

## Summary

I am a Data Scientist with experience using Python, SAS, Excel and SQL. I have an undergraduate degree in Statistics, and this has provided me with a firm understanding of much of the math behind the machine learning models used today. I recently finished a Data Science bootcamp with Springboard where I created several independent projects using Python libraries such as pandas, numpy, sklearn, matplotlib, and statsmodels. For my most recent project I completed 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. I am currently working through several textbooks to deepen my programmatic understanding of decentralized blockchain technologies while keeping current with my Python and SQL skills.

## 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](https://github.com/jared-m-murphy/Springboard/blob/main/Capstone%201/Capstone%20Final.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](https://github.com/jared-m-murphy/Springboard/blob/main/Capstone%202/Bitcoin.ipynb)

### **ETH TRADE | JANUARY 2021-FEBRUARY 2021**

- Python Tools: numpy, pandas, matplotlib, requests, json
- Retrieved real time spot pricing of crypto assets in json format from CoinMarketCap API using get request
- Stored past requests in a text file to keep track of portfolio performance over time
- Used matplotlib to give visual representation of portfolio performance
- Created detailed charts to best compare the price performance of ETH vs. BTC since 2016
- [https://github.com/jared-m-murphy/Portfolio/blob/main/Crypto/Trades/ETH Trade Git.ipynb](https://github.com/jared-m-murphy/Portfolio/blob/main/Crypto/Trades/ETH%20Trade%20Git.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

### **SALES ASSOCIATE | DESIGNER SHOE WAREHOUSE, JACKSONVILLE, FL | JULY 2010 – AUGUST 2015**

- Sales and customer service

## **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