Project Topic Idea: Crypto Market Behaviors

Of the project ideas you submitted in the previous deliverable, select the one you want to work on throughout this project. In making your decision, please refer to the feedback you have on the previous deliverable. If all ideas were found plausible, feel free to select the one that you liked the best **as a team**. You will be working on this project idea in the remainder of the semester.

Complete this section based on the previous deliverable. After deciding on your topic idea, simply copy and paste same information from the Topic Proposals document here.

- **Problem Statement**
  - Describe the problem you would like to tackle.

    We can take data about all real trades, order book snapshots, volume and price on different cryptocurrency exchange and market pair for any period of time and identify statistically relevant relationships between these different datasets to make a complex model.

  - What is the topic of your project?

    Determining the basic relationship between volume, price and types of trades being made amongst the different exchanges and different market pairs.

  - What do you want to learn about it?

    What significant patterns can be extrapolated from the data? What relationship do the variables have with each other?

- **Significance of the Problem**
  - Why is it important to tackle this problem in your project?

    For many years people have tried to understand the world and create a model which can explain everything. But for now it is impossible. And the center part of this problem is relationships between objects and forces which affect others. And financial markets (here cryptocurrency markets since their availability and ease of use) are the great opportunity for us as students to start to study this field. We can try, at least with some level of confidence and probability, to understand the market and users behavior and use it in future. To use this path we made in other fields. Or if we will do this really good we can at least earn some money if we use this research to make a trading model.

  - In what ways could the insights from this project be useful?

    Almost everything in our world is about analysis and more certainly about behavior and relationships analysis. As I already mentioned we can use our insights and steps we do in many other fields such as physics and etc.

- **Dataset(s)**
  - **When searching for potential datasets, you can refer to the Datasets folder on Blackboard to search potential dataset repositories. This has been available on Blackboard since Day 1 of this class.**
  - Describe where you obtained your data. Provide a link to the original source.

    https://www.cryptodatadownload.com/cdd/gemini_BTCUSD_2019_1min.csv

    https://www.cryptodatadownload.com/cdd/tradeprints/Gemini_BTCUSD_tradeprints_Q4_2019.csv

  - This should be the dataset(s) you are using and should correspond to the attached dataset.

Dataset File

Download or scrape your data from the source you identified above. Save your dataset as a CSV file. The first row of the file should contain variable names.

Describe your variables below (add more rows if necessary):

Variable name in file	Description	Feature/ Outcome
unix	Unique id for each trade	
TradeDate	The date and time of the trade	
symbol	The pair of cryptocurrencies being sold or bought (btc/usd)	
price	The price at which the btc was sold or bought	
amount	Amount of btc sold or bought	
type	Either sell of buy (type of trade)	
trans_id	Unique transaction id	
Unix Timestamp	Unique id for each trade	
Date	The date and time of the trade	
Symbol	The pair of cryptocurrencies being traded	
Open	The average price in a starting minute (1 s)	
High	The highest price in a minute	
Low	The lowest price in a minute	
Close	The average price in an ending minute (60 s)	
Volume	The total amount of cryptocurrencies transacted within the minute in btc	
In the Feature/Outcome column, indicate whether the variable is a feature or outcome variable. You need to have at least one outcome variable, with several feature variables.		

Based on what we discussed regarding machine learning (Week 03 Day 4), does your dataset include a set of feature variables and one outcome variable that you can use for a supervised machine learning task? Please explain.

No, we were unable to determine an outcome variable, such as return or gains, because we are not trading these crypto markets, we are simply looking at their order book snapshots and determining how volume and price affect each other in different exchanges and markets.

What to submit

Submit a CSV file, or multiple files, containing your data. If the dataset is too large, you can upload it to Github or any other online repository.

If you have scraped your data, you should also submit a Jupyter Notebook containing your Python code used to scrape the data. Please be reasonable and comment your code out whenever it makes sense to do so.