Base Paper

Stock Price Pattern Prediction Based on Complex Networks and Machine Learning

Theory to remember

* Returns – N-day returns (N refers to consecutive days for which the stock market was open)
* Volatility – Definition, formula
* Centrality Measures – Average strength, average degree, average betweenness measure, average closeness measure.
* KNN – Theory of KNN algorithm

Common Questions

* What is the motivation behind your idea?
  + The base paper that we used considered the stock indices of USA and predicted similar stock patterns. Our motivation for this research is to leverage the same idea for the Indian Stock Market and
* Did you continue with your previous research? If not, why?
  + The idea is the same but we have changed our approach.
  + Previously, we were working with Knowledge Graphs but we did not reach state of art for our idea.
* Why did you work with these 3 indices only?
  + SENSEX and NIFTY50 are the most popular stock indices of our country.
  + We considered NIFTY Consumption because it considers a vast variety of non-essential expenses for the economy and is more diversified than other indices of similar type such as NIFTY FMCG etc.
  + The base paper that we used also considered 3 stock indices (S&P500, DJIA and NASDAQ).
  + Although, in the future we plan to incorporate more stock indices of India.
* How did you get the dataset?
  + We got the data for SENSEX and NIFTY50 for the past 10 years from MarketWatch and NIFTY Consumption dataset from Yahoo Finance.
* Why did you consider these centrality measures?
  + Although we will cover more measures in the future, we have considered 2 of them right now. One is the average strength of the network which denotes that how dense is a particular network. If we talk in terms of data, it shows how diverse the patterns are in a single window.
  + The average degree of network shows how much patterns are repeated in one window.
  + Other centrality measures such as betweenness measure and closeness measure are yet to be considered.
* Why did you use KNN?
  + The base paper we considered SVM model as its prime model but it did not compare with other models. We wanted to consider other classification models which can solve the same purpose and experiment with all of them to find out which one is the best. (This is a lie, it did consider KNN and SVM)