Cryptocurrency Crystal Ball

30 days Forecast

3/20/2021

Created by Charlie Burds, Emmanuel Martinez & George Quintanilla

INTRODUCTION

Background
Cryptocurrencies are digital assets used for transactions and for investment purposes around the world. The largest currency, Bitcoin, has a market cap of $1.1 trillion USD.

Trading Bitcoin provides an opportunity for profit, just like trading stocks. Machine learning models can help predict the price of Bitcoin, to a degree of accuracy, and are being incorporated into trading strategies.

Purpose
The purpose of this study is to find out with what accuracy the price of the top 10 most common cryptocurrencies can be predicted using machine learning methods.

Goal
The goal of this project is to implement a machine learning model that can predict the top 10 most common cryptocurrencies price 30 days into the future. The model will indicate if these coins should be bought or sold depending on the current price.

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DATA COLLECTION

Machine Learning Data

Data Source – Kaggle

ETL – Data was stored and called from AWS S3 bucket. Transformed by dropping N/A's. We then pinpointed a single price point, in our case the "weighted price"

Cleaned Data – minute over minute Bitcoin pricing for 2020

Crypto Currency Analysis Data

Data Source – Facebook Prophet

ETL – Data was stored and called from AWS S3 bucket. It provided the 50 most poplar currencies .

Cleaned Data – day over day pricing for the Top 10 currencies for 2011-2020

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PREDICTION ANALYSIS

Develop a cryptocurrency search system with comparative technical analysis of 30 days forecast for a day-trader to utilize.

Define Threshold:

- Resistance level – daily highest price
- Support level – daily lowest price

If Predicted Bitcoin Price is above threshold → 'Buy'

If Predicted Bitcoin Price is below threshold → 'Sell'

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MACHINE LEARNING MODEL

Support Vector Machine ('SVM'):

- SVM are a set of supervised learning methods used for classificationa, regression and outliers detection.
- Advantages are effective in high dimensional spaces and uses a subset of training points in the decision function
- Disadvantages are if there are more features than samples the model can overfit and it does not directly provide probability estimates

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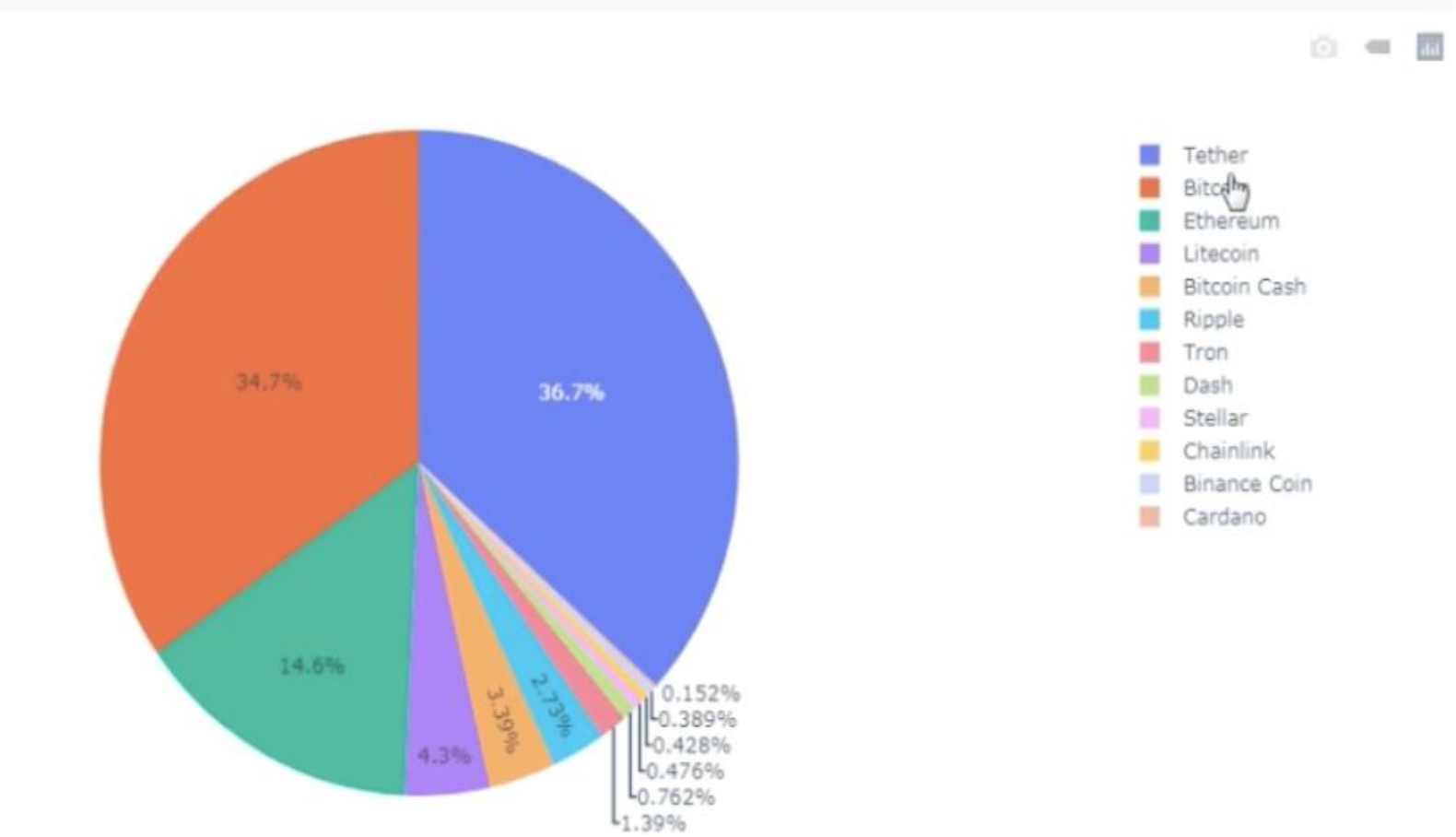
ANALYSIS

