Team Name: Take A Byte Data Text, whiteboard

Description automatically generated

 Project Name: The Omniscient (Crypto) Oracle

### TABD Team Members

|  |  |  |
| --- | --- | --- |
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### Background

Crypto – What type of market, good time to invest, good time to sell – multiple types.

### Motivation

Trending question for a lot of people that have little knowledge of the market.

### Questions to answer

What type of market (Bull, Bear, Neutral)

good time to invest - Best days to buy

good time to sell – Best days to sell

For type of crypto selected and date, recommend if it is a good time to buy or sell.

% Risk to buy/sell particular Crypto on given day

### Tools/Modules to use

* Python
* Pandas
* long short-term memory (LSTM) - TensorFlow & Keras
* Normalization Method (Scikit-learn) [MinMaxScaler](https://scikit-learn.org/stable/modules/generated/sklearn.preprocessing.MinMaxScaler.html)
* gated recurrent unit (GRU)
* random forests (RF)
* stochastic gradient boosting machine (SGBM)

### Data sets to use

<https://www.investing.com/crypto/xrp/historical-data> Daily and monthly datasets

<https://www.investing.com/crypto/ethereum/historical-data> Daily and monthly datasets

<https://www.investing.com/crypto/bitcoin/historical-data> Daily and monthly datasets

### Resources

# Cryptocurrency Price Prediction Using Deep Learning - [has code examples](https://github.com/abhinavsagar/Cryptocurrency-Price-Prediction)

<https://towardsdatascience.com/cryptocurrency-price-prediction-using-deep-learning-70cfca50dd3a>

# Deep Learning Algorithm to Predict Cryptocurrency Fluctuation Prices: Increasing Investment Awareness [**https://www.mdpi.com/2079-9292/11/15/2349**](https://www.mdpi.com/2079-9292/11/15/2349)

# Cryptocurrency price prediction using LSTMs | TensorFlow for Hackers (Part III) [has code examples](https://colab.research.google.com/drive/1wWvtA5RC6-is6J8W86wzK52Knr3N1Xbm) - has good examples/define for TimeSeries properties

<https://towardsdatascience.com/cryptocurrency-price-prediction-using-lstms-tensorflow-for-hackers-part-iii-264fcdbccd3f>

<https://coinmarketcap.com/>

<https://min-api.cryptocompare.com/> = API Crypto compare data

**Criteria for whether the user should invest:**

1. **Is it a bull, bear, or neutral market?**

* **Bull Market Criteria:**

1. Has Bitcoin price increased by over 35% in the past 3 months, and 100% in the past 6 months

* **Bear Market Criteria:**

1. Enter criteria here

* **Neutral Market Criteria:**

1. Enter criteria here

**Future Enhancements**

 Coinmarketcap API to csv: <https://stevesie.com/apps/coinmarketcap-api>

### Tasks Breakdown

**Segment 1**

Tyler: Identify cryptos with 3 years history; Classification rules

David: Time series machine learning

Bobbi: Datasets and resources, ML clustering, tools to use

Aaron: Datasets and resources, postgres

### Tasks and timeline

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Date** | **Task** | **Notes** |
| **Seg-1.1** | **T 2/28/23** | Identify/Get approval for Project.  Assign Tasks | Complete |
| **Seg-1.2** | **W 3/1/23** | Complete Assigned tasks |  |
| **Seg-1.3** | **Th 3/2/23** | Review results from Tues Tasks  Assign next steps  Neural Networks Day-2 | Normal Class |
| **Seg-1.4** | **F 3/3/23** | Complete Assigned Tasks |  |
| **Seg-1.5** | **S 3/4/23** | Complete Assigned Tasks |  |
| **Seg-1.6** | **S 3/5/23** | Team Mtg  Review results  Assign Tasks |  |
| **Seg-2.1** | **M 3/6/23** | Complete Assigned Tasks | Group Roster and Project Idea Proposal Due |
| **Seg-2.2** | **T 3/7/23** | Class  Review results  Assign Tasks |  |
| **Seg-2.3** | **W 3/8/23** | Complete Assigned Tasks |  |
| **Seg-2.4** | **Th 3/9/23** | Class  Review results  Assign Tasks |  |
| **Seg-2.5** | **F 3/10/23** | Complete Assigned Tasks |  |
| **Seg-2.6** | **S 3/11/23** | Complete Assigned Tasks |  |
| **Seg-3.1** | **S 3/12/23** | Team Mtg  Review results  Assign Tasks |  |
| **Seg-3.2** | **M 3/13/23** | Complete Assigned Tasks |  |
| **Seg-3.3** | **T 3/14/23** | Class  Review results  Assign Tasks |  |
| **Seg-3.4** | **W 3/15/23** | Complete Assigned Tasks |  |
| **Seg-3.5** | **Th 3/16/23** | Class  Review results  Assign Tasks |  |
| **Seg-3.6** | **F 3/17/23** | Complete Assigned Tasks |  |
| **Seg-4.1** | **S 3/18/23** | Complete Assigned Tasks |  |
| **Seg-4.2** | **S 3/19/23** | Team Mtg  Review results  Assign Tasks |  |
| **Seg-4.3** | **M 3/20/23** | Complete Assigned Tasks |  |
| **Seg-4.4** | **T 3/21/23** | Class - Finalize Presentation  Practice Presentation |  |
| **Seg-4.5** | **W 3/22/23** |  |  |
| **Seg-4.6** | **Th 3/23/23** | PROJECT PRESENTATION | 4th Segment and  Self Assessment Due |
| **Seg-5.1** |  |  | All submissions Due |

### Presentation

Divide your presentation steps to tasks and assign it to members.

Dashboard -

* Show current market type
* Show best days of week to buy/sell
* Select crypto - display info on selected crypto (data blurb)
* Choose date
* Display Buy/Sell and Risk