Theme: Algorithm to win in the stock market

1. Approach:

This project aims at building a model that will ideally always output successful bids in the stock market. For that, it builds a model which gives better results when constantly trained in a sliding-time window. Of course, the model advises buying when the prices are low and selling when they are going up.

The model for this project will use 2 historical datasets from the power domain to build and test the bidding algorithm. Those data sets end of day stock prices, dividends and splits for 2 companies in the power production domain. The bidding algorithm will mainly use 6 fields: date, volume, open, low, high and close.

1. Data
2. Dataset 1: American Electric Company

<https://www.quandl.com/data/WIKI/AEP-American-Electric-Power-Company-AEP-Prices-Dividends-Splits-and-Trading-Volume>

1. Dataset 2: Chesapeake Energy Corporation

<https://www.quandl.com/data/WIKI/CHK-Chesapeake-Energy-Corp-CHK-Prices-Dividends-Splits-and-Trading-Volume>

1. Algorithms

For this project, I will implement and compare 2 financial trading strategies:

* Moving average/trend
* Oscillation/reversion.

Modern algorithms already implemented (just to know):

High frequency trading approach: <http://www.investopedia.com/ask/answers/09/high-frequency-trading.asp>

High speed-speed quantitative trading approach: <https://en.wikipedia.org/wiki/David_E._Shaw>

1. Additional resources

<https://en.wikipedia.org/wiki/Mathematical_finance>

<http://www.investopedia.com/ask/answers/09/high-frequency-trading.asp>

<https://www.r-bloggers.com/r-and-finance/>

<https://en.wikipedia.org/wiki/David_E._Shaw>

<https://www.quora.com/Is-there-going-to-be-a-stock-market-crash-soon/answer/Mile-Navrsale>

<https://www.scientificamerican.com/article/multifractals-explain-wall-street/>

<https://www.amazon.com/Black-Swan-Improbable-Robustness-Fragility/dp/081297381X>

<https://en.wikipedia.org/wiki/D._E._Shaw_%26_Co>.

<https://cran.r-project.org/web/views/Finance.html>

<https://cran.r-project.org/web/packages/quantmod/index.html>

The quantmod package for R is designed to assist the quantitative trader in the development, testing,

and deployment of statistically based trading models

<https://cran.r-project.org/web/packages/restimizeapi/index.html>

https://cran.r-project.org/web/packages/data.table/index.html

<https://en.wikipedia.org/wiki/Crowdsourcing>