The below graphs are an analysis of our targeted cryptocurrencies. In this phase of the project, we used a source that provided market data on the top 50 most traded currencies, we then cleaned it and filtered to look at the top 10

Using FB Prophet and Colab we were able to create visualizations that give the viewer the best summary of those 10 currencies. These visualizations will be displayed on our dashboard and are interactive

GRAPH 1 - TOP CRYPTOCURRENCIES



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GRAPH 2 - TOP CRYPTOCURRENCIES

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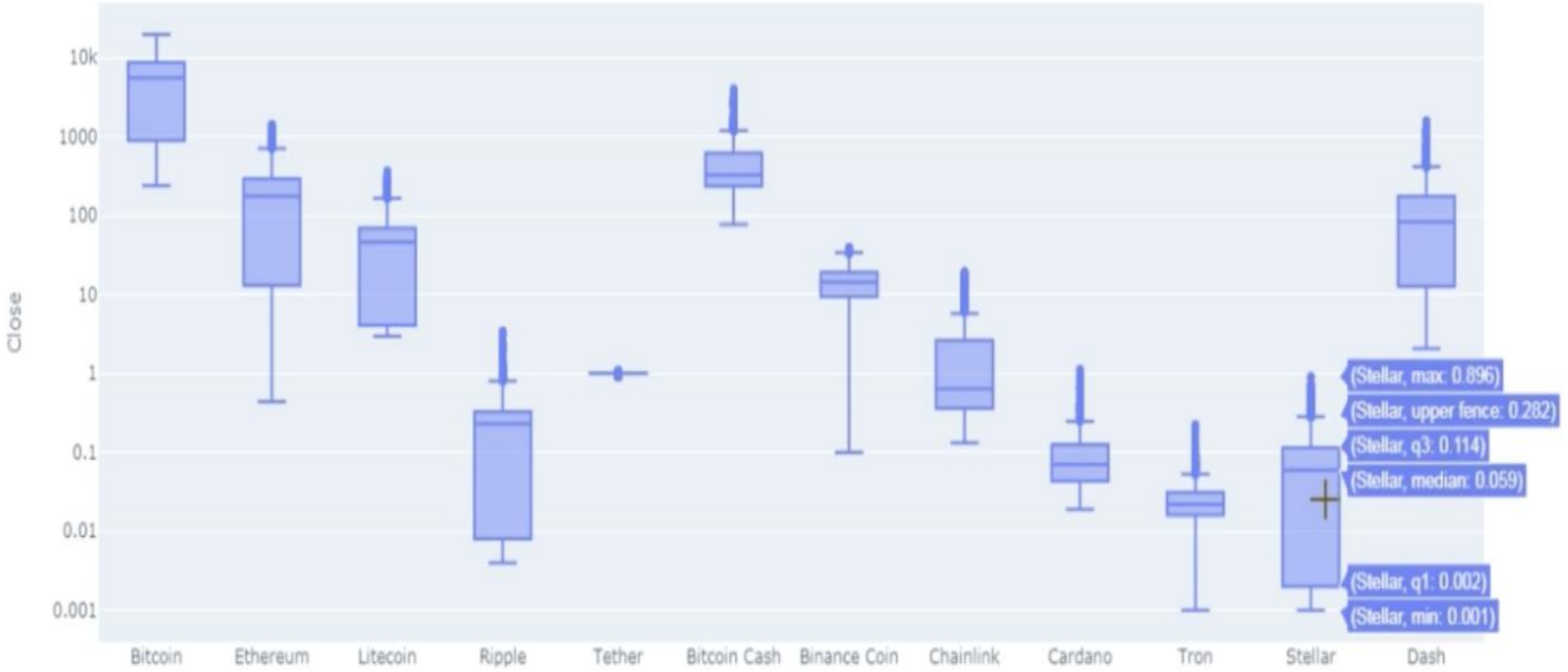

