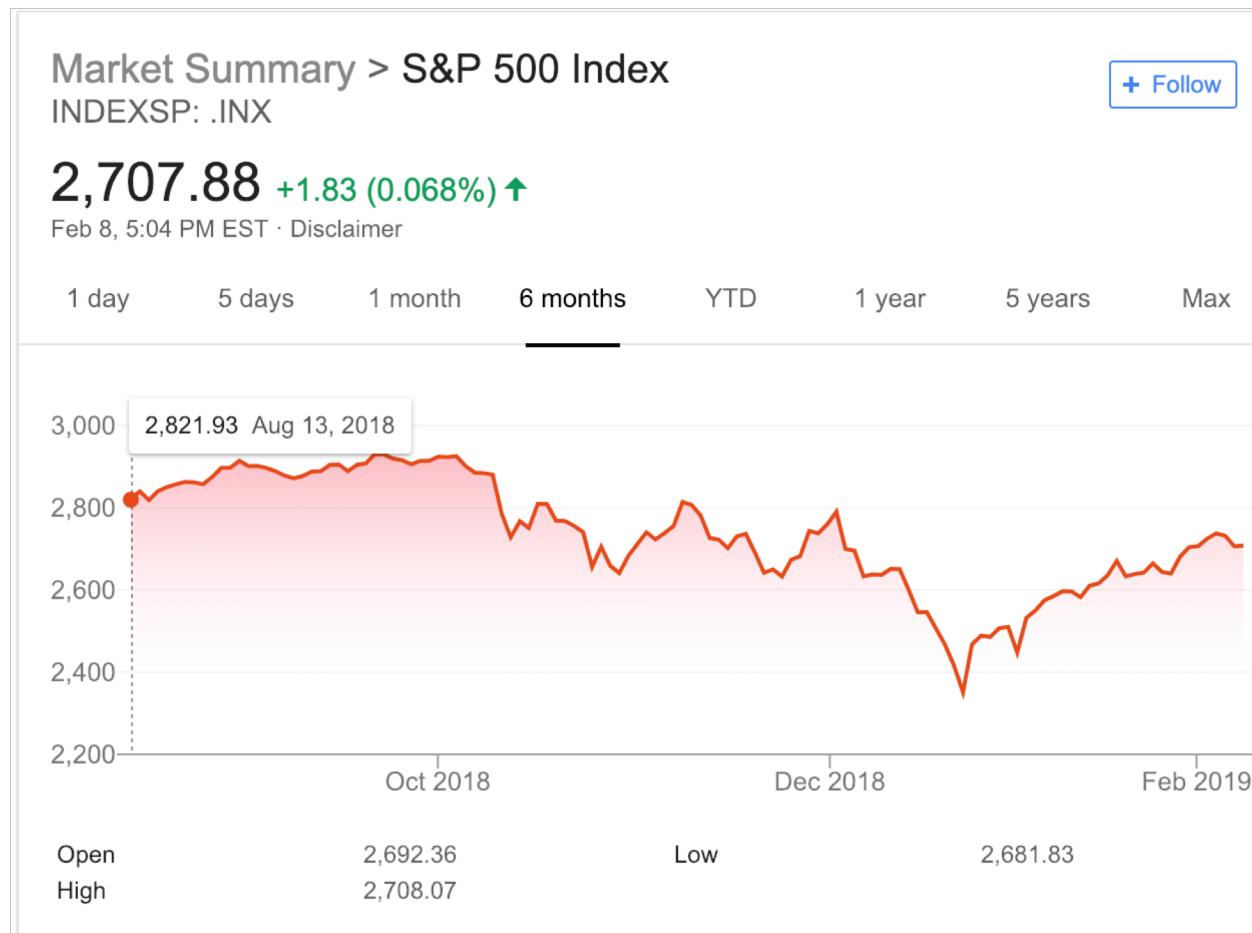


Relating Twitter Sentiment and Stock Prices

Nitish Goyal

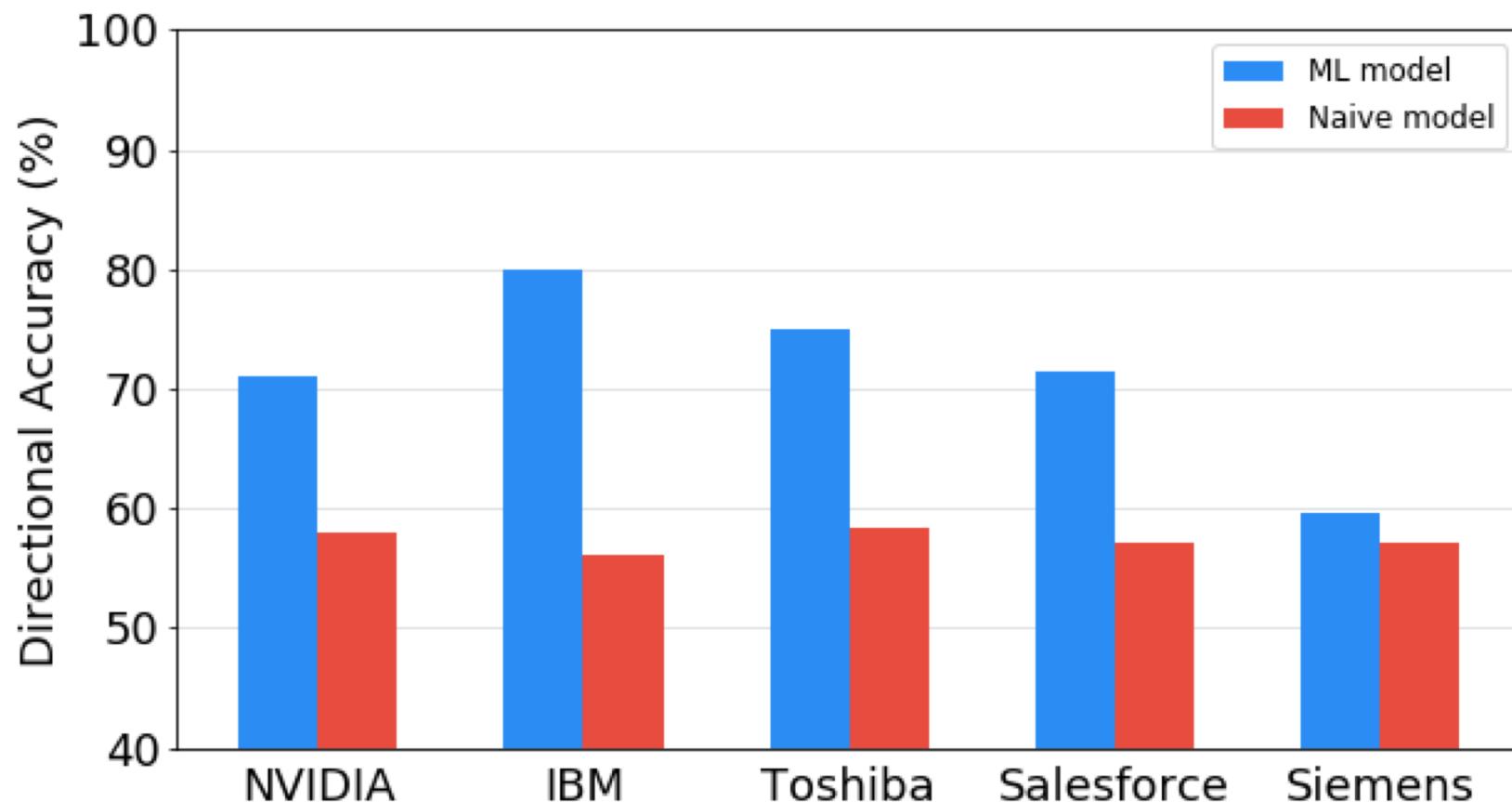
Can you make money on stocks by using Twitter?



Tweets with mention of company name

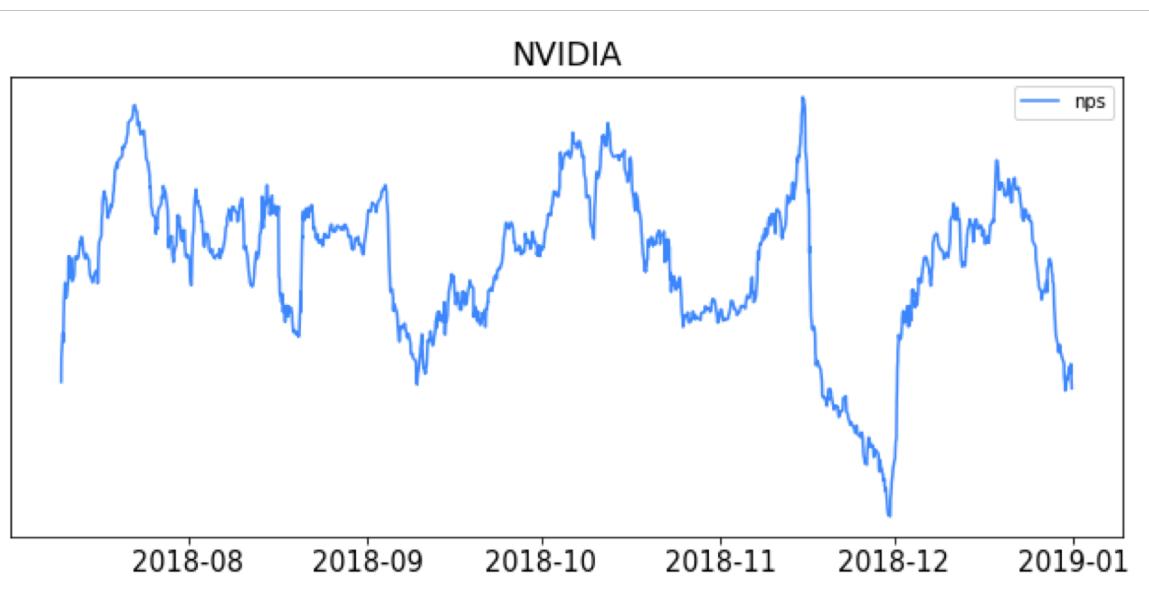
-  **Katarina Wagnerova @_KatkaW_ · Feb 5**
Removing the recertification requirement is the best thing you've done @VMwareEducation, thank you! 🙌 #VCP
-  **Narotham K Maudghal @narotak · 10h**
Love is energy>>Energy is the capacity to do work>> Work>>Working at IBM..loving!!
-  **My Printing Room @MyPrintingRoom · Feb 8**
Very informative day at our **Toshiba** showroom in London for extensive training on our new products & services. Contact us for details **#toshiba #MFD #copier #printing #fridaymotivation**
-  **Facts and News @Factsandnewscom · 4h**
Wall Street analysts slash **Nvidia** price target, say recent guidance cut is 'a splash of cold water' (NDVA) factsand.news/2019/02/11/fin...
-  **Ashraf Hamasa @AshrafHamasa · 48m**
Today is International Day of Women & Girls in Science. Women have played a key role at **Siemens** since it's early days. A big shout out goes to all **#WomenInScience** out there, & a special one to the female engineers who are currently operating our **#EgyptMegaProject** power plants.

