

STOCK ADVISOR

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SW STACK

Project Definition

- Standard & Poor 500 Financial Analysis
- S&P 500 (Standard and Poor's 500) is a free-float, capitalization-weighted index of the top 500 publicly listed stocks in the US (top 500 by market cap).
- Time Series Analysis



Goals

- Extract meaningful insights from data
- Forecasting future S&P 500 Companies' Stocks Indexes
- Extract useful features for a further analysis through Machine Learning Algorithms



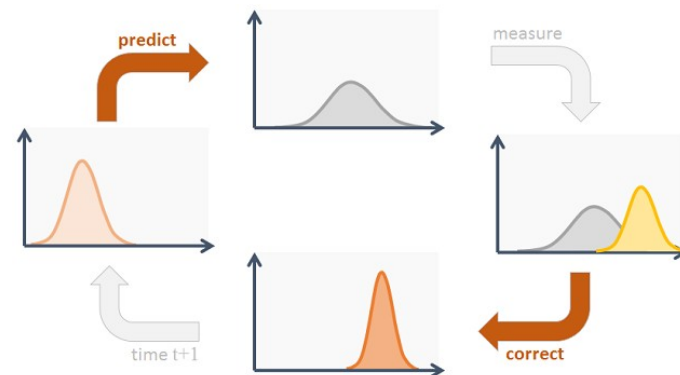
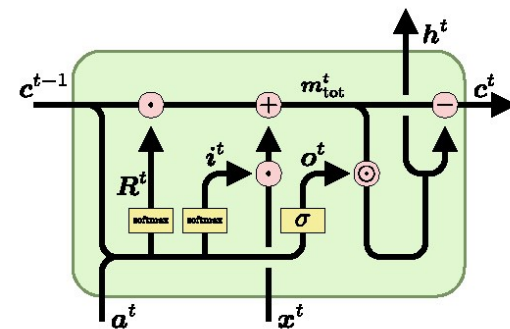
Dataset

- Multi-variate Time Series Dataset
- 1,769 data points
- Built in 2018 from *Data Hub*
- *Data Points range from 1871 up to 2018*



Algorithms

- *SARIMA*
- *Holt-Winters*
- *Facebook Prophet (2017)*
- *LSTM*
- *Kalman Filtering*



Stack Software

Service	Component
LANGUAGE	<u>Python</u>
ENVIROMENT	<u>Jupyter Notebook</u>
DATASET	<u>Pandas</u>
STATS	<u>SciPy</u> <u>StatsModels</u> <u>FilterPy</u>
GRAH	<u>Matplolib</u>
MATRIX ALGEBRA	<u>NumPy</u> <u>PyTorch</u>



FINE

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- Algorithms
- Software Stack