Anas Muhammad
DATA SCIENTIST
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Junior data scientist with a track record of developing impactful machine learning algorithms and data science solutions to drive automation and data-driven decision making. Familiar with applying principles of agile management to projects and tasks

Work Experience

Data Scientist   *Dubai, United Arab Emirates*
ETISALAT   *July 2018 - July 2019*

Largest telecommunication provider in the United Arab Emirates with over 41 billion USD market capitalization.

- Automated the manual process of inspecting images by implementing Azure Custom Vision to auto caption equipment fault types, reducing SME workload by 40%.
- Reduced average fault resolution time by 30% by developing XGBoost classifier to perform automated resolution team assignment for trouble tickets.
- Slashed professional software licensing costs for detecting extremely rare and severe network faults by training deep autoencoders for anomaly detection on big data.
- Reduced roaming maintenance cost by 25% by performing time-series forecast of customer roaming data usage and recommending optimized roaming test units per country.
- Eliminated manual classification process of customer complaints by performing NLP techniques and training an SVM for complaint severity classification.
- Improved domain-wide automation KPI by 30% by performing data wrangling and data mining on big data to deduce suitable trouble tickets to be automated.
- Presented analysis and visualizations to demonstrate the impact of AI solutions to management, stakeholders, engineering teams, and vendors.

Machine Learning and Robotics Researcher - Part Time   *Sharjah, United Arab Emirates*
AMERICAN UNIVERSITY OF SHARJAH   *July 2018 - February 2019*

Ranked number one university in the world in terms of cultural diversity as per Times Higher Education.

- Wrote and published a research paper on "Autonomous Drone-Based Powerline Insulator Inspection via Deep Learning" project.
- Extracted LBP, HOG and raw features for emotion recognition of Action Unit 18 facial expression through deep learning with Keras, XGBoost and Support Vector Machines.

Education

Master of Data Science Candidate   *Vancouver, Canada*
UNIVERSITY OF BRITISH COLUMBIA   *August 2019 - Exp. June - 2020*

- A 10 month accelerated program to equip students with skills necessary to work as professional data scientists.

BSc. Electrical Engineering   *Sharjah, United Arab Emirates*
AMERICAN UNIVERSITY OF SHARJAH   *2013 - 2017*

- GPA: 3.55/4.0
- Scholarships: Dean's List, Chancellor's List and Merit Scholarship.

Skills

Programming	SQL, python (numpy, pandas, scikit-learn, multiprocessing, dask, spacy, pyspark), R (dplyr, ARIMA, glm), C/C++
Data Science	Data Wrangling, Feature Engineering, Data Mining, Data Generation, Feature Selection
Supervised ML	KNN, Random Forest, Decision Trees, GBM, SVM, LDA, Regularization, Linear Regression, Logistic Regression
Unsupervised ML	K-means, PCA, Collaborative Filtering, Content-based Recommendation, HMM
Deep Learning	TensorFlow, keras (DNN, CNN, RNN, LSTM, Deep Autoencoders), H2O, CNTK, PyTorch
Statistical Analysis	Bayesian Inference (JAGS, TensorFlow Probability), Causal Inference, Experimental Design, Factor Analysis, A/B Testing
Visualization	altair, matplotlib, seaborn, dash, plotly, cufflinks, ggplot, QlikView, Power BI
Miscellaneous	Databricks, Hive, MongoDB, Docker, Git, Make, Web Scraping, Azure, AWS, CSS, Sass, Flask, OpenCV, Linux, Ubuntu

Projects & Publications

Robot 2019 - Fourth Iberian Robotics Conference [Python, OpenCV, TensorFlow]
FEUP, Portugal

First author of: "Autonomous Drone-based Powerline Insulator Inspection via Deep Learning" - *URL*
November 2019

- Designed and developed a drone to autonomously fly over and inspect modeled high voltage lines to aid in human safety and reduce maintenance cost for power line maintenance companies by up to 70-80%.
- Preprocessed and labeled primary data consisting of one thousand images per target class; polluted and clean insulators.
- Performed transfer learning on Google's pre-trained convolution neural network to perform image classification on a live video feed using tensorflow and OpenCV.

Auto Video Organizer [Python, Speech Recognition, NLP]
UBC, Vancouver

Personal project - *URL*
April 2020 - present

- Extracted audio from 1-1.5 hour long lecture videos and filtered out dead zones and noise.
- Converted preprocessed audio to text and performed text preprocessing to compute text similarity using TFIDF vectorizer to match unorganized and unlabeled lecture videos with appropriate lecture notes.

Lyrics Transliteration [Python, Keras, NLP]
UBC, Vancouver

Leader of a four person team - *URL*
January 2020 - present

- Transliteration of text from one language to a phonetic English form by performing neural machine translation, aimed to enable singers to sing in languages they are unable to read.
- Web scraped Chinese and matching Pinyin text data, performed transfer learning on a pre-trained seq2seq model with attention using tensorflow to perform transliteration from Chinese to Pinyin.

Collaborative Data Science Interview Preparation [Python]
UBC, Vancouver

Organizer and repo owner - *URL*
February 2020 - March 2020

- Organized weekly meetups to help students prepare for technical interviews through collaborative learning.
- Posted coding challenges on my public repository, assessed submissions from peers, and provided one-to-one feedback.

PyJAGS Docker Image [Python, Docker, Linux]
UBC, Vancouver

Personal project - *URL*
February 2020 - March 2020

- Developed a docker image to provide learning resources for 40% of students in my class whose systems could not run a crucial software for Bayesian Inference course.
- Maintained docker image with Data Science software stack needed for the Master of Data Science program and added additional libraries requested by students.