SYED DANISH AHMED

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Education

CARNEGIE MELLON UNIVERSITY — Pittsburgh, PA
Master of Information Systems Management, BIDA – Data Science, **QPA: 3.89** — Dec 2020
Relevant Courses: Machine Learning, Artificial Intelligence, Unstructured Data Analytics, Statistics, Econometrics, Business Analytics

S.G.S.I.T.S — Indore, India
Bachelor of Engineering in Information Technology, GPA: 3.81/4.00 (First Class with Distinction) — Jun 2015
Relevant Courses: Data Structures, Algorithms, Database Management, Data Mining, Linear Algebra, Distributed Systems

Skills

- **Machine Learning:** Regression, Classification, Segmentation, Dimensionality Reduction, Gradient Boosting, Deep Learning - DNN, CNN, RNN
- **Functional:** Natural Language Processing, Anomaly Detection, Time Series Forecasting, A/B Testing, Agile, Scrum
- **Languages:** Python, Java, R, SQL
- **Business Intelligence and Visualization Tools:** R Shiny, Tableau, Power BI
- **Data Engineering & Model Deployment Tools:** IBM MQ, Flask, Azure ML, Hadoop, PySpark, AWS, MongoDB

Academic Experience

CARNEGIE MELLON UNIVERSITY — Aug 2019 – Present

- Developed a model for Musculoskeletal Disorder physiotherapy exercise recognition using sensor data from accelerometers
  - Generated features by windowing with overlap and used Discrete Cosine Transform (DCT) for feature transformation and selection
  - Implemented a **1D Time Distributed CNN – LSTM** architecture using **Keras and Tensorflow** & achieved AUC of 97% over seven exercises
- Developed a **2D CNN** classifier using **Keras and TensorFlow** for apparel macro-category recognition
  - The model achieved an overall accuracy of 89% on 21 macro-categories for five different apparel categories
- Implemented a **Multilayer Perceptron (MLP)** classifier for text-based Emotion Classification using **Word2vec word embedding**
  - The model was able to identify nine different emotions, like joyful, terrified, jealous, etc. with an accuracy of 77%
- Implemented a **Gradient Boosting – LightGBM** classifier with **PCA** on Vesta's real-world **high-dimensional** e-commerce transactions dataset
  - The model can improve the efficacy of fraudulent transaction alerts with an AUC of 94%
- Built a predictive model using **scikit-learn** to guide profitable loan investments using the historical dataset for loans issued on LendingClub
  - Built classification models to predict loan default probability and regression models to predict the expected return on each loan
- Developed a semi-supervised **autoencoder model** in **Keras** to recognize fraudulent credit card transactions using reconstruction error
- Built a Landmark Classification model by **Transfer Learning** using a pre-trained **ResNet18** CNN in **PyTorch** with 85% accuracy over ten classes
- Implemented ML algorithms - **Decision Trees, K-means, Logistic Regression and Neural Network with SGD** from scratch in **Python**

Work Experience

PricewaterhouseCoopers (PwC) Digital Transformation and Innovation Center at CMU — Pittsburgh, PA
Data Science Research Intern — Jun 2020 – August 2020

- Developing a Machine Learning framework for **fraud detection** on transactional data using unsupervised **Anomaly Detection** techniques

MU SIGMA: Data Science provider for 140 Fortune 500 Companies — Bengaluru, India
Senior Decision Scientist – Data Science — Oct 2015 – May 2019

- Implemented **Named Entity Recognition (NER)** model using **Bidirectional LSTM** and **ELMo embeddings** for a Conversational AI system
  - Identified and extracted entities from conversation transcripts with an accuracy of 81% and deployed as a service using Flask
- Developed **R Shiny** application to visualize high-dimensional data using **Hierarchical Voronoi Tessellations** & **Sammon Projection**
- Created a **real-time anomaly detection** system for **predictive maintenance** of A/C units – **density-based clustering & polynomial regression**
- Automated the annotation process for a Customer Support Chat-Bot using Natural Language Processing based **Topic Modeling** algorithms
  - The **Latent Dirichlet Allocation (LDA)** model resulted in 27% more unanswered texts being mapped to their correct intents
- Developed and deployed a real-time microservice for auto-releasing incorrectly flagged financial transactions
  - Financial Messages (SWIFT) are picked from an IBM Message Queue and reviewed using **Cosine Similarity** matching algorithm
- Identified clusters of Online Advertisers to be targeted for monetizing the opportunity generated due to major events
  - Leveraged **ARIMA time-series forecasting** to predict the baseline Spend dollar value with MAPE less than 9%
- Devised and implemented a **time-series Anomaly Detection** framework for detecting Bot traffic and the associated timeframe
  - Deployed the pipeline on **Azure ML** for automating model refresh and **Power BI** report generation

Awards & Recognition

- Won the 3rd prize in Deloitte Case Challenge 2019 organized at CMU Heinz College — September 2019
- Dean's List for outstanding academic performance — June 2020
- Received multiple Mu Sigma Spot Awards for showcasing quality and timeliness in project execution — 2016, 2017, 2018