Muhammad **Saad**

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Summary of Qualifications

- Over 5 years of experience in developing machine learning projects in areas of image processing, time-series analysis and NLP
- Experienced in deploying machine learning models on cloud platforms such as AWS & Heroku using Flask and HTML
- Proficient in utilizing Python and its associated libraries such as Numpy, Pandas, Keras, Tensorflow, OpenCV and Sci-Kit Learn
- Skilled in using SQL for large datasets for analysis and data modelling
- Over 3 years of diverse managerial experience in operations by moving through various roles with increasing responsibilities

Work Experience

Data Scientist
July 2020 - Present

LAKES SOFTWARE
Waterloo, ON

- Developed spatial-temporal machine learning architectures involving attention based models to forecast the concentrations of pollutants in the environment
- Analyzed and preprocessed datasets using various techniques such as correlation to use it in the machine learning model
- Improved the current forecasting results by 20%
- Created reports and visualizations to communicate key results to the management team

Machine Learning Graduate Researcher
January 2019 - December 2020

LOBLAW COMPANIES LIMITED || UNIVERSITY OF WATERLOO
Waterloo, ON

- Implemented machine learning based models to forecast the prices and yield of fresh produce using environmental factors
- Conducted preprocessing of the dataset used in the machine learning model using several techniques including imputation
- Achieved a 28% improvement in forecast as opposed to the baseline models
- Devised modified architectures of Recurrent Neural Networks (RNN) to interpolate missing values thereby enabling the data to be usable for predictions
- Published 5 conference papers in the Institute of Electrical and Electronics Engineers (IEEE) illustrating the developed forecasting and interpolation models

Material and Product Services Engineer
January 2018 - December 2018

PHILIP MORRIS INTERNATIONAL
Karachi, PK

- Generated a profit of USD 1.7 million by ushering various productivity projects by performing data analysis
- Developed a sales predictive model and optimized inventory thereby reducing the inventory cost by 23%
- Increased client base through excellent communication skills to execute new product initiatives, line extensions and product change

Material Quality Assurance Engineer
August 2016 - December 2017

PHILIP MORRIS INTERNATIONAL
Karachi, PK

- Developed software to predict the profile of cigarettes and saved USD 40K by optimizing the specification of cigarettes using it
- Increased supplier pool by 30% and reduced logistics cost by 20% by using excellent negotiation skills for pricing of new suppliers
- Enhanced supplier adherence from 40% to 92% by initiating the concept of auditing them for their adherence to the procedure

Quality Systems Engineer
August 2015 - July 2016

PHILIP MORRIS INTERNATIONAL
Karachi, PK

- Designed a predictive model that predicts the quality of cigarettes in the future thereby improving the quality index by 47%
- Visualized the performance of machines in real-time to management reducing the downtimes by 26%
- Managed customer complaints and rectified the root causes using analytical skills

Relevant Projects

Movie Recommender System
September 2020

Tools Used: *Python, Numpy, Pandas, Sci-Kit Learn, Flask, HTML, AWS*
- Developed a web-based movie recommendation system that recommends Hollywood and Bollywood movies based on the movie provided by the user
- Implemented content-based filtering methodology to provide the recommendations
- Constructed dynamic website using HTML5 and Flask library and deployed the model on AWS for real-time utilization

Real-Time Face Mask Detector
August 2020

Tools Used: *Python, Tensorflow, Keras, OpenCV, Numpy, Pandas, Sci-Kit Learn*
- Designed and implemented a real-time face mask detector which is deployable to numerous embedded systems
- Utilized the concept of Transfer Learning to construct the Convolutional Neural Network (CNN) and incorporated detection accuracy in real-time
- Obtained the maximum accuracy of 94%

Automated Time Series Imputer and Forecaster
July 2020

Tools Used: *Python, Tensorflow, Keras, Tkinter, Numpy, Pandas, Sci-Kit Learn*
- Constructed a user interface that enables the user to upload any time series dataset to conduct imputation and/or forecasting
- Deployed various ensemble imputation methods and attention based forecasting models to generate better results

Education

Masters in Electrical and Computer Engineering
January 2019 - December 2020

UNIVERSITY OF WATERLOO
Waterloo, ON

- GPA : 3.86/4.00
- Relevant Courses: SQL for Data Science, Big Data Analytics, Natural Language Processing, Algorithm Design and Analysis

Bachelors in Electronics Engineering
September 2011 - June 2015

GHULAM ISHAQ KHAN INSTITUTE OF ENGINEERING SCIENCES AND TECHNOLOGY
Topi, Pakistan

- GPA : 3.67/4.00