Next day price can be predicted with 60-80% directional accuracy

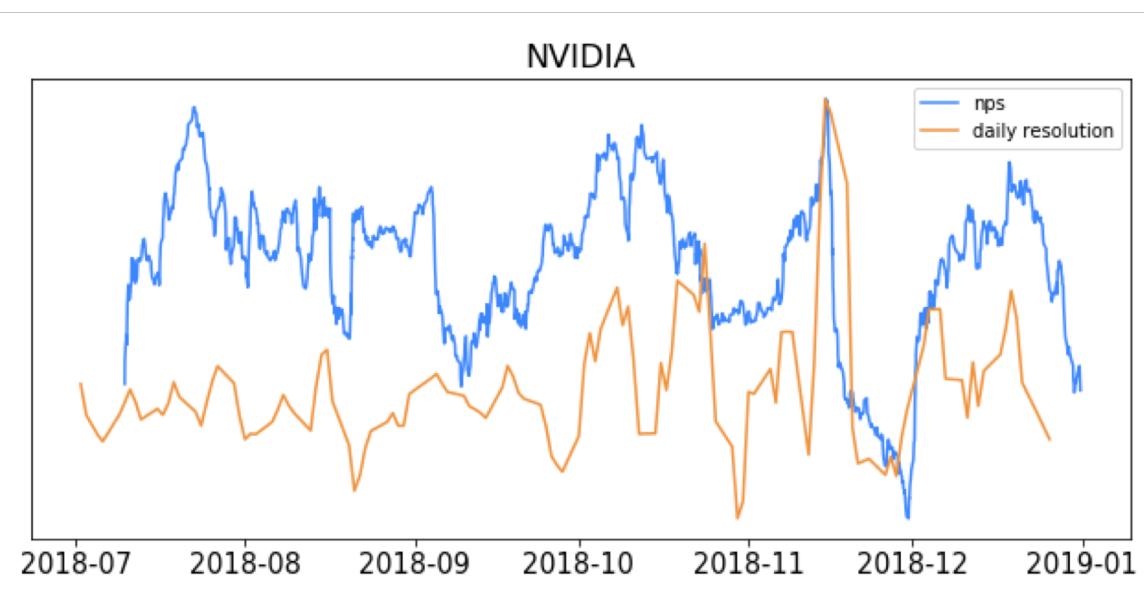
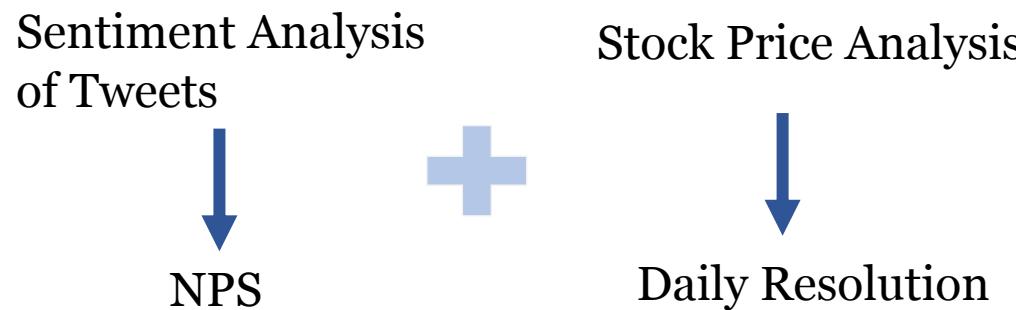


Predicting next day price requires sentiment analysis and time series analysis

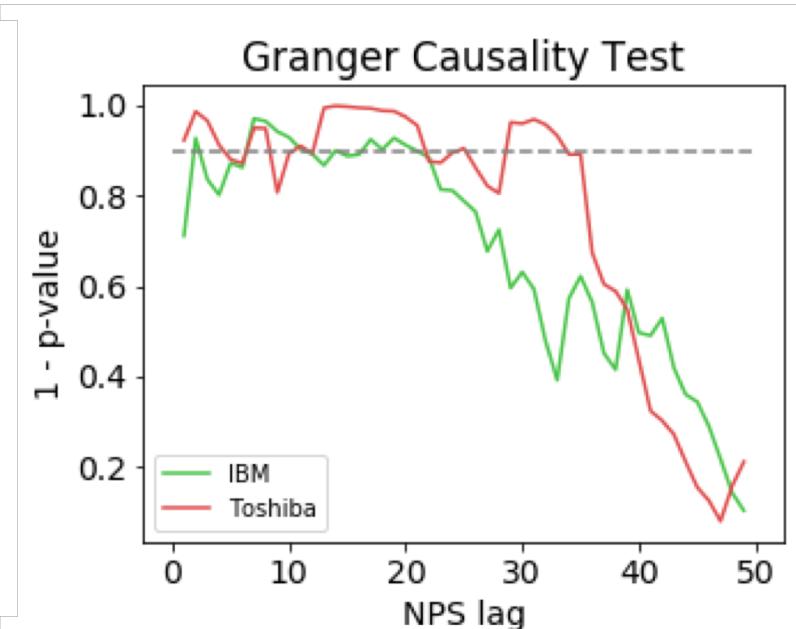
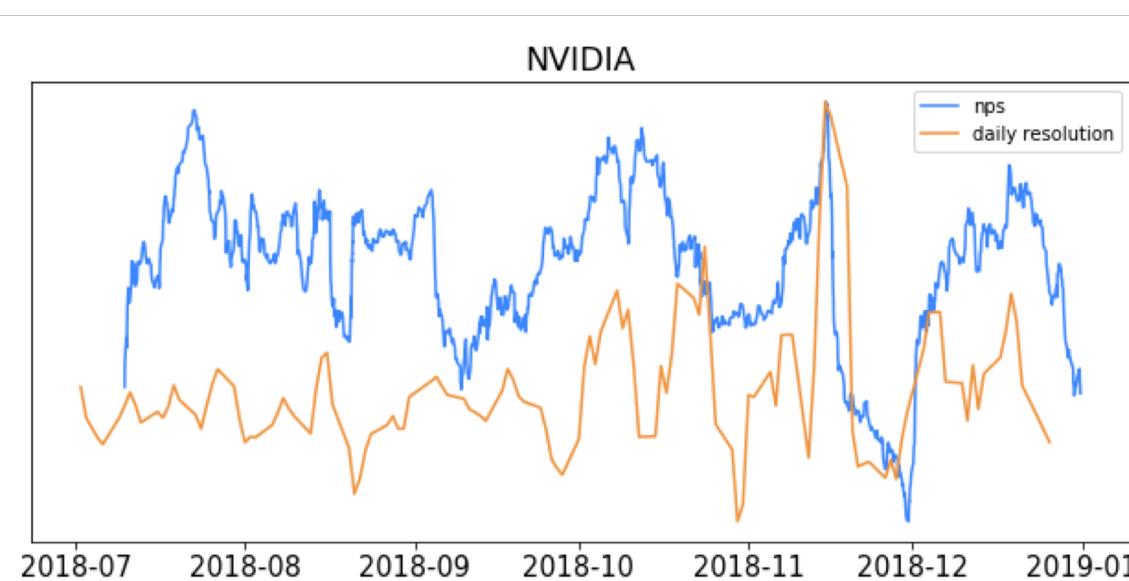
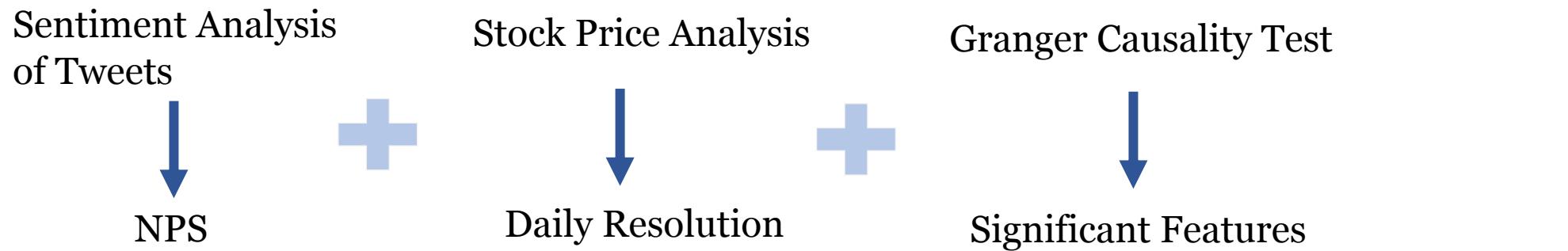
Sentiment Analysis
of Tweets



