

# Anas Muhammad

DATA SCIENTIST

Vancouver, Canada

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Junior data scientist with experience developing impactful machine learning and data science solutions through Python, TensorFlow and various cloud services. 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.

- Slashed professional software licensing costs for detecting extremely rare and severe network faults by training deep autoencoders for anomaly detection on big data (>200 GB).
- Reduced average fault resolution time by 30% by developing XGBoost classifier to perform automated resolution team assignment for trouble tickets.
- 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 (>200 GB) and deducing suitable candidates of trouble tickets to be automated.
- Prepared presentations and visualizations to demonstrate impact analysis of self-developed AI solutions to management, stakeholders and vendors.
- Coordinated with different departments to acquire data, assemble data science use cases and communicate user requirements to vendors, and validate and report effectiveness of vendor based AI solutions.

### 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

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

# Projects & Publications

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## Robot 2019 - Fourth Iberian Robotics Conference

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.

## Lyrics Transliteration

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.

## Lecture Video Organizer

UBC, Vancouver

PERSONAL PROJECT - [URL](#)

April 2020 - present

- Extracting audio from 1-1.5 hour long lecture videos and filtering out dead zones and noise.
- Converting preprocessed audio to text and performing text similarity using Bag of Words and TFIDF to match lecture videos with appropriate lecture notes.

## Collaborative Data Science Interview Preparation

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 regularly, assessed submissions from peers, and provided one-to-one feedback.
- No longer active due to current circumstances.

## PyJAGS Docker Image

UBC, Vancouver

SELF-STARTED SOLUTION - [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 the entire Data Science software stack needed for the Master of Data Science program and added additional libraries requested by students.