

# Smart**Stocks**: Stock Price Prediction using Financial News

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#### Objectives

Understand relationship and predict the movement of stock prices in the market based on financial news

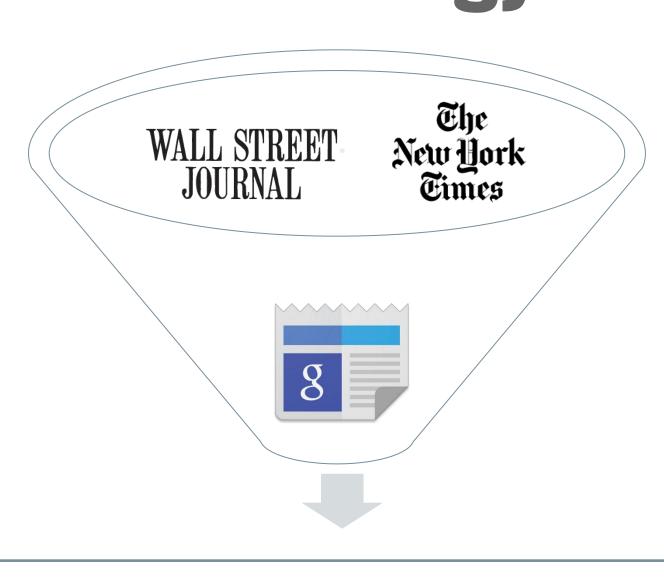
Create a portfolio for recommending best investment options to users

Create an interactive web and mobile application for the user and visualize the results

### Tools and Technologies



## Methodology



- Converted raw news data from XML to JSON format
  - Filtered out special characters such as foreign languages and symbols
  - Pruned HTML and CSS tags

Feature Extraction

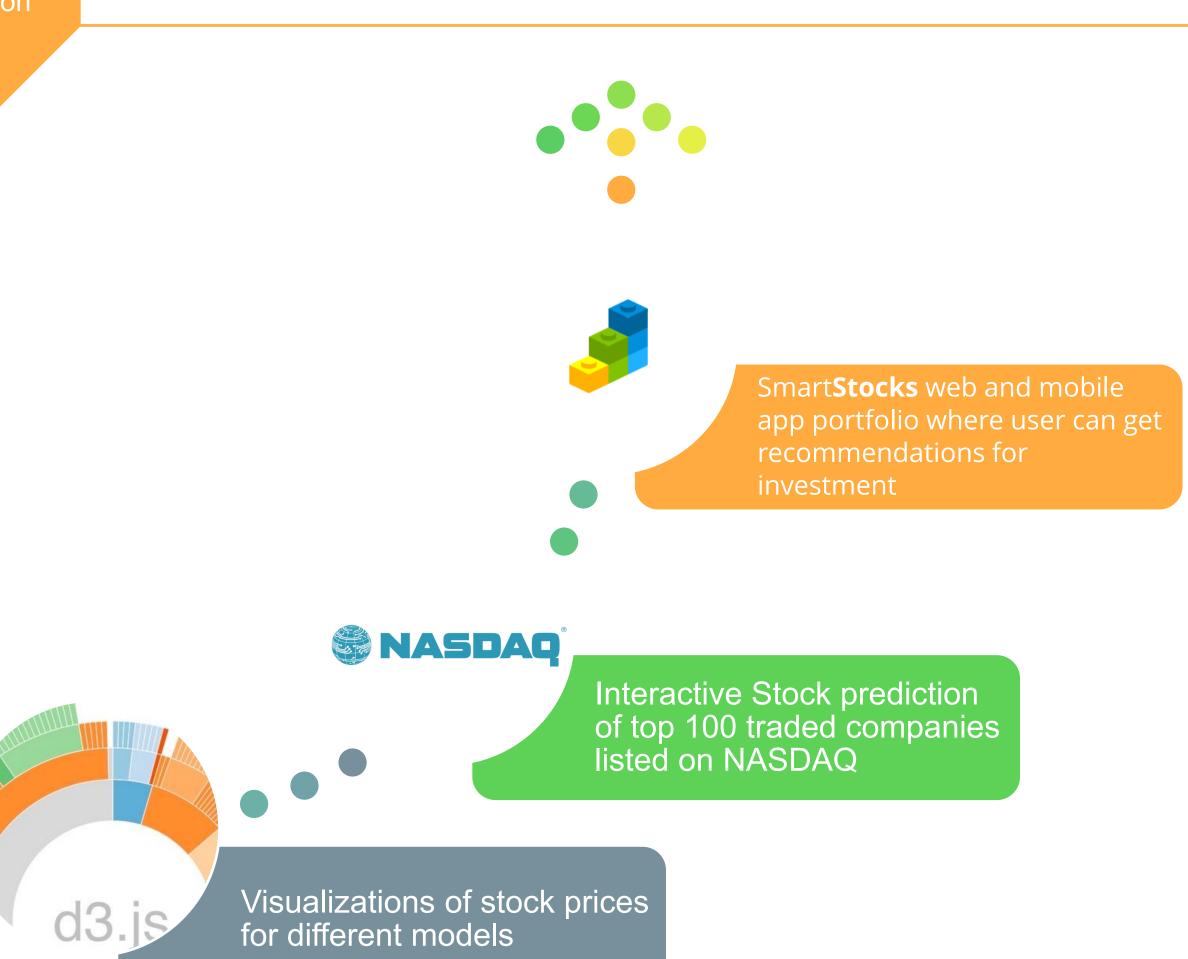
- Converted news data to word2vec feature vectors
- Removal of stopwords and punctuations
- Stock price window created in accordance with trading days
- Calculated stock price movement direction using historical data

