**Project 1: Constructing Big data Alpha Model**

Due: Week 7 (02/27, 11:59 PM).

Group assignment with 4-5 members (preferably each group has at least one member good at R programming and one knowledgeable on financial trading).

**Description**

The project is designed to integrate what you learned in class to construct a big data alpha model. You will identify a portfolio of stocks (of your own interest); retrieve various data that you think will help you predict the future price of these stocks; process the big data and construct factors accordingly; implement the big data alpha model (follow the R sample codes discussed in class) using R; examine and report its performance.

**What to do**

Specifically, your project should at least consist of these steps:

1. Choose a portfolio of securities
   * Can be stocks, cryptocurrencies (tiker:^XBTS, BTC-USD, ETH-USD etc.), commodities or ETF. You decide on the portfolio size, minimum two
2. For every stock, retrieve at least a couple of years’ data
   * retrieve the fundamental data you deem relevant
     + e.g., Financial statement data (quarterly at least), macroeconomics data (monthly or quarterly)
   * retrieval the daily trading data
     + Extract the technical analysis indicators
   * Retrieve data from social media (e.g. twitter or reddit or other social media sources)
     + Analyze the data to calculate media attention level, sentiment etc.
     + Hopefully every team can think of at least one thing innovative in big data analytics, e.g. wallstreetbets factor, create TA for sentiments, geographic location analytics and follower-followee social network etc.

3. Identify good factors from the data

* + Evaluate which factors predict the next period (e.g. week, month, year) return best

1. Execute the big data alpha model and report the performance

* (optional) you are encouraged to implement and track the performance at the MEXC account.

**Deliverables**

* Write a concise word report (no more than 10 pages) that document what you have done , submit your code separately
* Submit to elearning’s digital dropbox, only **one** submission is needed per group, but make sure all your groups members’ names are on it.
* I will choose the best group to record a video on what they do