Kay Ayala

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Education

Southern Methodist University — Nov 2018 – Dec 2020
MS in Data Science

University of California, Santa Cruz Extension — Dec 2017 – Apr 2018
Continuing education – programming

University of California, San Diego — Sept 2014 – Jun 2017
BS Cognitive Science with emphasis in Computation (**Machine Learning**)

Skills

Programming Tools: **Python**, **R**, **SQL**, **Tensorflow**, **Keras**, **Docker**, AWS, NumPy, SciKit-Learn, SciPy, pandas, Matplotlib, Git

DS and ML: **Neural Networks** and **Deep Learning** NN DL, Machine Learning models ML, **GLM**, Probability, **Statistics**, **Experimental Design, AB Testing**, Natural Language Processing **NLP**, **Time Series Analysis**, **Data Visualization**

Projects

Optical Character Recognition (**OCR**) for Arabic handwriting

- Classified Arabic handwritten character images with 93% accuracy
- Utilized a **convolutional neural network** using **Tensorflow**
- Implemented two convolutional layers each with their own pooling layer
- Utilized **python** and Jupyter Notebooks on **Amazon Web Services (AWS) EC2**

Project Nyx

- Total Data Science project consisted of 23 people over 48 hours
- Helped develop **business objectives** and **data visualization**
- Assisted in coordination between management, reporting, and modeling teams

Time Series Forecast of Bike Share Data

- Forecasted ridership using **ARMA**, **ARIMA**, **VAR**, **NN**, and **VAR-ARMA** Ensemble
- Written in **R** using tswge

Markov Chord Progression Generator

- Implemented **Markov Chain** to create and play new chord progressions
- Built the dataset from listings of common progressions
- Utilized **python** and pyaudio for sound generation

Performance Comparison of **SVM**, **Decision trees** DT, and **K-nearest neighbors** KNN

- Evaluated three datasets from the UC Irvine ML repository (wine production location estimation, wine quality classification, and breast cancer estimation)
- Written in **python** using **NumPy** and **scikit-learn**

Teaching

Taught Linear Algebra - Winter/Spring 2021

- Lectured for a **linear algebra** course associated with a ML2 course at SMU