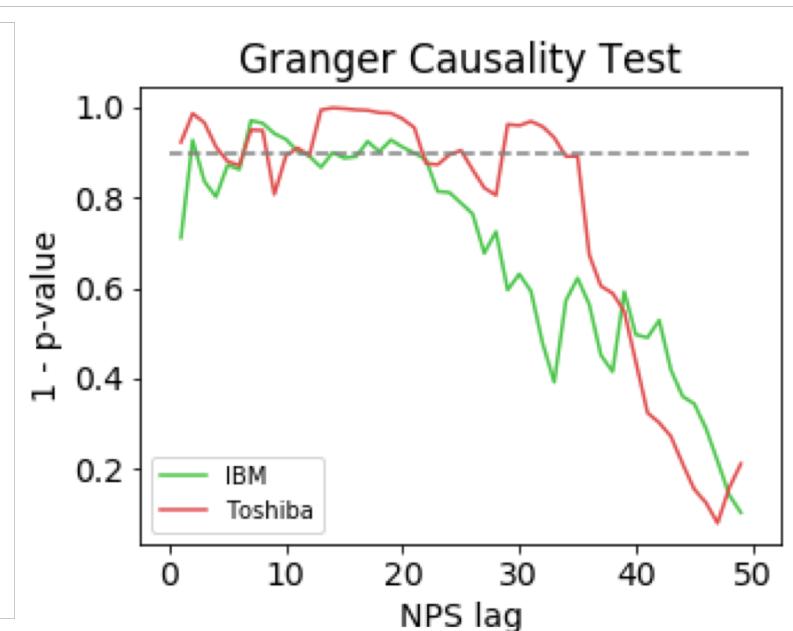
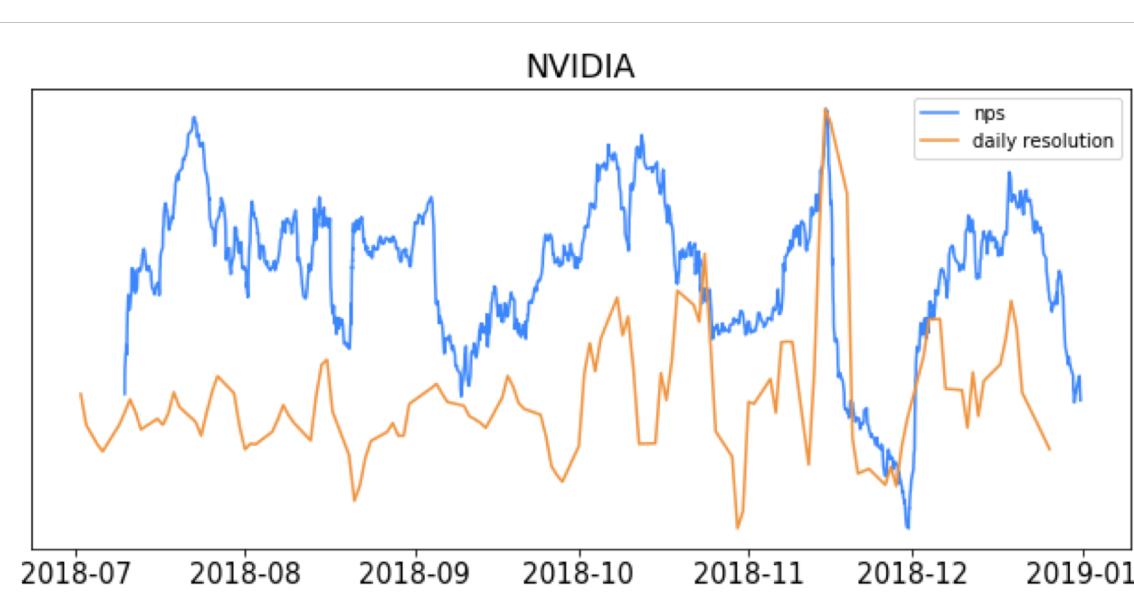
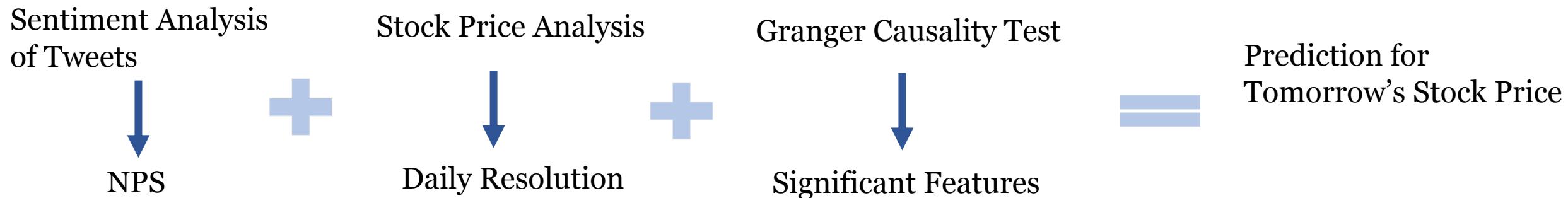
Predicting next day price requires sentiment analysis and time series analysis



