



A complex financial chart background featuring candlestick price data, a green moving average line, a blue moving average line, and a volume bar chart at the bottom. The chart is set against a dark blue grid with a pattern of small blue dots. The title 'Machine Learning For Day Trading' is centered in white text.

Machine Learning For Day Trading

*by
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Problem Statement

Develop algorithm that would predict stock movement for day trading



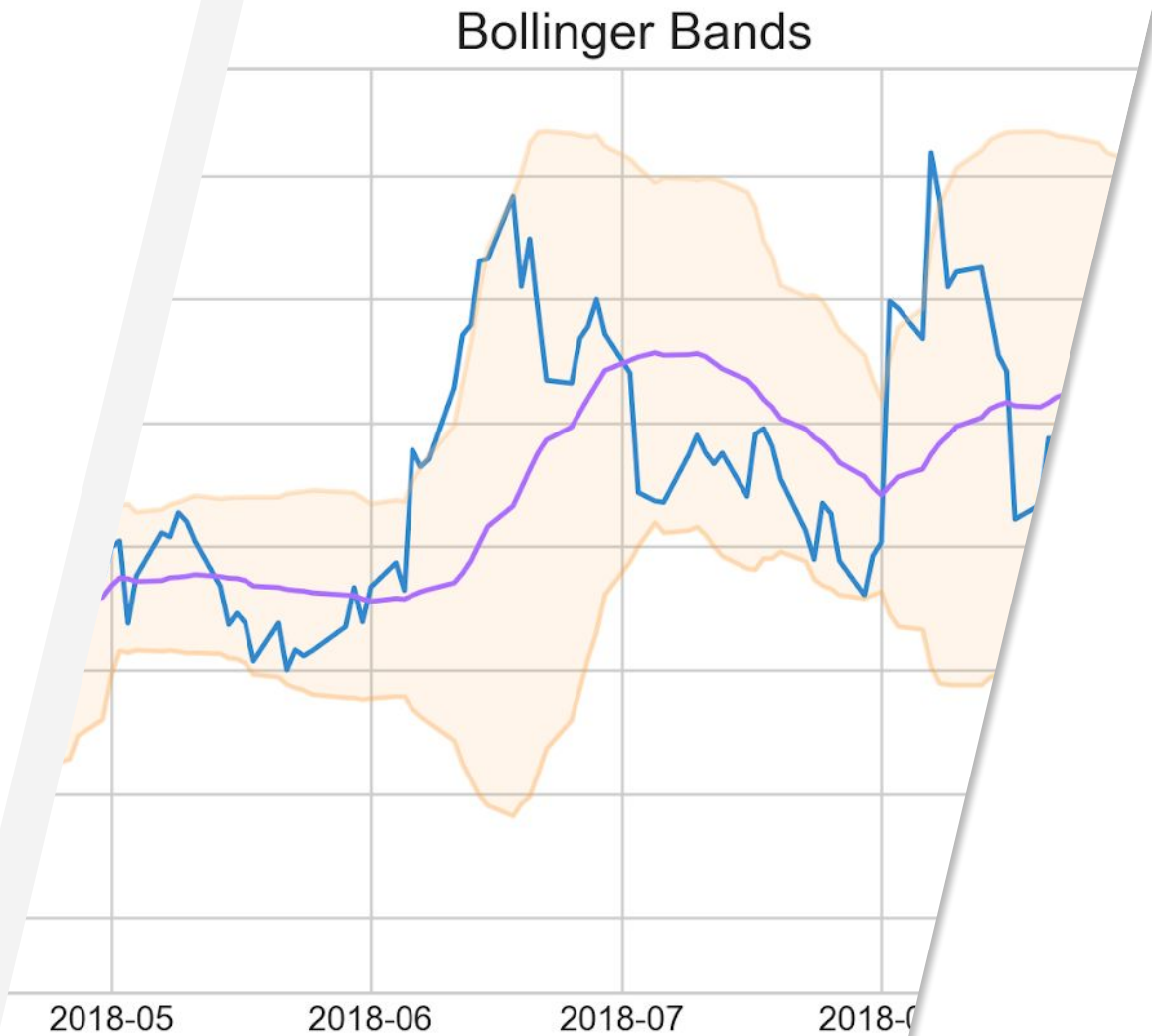
Business Value

Increase chances of positive
returns of **day trading**



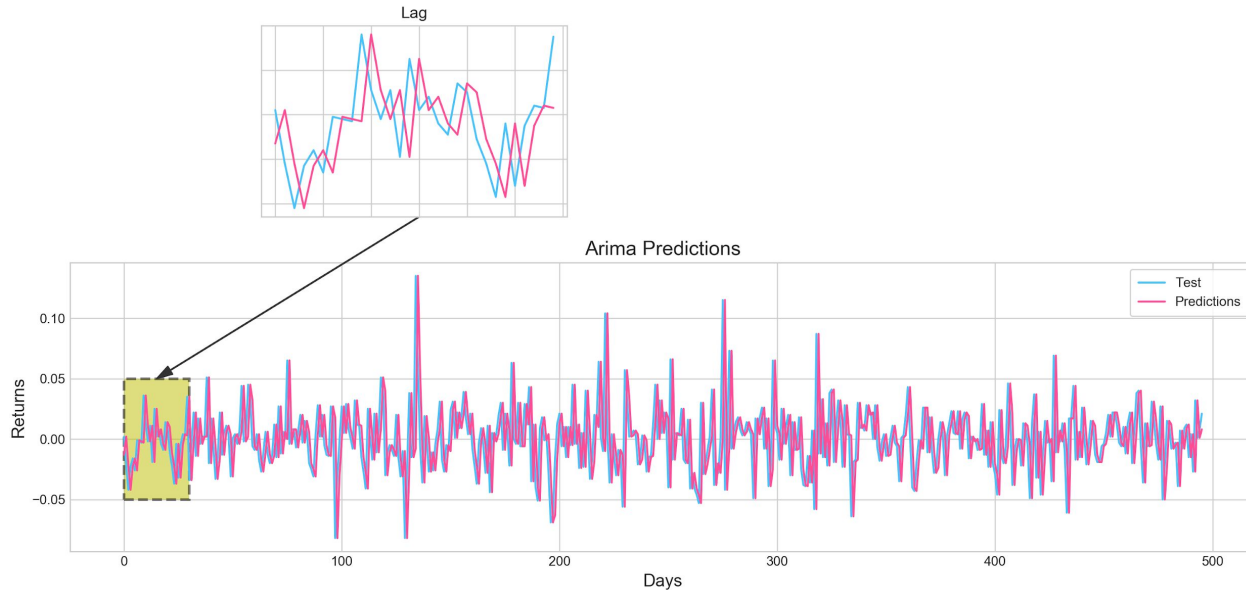
Methodology

- Exploratory Data Analysis
- Time Series Analysis
- Machine Learning
- Q-Learning



ARIMA

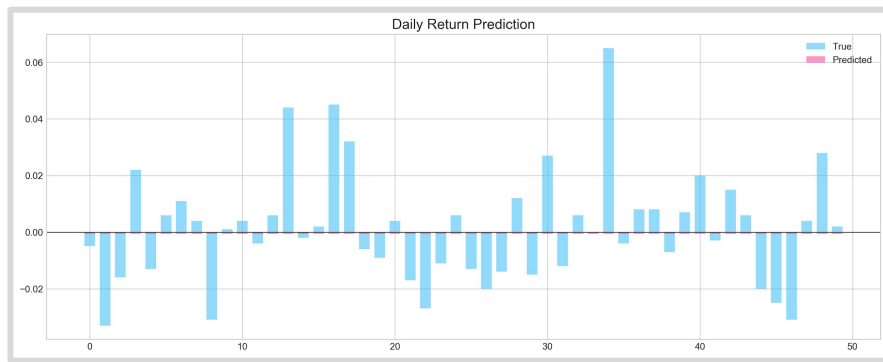
Autocorrelation function revealed that there is not significant correlation between data points, making the algorithm not suitable for this kind of time-series data.



