

Artificial Intelligence For Financial Market Trading

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MSc in Big Data



Background & Foundation

Intention:

Combining different types of investment and trading styles to gain the highest potential value from data.

Boosting Performance via Specialization

Data:

- Financial Time Series Data
- Macroeconomic Time Series Data
- Insider-Transactions

Trend Prediction

Time-Series Modeling:

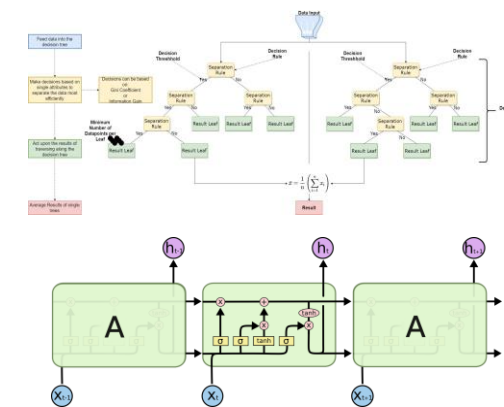
Trend prediction is conducted to allow the creation of optimal trading strategies for different market environments

Non-Parametric:

Random-Forest

Parametric:

LSTM



Strategy Optimization

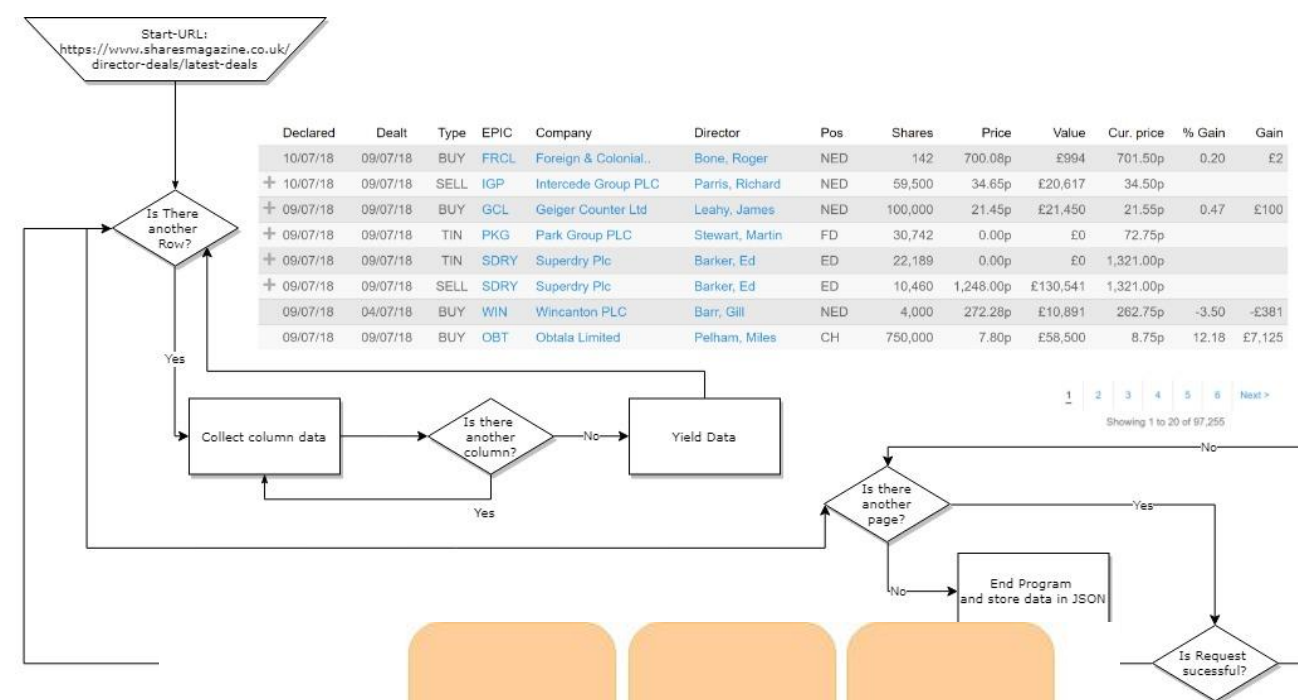
Algorithm:

Evolutionary algorithms are used to find the optimal strategy to trade in the given market environment by choosing the weights for different indicators.

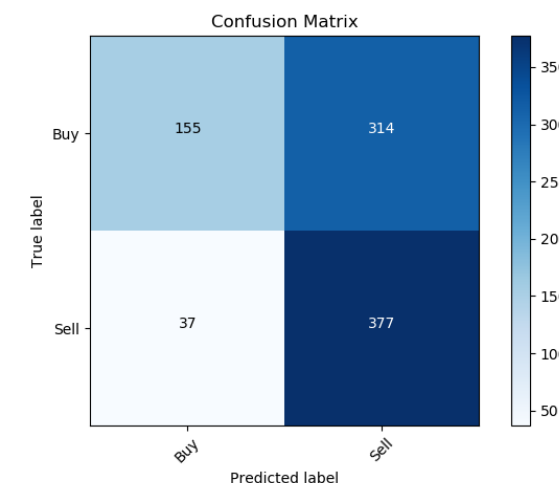
Do Insider-Transactions add value?

Multiobjective-Selection:

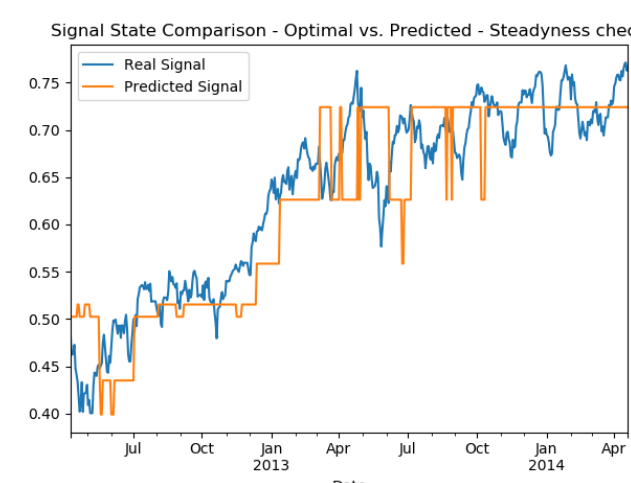
1. Profitability of the strategy
2. Tail Risks – Maximum Drawdown



Classification:



Regression:



Samples / Sequences	Features & Attributes
...	...
Timesteps	[[1.03071243, 0.16234723, 0.09751458],
	[1.0243672, 0.16631757, 0.10490852],
	[1.01826143, 0.17508044, 0.11156094],
	[1.0126695, 0.20072773, 0.11734268],
	[1.00854501, 0.1821568, 0.12088554],
	[1.00340815, 0.17934337, 0.12929283],