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GRAPH 3 - BITCOIN

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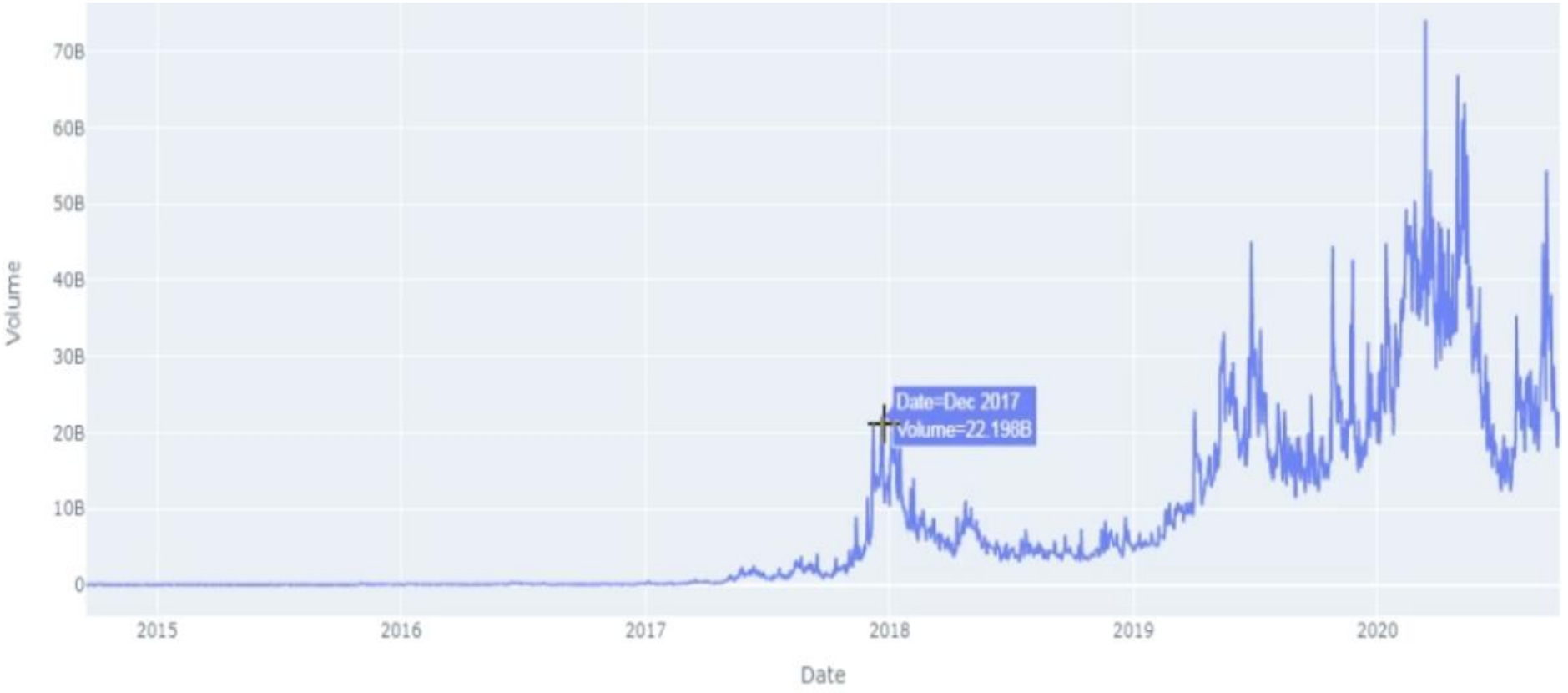