Training

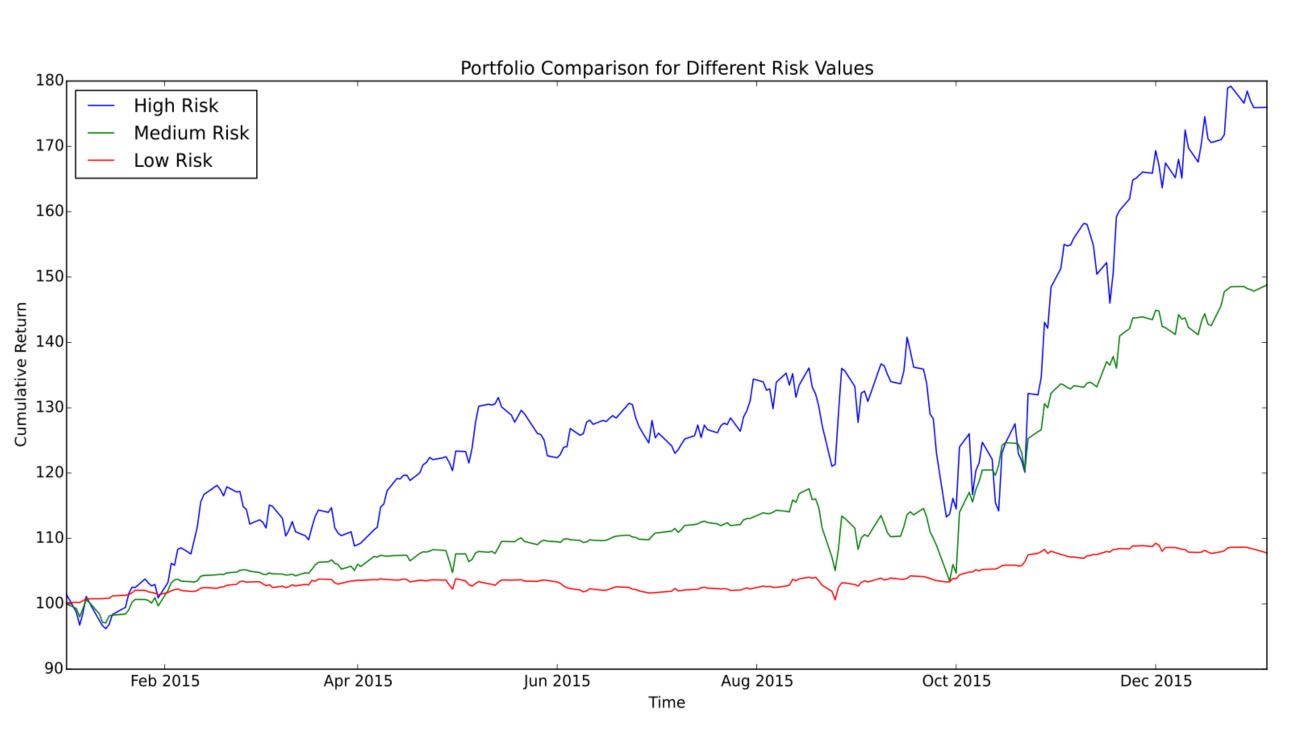
- Used linear regression to predict future stock prices and direction
- Trained model using only the news data
- Trained model using news and historical stock market data

