methodology | Data Science Orientation | Tools for Data Science V2 - Coursera IBM

Others

- **Data Science Teachers Assistant** - Fast NUCES — **2024**
  Mentored students in Data Science Subject, Teaching different tool and techniques