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GRAPH 4 – BITCOIN

30 days prediction

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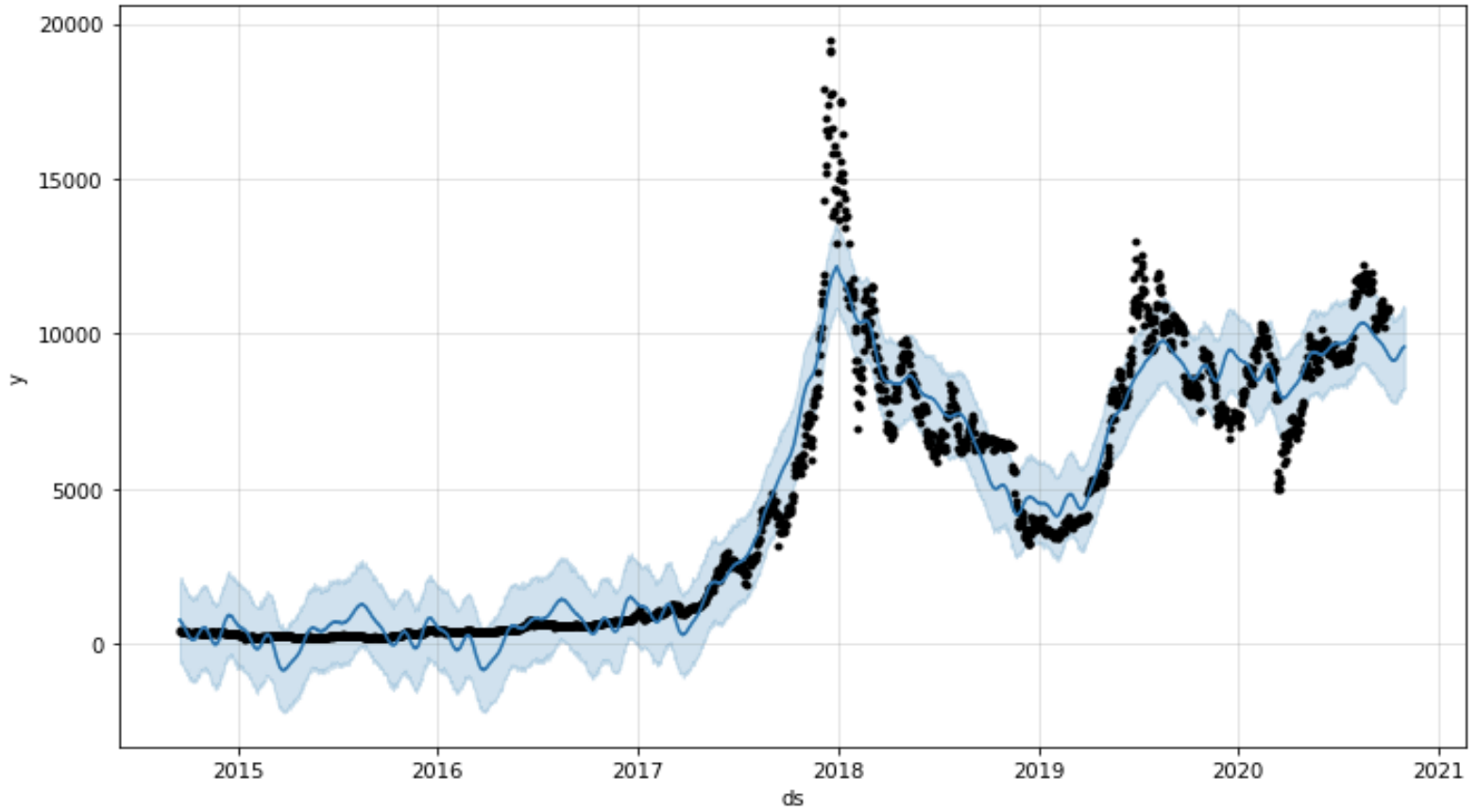
GRAPH 5 – BITCOIN