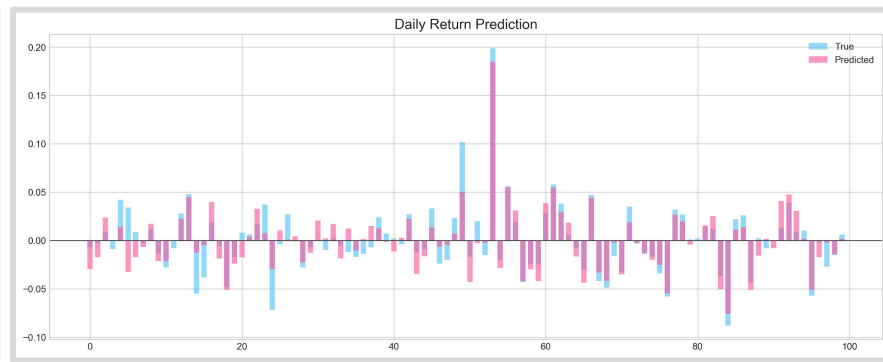
Convolutional Neural Network

- Convolutional network is prone to overfitting
- Evaluation shows no significant improvement from baseline model
- Bayesian Optimization doesn't improve model accuracy

Evaluation on **Test** Data



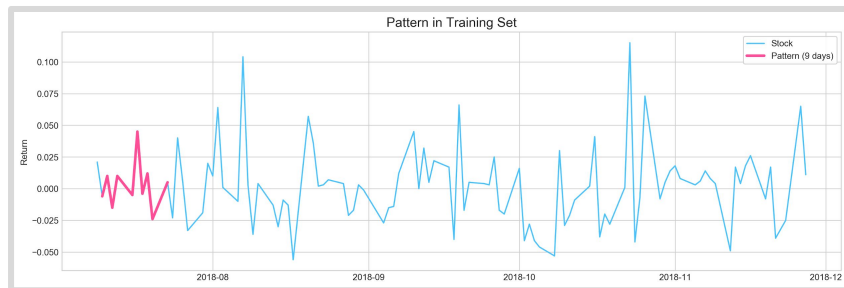
Evaluation on **Train** Data



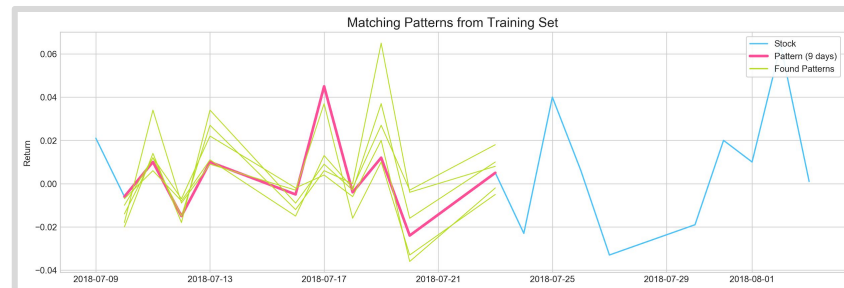
Pattern Recognition

- Frequently patterns repeat itself throughout the dataset
- Algorithm searching for similar patterns in train data to predict patterns in test data
- This approach didn't surpass baseline model accuracy

Patterns from test data



Patterns from train data



Q-Learning

Simple trading strategy based on technical indicators, such as Bollinger Bands and MACD can work as an alternative to day trading technique.



Future Work



Twitter Data



Fundamental Analysis