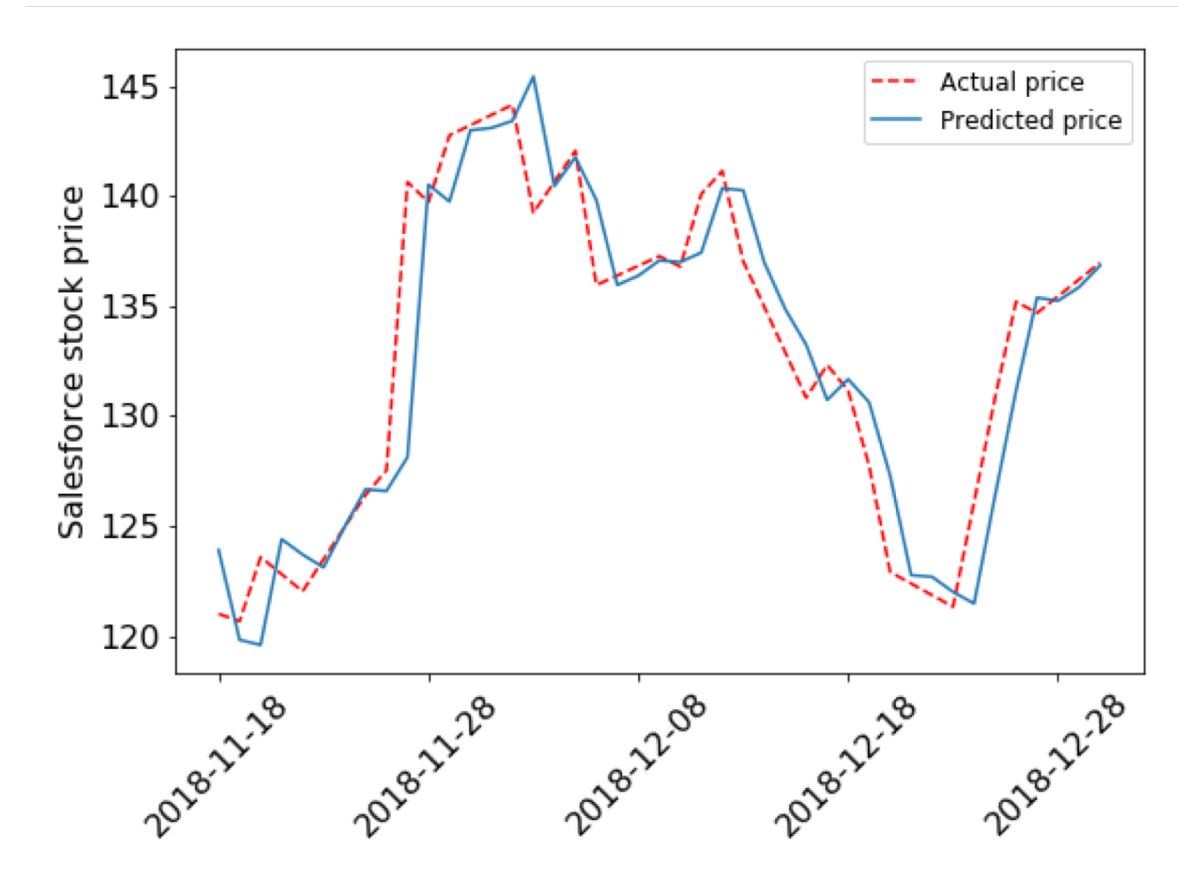
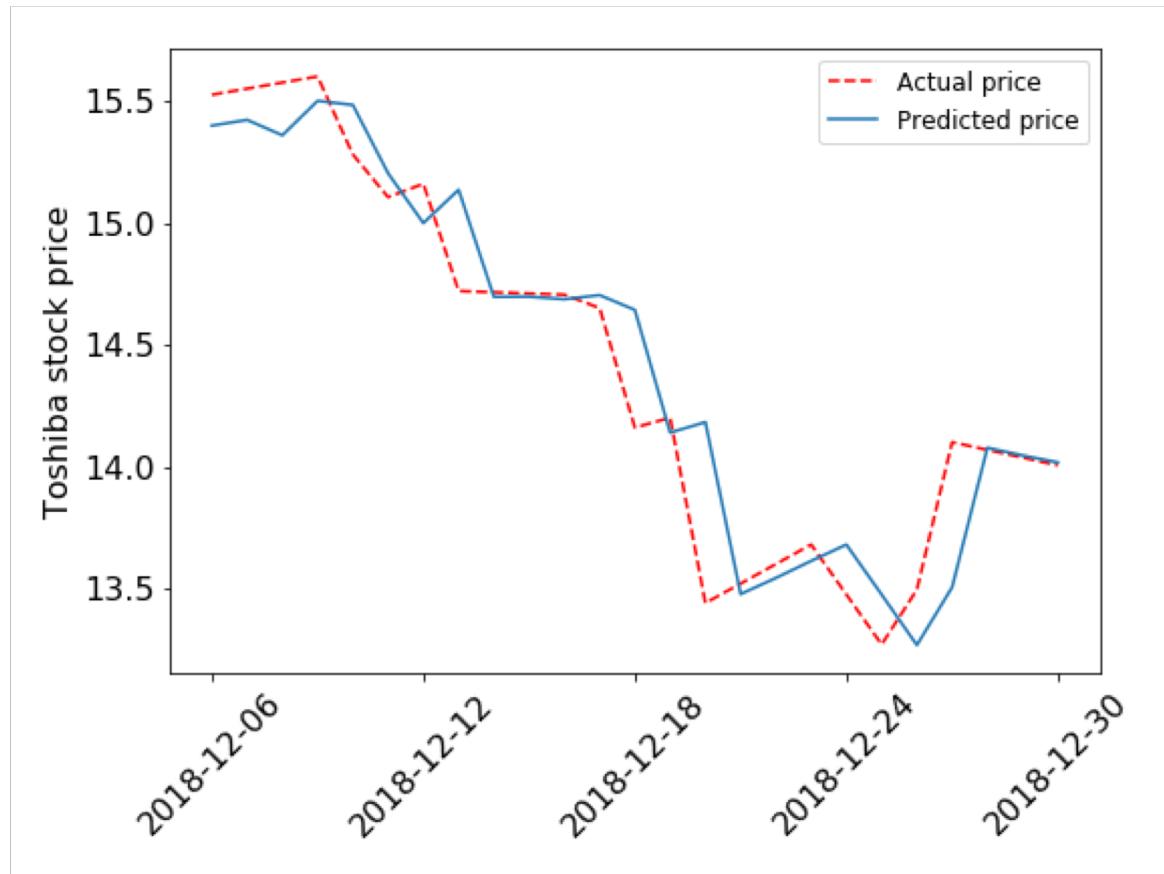
Predicting next day price requires sentiment analysis and time series analysis



