Jared Murphy Data Scientist

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# Summary

I am a Data Scientist with a background in Mathematics and Statistics. I currently specialize in Time Series Analysis, and for my most recently completed project I used ARIMA modeling to test the validity of Covid-19 mortality data released by Johns Hopkins University and the CDC.  I am currently in the final stages of completing a comprehensive technical analysis of the crypto-asset Bitcoin.  In this project I compare the behavior of Bitcoins price action to that of several other asset classes and provide means for making long term forecasts for the future price of Bitcoin.

# Education

## Springboard Data science career track | march 2020 – january 2021

* Intensive course in data science, machine learning, Python and SQL

## B.S. Statistics | University of north florida | June 2013 – August 2015

* Minor: Economics

# Skills

## Data Science

* Python, pandas, numpy, statsmodels, sklearn

## Machine learning: supervised learning

* KNN, Regression, Decision Trees, Random Forest, Gradient Boosting, SVM, Precision, Recall, Accuracy, F1, ROC

## machine learning: Unsupervised learning

* K-means Clustering, Hierarchical Clustering, Mean-Shift Clustering, PCA, Cosine Similarity

## Mathematics and Statistics

* Calculus I, II, III, Linear Algebra, Mathematical Statistics, Probability, Bayesian Methods, Hypothesis Testing, ANOVA, Time Series Analysis

## Relational databases

* SQL, MySQL, SQLite

## Data Visualization with python

* Matplotlib, seaborn

# Projects

## Excess deaths due to covid-19 | may 2020 – november 2020

* Python Tools: numpy, pandas, matplotlib, sklearn, statsmodels
* Used CDC mortality data with ARIMA modeling and Facebooks Prophet to estimate excess deaths in US for 2/1/2020-10/31/2020
* Excess deaths were then compared to reported deaths due to Covid-19 and no significant discrepancies were found
* <https://github.com/jared-m-murphy/Springboard/blob/main/Capstone_1/Capstone_Final.ipynb>

## Bitcoin: A Technical analysis | november 2020 – january 2021

* Python Tools: numpy, pandas, matplotlib, seaborn
* Provided a description of Bitcoin as an emerging asset class and a comprehensive overview of its historical price action
* Retrieved various asset price data from API's using pandas
* Created customized charts using matplotlib to provide visual comparisons of Bitcoins volatility and returns to those of other asset classes
* Developed complex functions in python to extract meaningful insights from time series financial data
* Investigated Bitcoins popular Stock to Flow model and provided price predictions for the coming year
* <https://github.com/jared-m-murphy/Springboard/blob/main/Capstone_2/Bitcoin.ipynb>

# Employment

## capenter/residential painter | self-employed | hudson valley, NY | october 2016 - present

* Finish carpentry, rough carpentry, drywall, concrete, residential painting

## high school equivalency instructor | dutchess community college, poughkeepsie, ny | march 2016 – october 2016

* High school math and science teacher for students of all ages

# Awards

## graduated summa cum laude | university of north florida | august 2015

## inducted into pi mu epsilon mathematics honors society | florida eta chapter | august 2015

# Volunteering

## capenter/General contractor | kunzang palchen ling (buddhist center), red hook, ny | january 2016 – september 2019

* Construction and maintenance of a Buddhist monastery in upstate New York