30 days prediction



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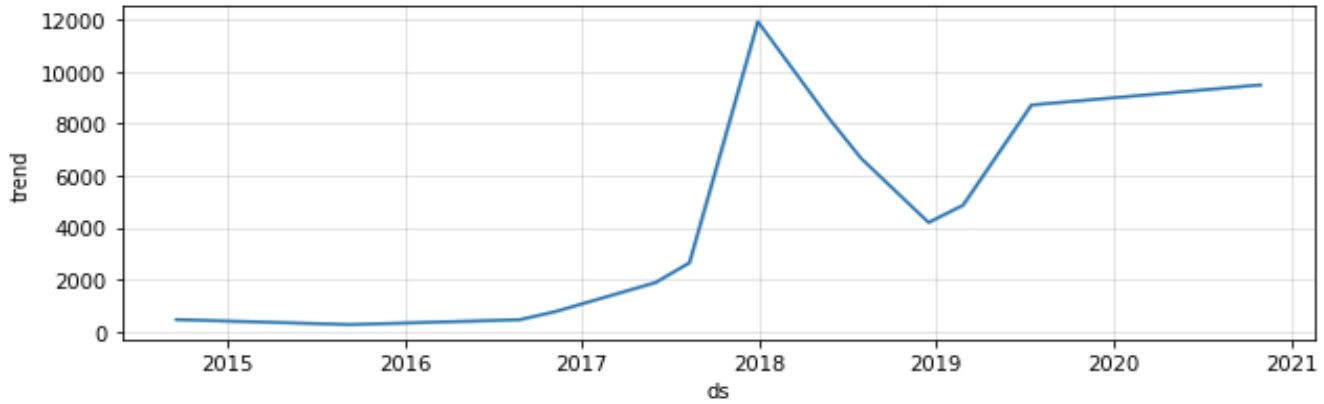
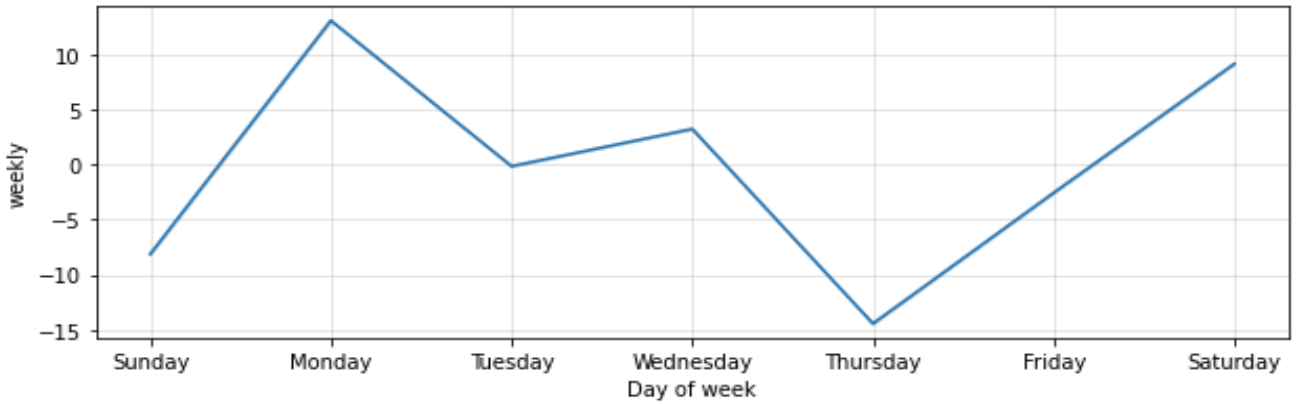
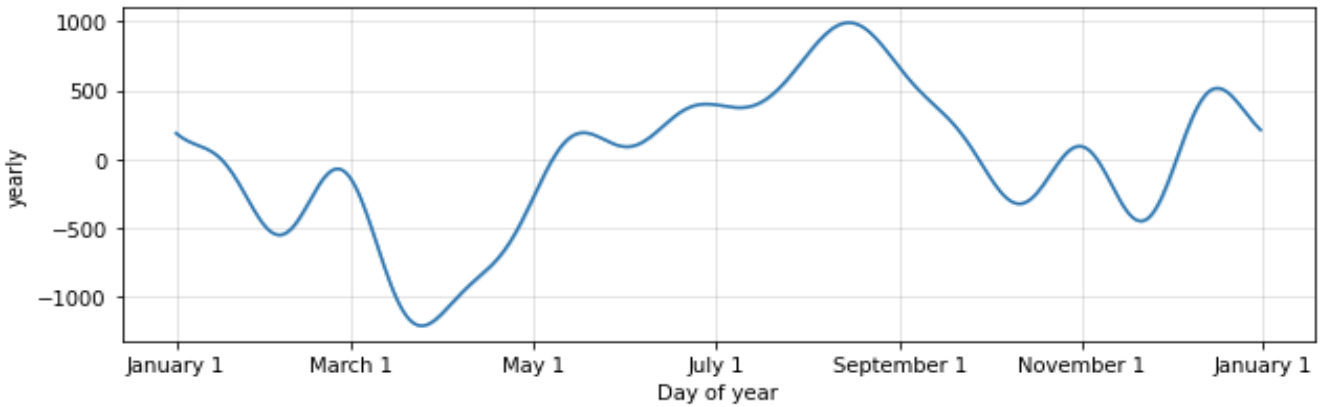
GRAPH 5 – BITCOIN