Predicting next day price requires sentiment analysis and time series analysis



Some examples - Toshiba, Salesforce



Next Steps

- Extend the model to real-time predictions
- Incorporate my findings into conventional stock price prediction techniques
- Develop a customer facing web-app

About me

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215-605-2210



Thank you!

Technologies and Techniques used

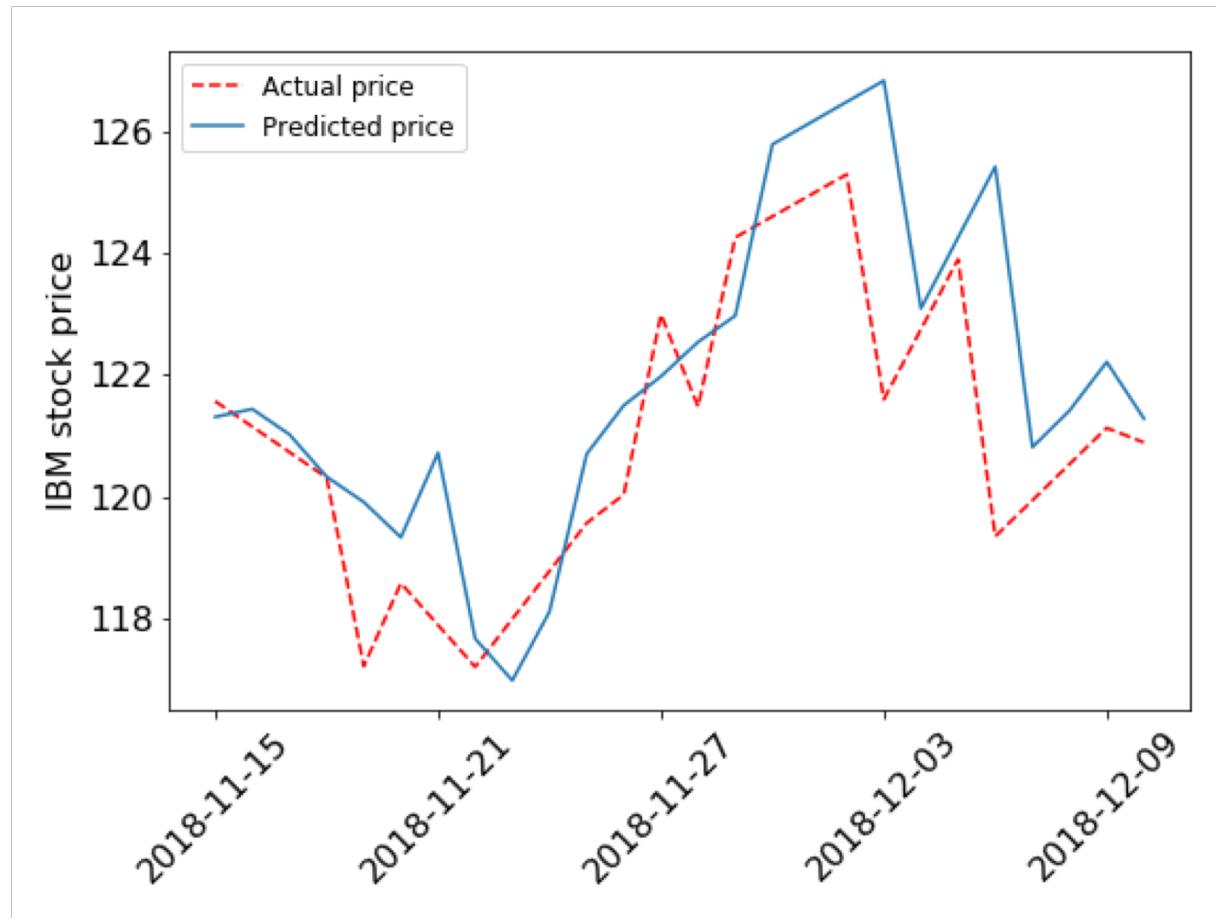
Techniques

- Sentiment Analysis
- Granger Causality test
- Time series cross-validation
(forward chaining)
- Regression models
 - Random Forests
 - Decision Trees
 - Support Vector Regression

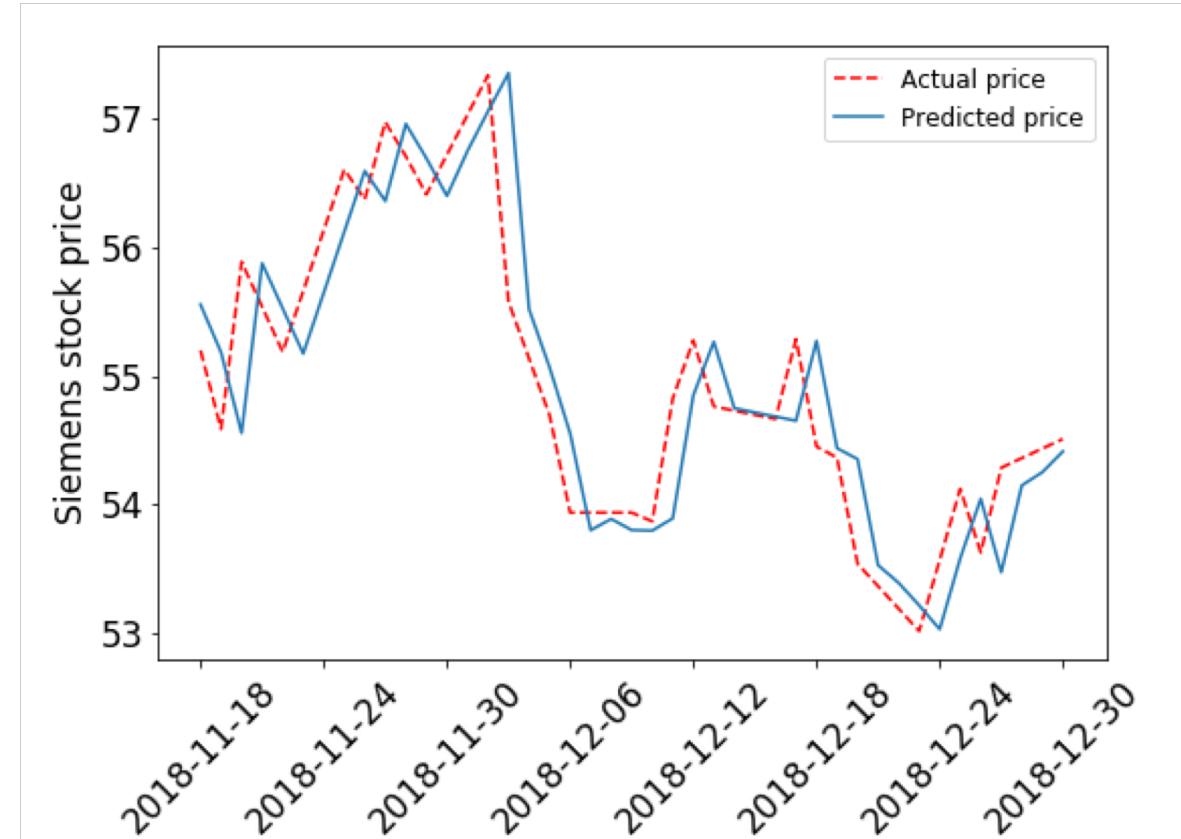
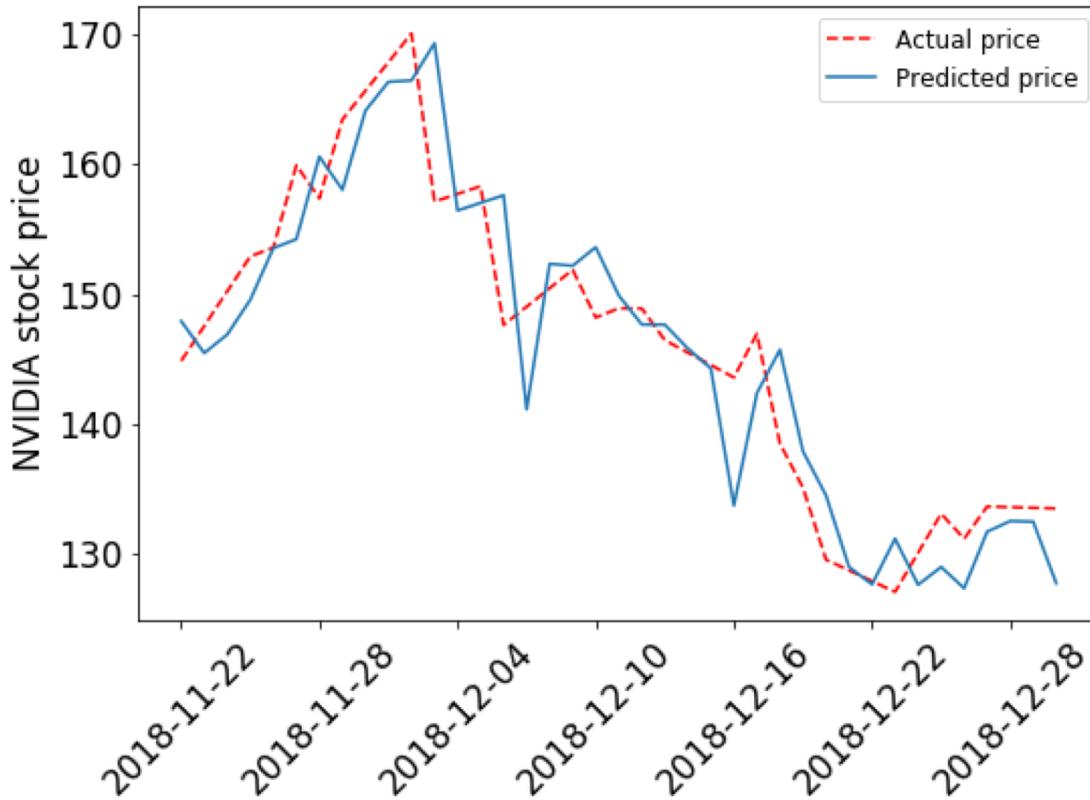
Python packages

