MDS6212 Fintech Theory and Practice

Assignment for Week seven

Questions 1:

In this question, you are expected to conduct some simple analysis on the price dynamics of Bitcoin and Ethereum. Coinmarketcap (https://coinmarketcap.com/) is a famous crypto-currency platform, which keeps track on price data on almost all listed crypto-currencies.

1. Please collect the historical price data for Bitcoin and Ethereum from Coinmarketcap and plot the price time-series for both coins. [You may manually download the data from the website or directly call their official APIs, the documentation for which can be found at <https://coinmarketcap.com/api/documentation/v1/>]
2. Calculate the correlation between Bitcoin price series and Ethereum price series. Summarize your findings.
3. Fit two price series with classical ARMA models. Report your regression results.

Questions 2:

Now let’s evaluate the quality of ICO white papers, which plays a crucial role in the financing process. Two pieces of ICO white papers are provided here, with one from a success (*Filecoin*) and the other from a failure (*Arqute*). You are expected to analyse both documents.

1. Please carefully read through two white papers and summarize the main differences in between.
2. Please apply textual analysis techniques (recall what we have learnt in Week 4) to derive two quantitative variables that can differentiate these two papers in view of **readability** and **informativeness**. [Note that two papers are given in the format of pdf. You may want to convert them into plaint texts with OCR in the first place.]

Deadline: Nov. 22, 2020