NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

School of Computer Science and Engineering
College of Engineering

Stock Prediction on TSLA

using Sentiment Analysis on StockTwits

Student: Looi Han Liong Supervisor: A/P Yeo Chai Kiat

Project Objectives:

The aim of this project iwas to determine the usefulness of the social media's sentiments on the stock in predicting the stock's next-day closinge price. This is done by comparing the performance of a neural network model trained on the stock's historical data only against the performance of another neural network model that was trained on the stock's historical data and the social media's sentiment on the stock. The analysis of the usefulness of the social media's sentiments on the stock will help future stock prediction researchers to develop a more accurate stock prediction model, as well as allowing stock prediction models to predict on stocks with littlelesser historical data (e.g. companies that only had their initial public offerings recently).

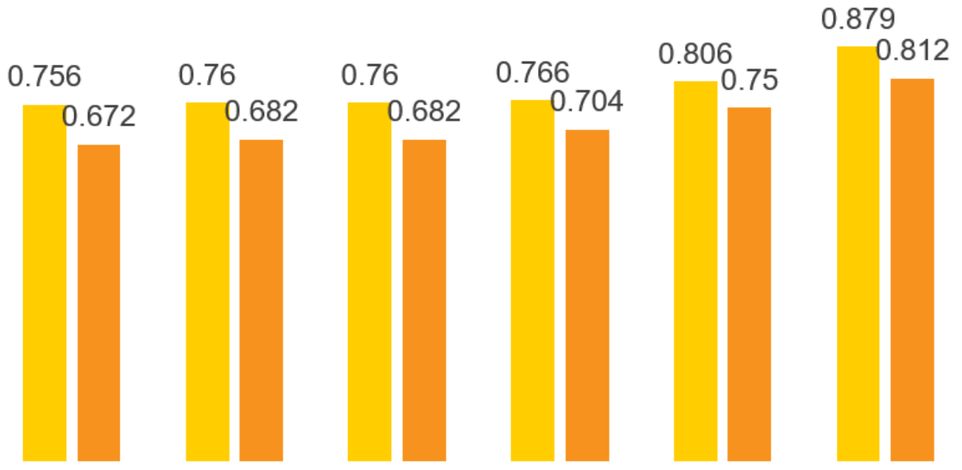
Results

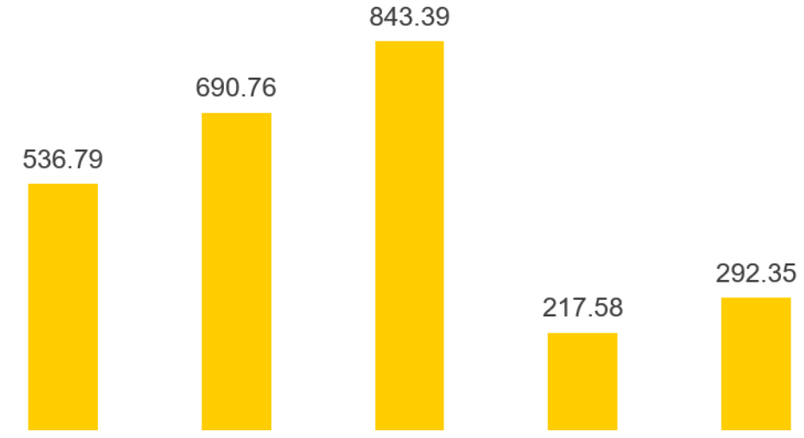
Sentiment Analysis:

Achieved classification accuracy of 87.9% and F1 score of 0.812

Stock Prediction:

With inclusion of sentiment feature, improved RMSE of stock prediction from 536.79 to 217.58





Future Works

Train prediction model on additional technical features derived from basic features, e.g difference, volume change, amplitude, etc.

Gather additional sentiment features from stocks/crypto related to TSLA.