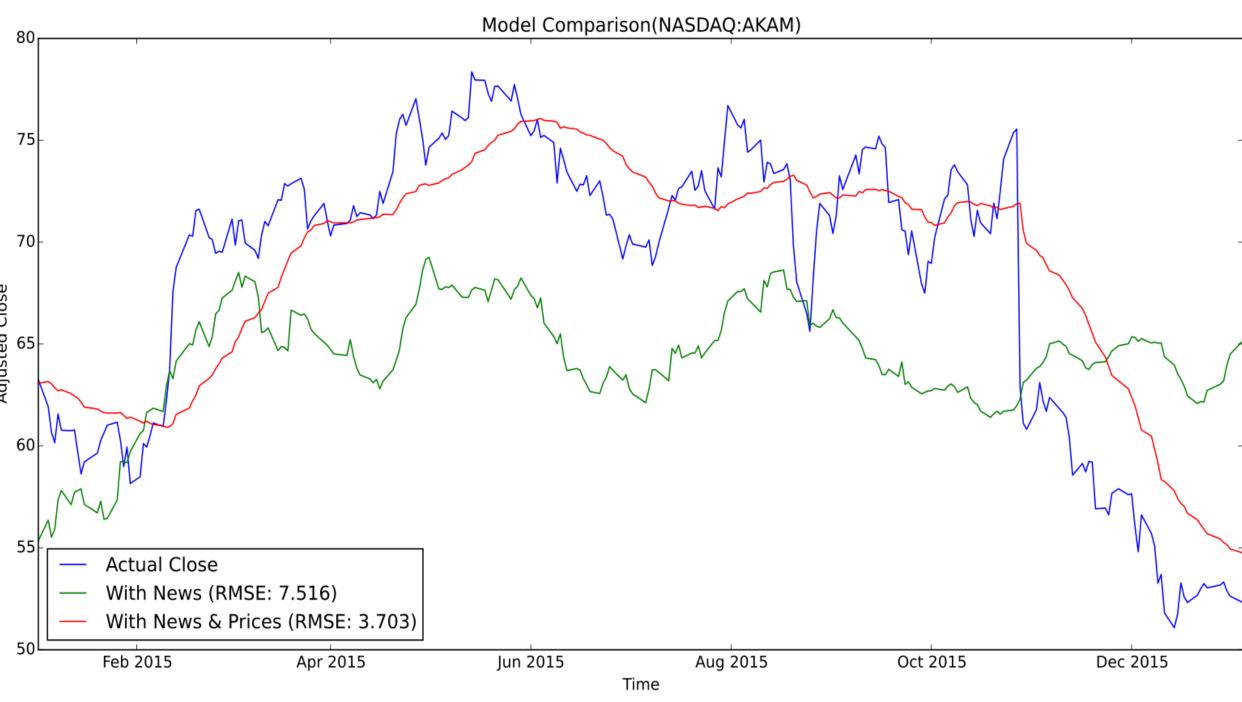
Creation

- Created portfolio for recommending best stocks to the user
- Portfolio takes into account risk factor and expected return
- Recommending multiple stocks investment options to the user



#### Results





There is a direct relationship between financial news and stock prices

Some stock prices are more sensitive to news than others

Better results are achieved by combining historical stock prices with news data