- NLTK, Text Blob
- Scikit-learn
- Pandas
- Matplotlib
- Scipy, Numpy

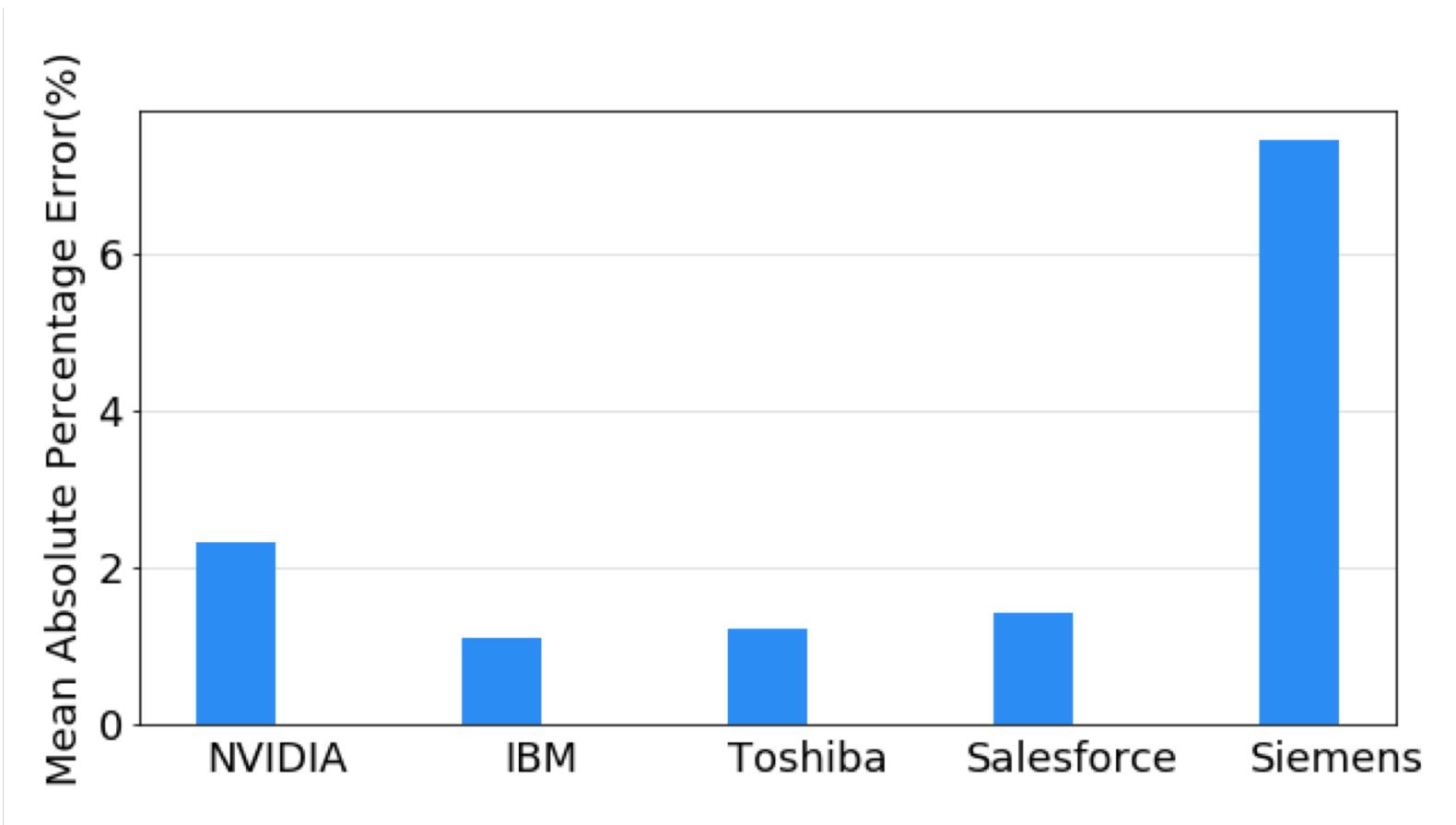
Predictions for IBM



Predictions for NVIDIA, Siemens



Mean Absolute Percentage Error



Stock Price leads Twitter Sentiment

- FedEx
- HSBC
- Equifax
- Qualcomm