

## RNN LAB WORK

### USING LSTM TO PREDICT THE STOCK-PRICE OF GOOGLE

The goal of this lab is to predict the stock-price of Google shares.

According to the Browning Motion (Financial Engineering term): *In reality the future variations of the stock-price are independent from the past.*

Therefore, we will predict the trends not exact prices. This is possible to achieve using LSTM which will catch up the up and down trends. LSTM performs better than traditional RNNs in these kind of tasks.

We will:

- Implement high-dimensional stacked LSTM. Which means that there will be several layers stacked.
- We will add the dropout regularization to avoid overfitting
- We will use the powerful optimizer from the keras library

We will train our model on the dataset of 5 years google stock-price (beginning 2012 – end 2016). Then based on the correlations which our model will catch up during the training we will try to predict the trends of the first month of 2017.