30 days prediction







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GRAPH 6 – BITCOIN

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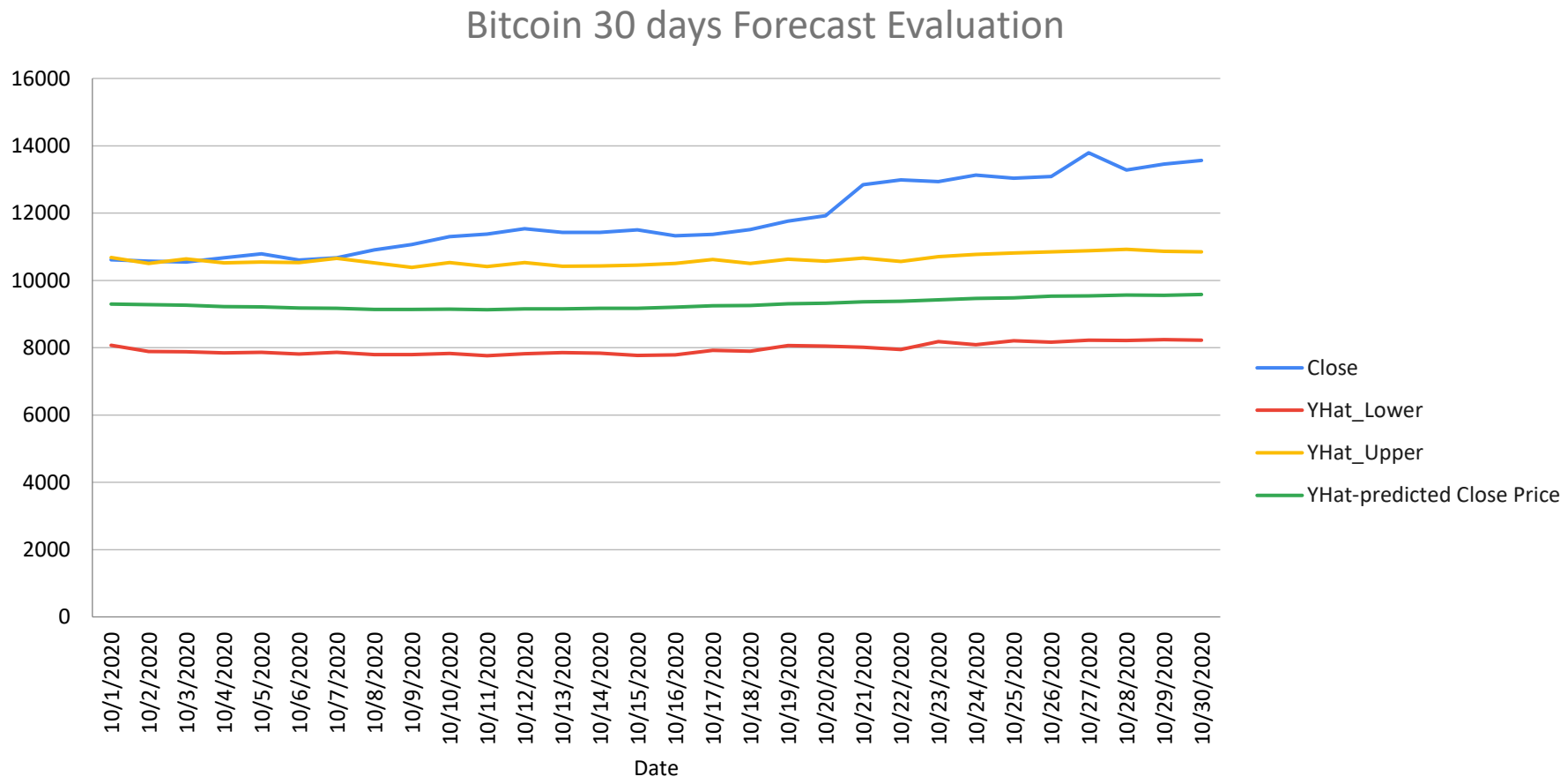

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