Project Definition

Title: FT100 predictive deep learning stock trading model

Abstract

The project goal is to create a predictive model capable of identifying trading opportunities. The model will use historical daily price data for each stock within the FT100 index. This index is made up of the largest 100 public companies on the London Stock Exchange in the UK.

The model will have a web based front end and provide an automated method to update a local price database. The interface and local database will provide a workflow process enabling the user to select and modify various input & model parameters, then provide a robust back test method to evaluate and visualise the predictive performance.

A significant part of the workflow process will involve careful selection and creation of data features. If the model performance is good the interface could be extended to provide a realtime trading dashboard.

Steps & Plan

Step ID	Step	Time Allocation
1	Problem Definition, Data acquisition & pre-processing	WK40 - WK 42
1.1	-Identify source and retrieve price history data	
1.2	-Explore data and check/clean	
1.3	-Put data in db	
1.4	-Initial look into Flask - make simple interface	
1.5	-Make update method for db & interface	
2	Exploratory Data Analysis (EDA) & Feature Engineering	WK42 - WK45
2.1	- Identify and code selected indicators	
2.2	- Develop new indicators as needed	
2.3	- Develop method to generate features into correct format	
2.4	- Develop workflow to enable selection of features	
3	Model Architecture Design, Training, Tuning	WK45 - WK48
3.1	- Try out different deep learning models, LSTM, RNN?	
3.2	- develop back testing method	

Step ID	Step	Time Allocation
3.3	- develop visualisation and incorporation in to UI	
3.4	- develop workflow in web interface	
4	Model Evaluation and deployment	WK49-51
4.1	- get process flow working the web UI	
4.2	- finish any outstanding documentation	
5	Report Submission, Presentation	17,18 Dec