

FITSNBITS

Stock Market Prediction
with ARIMA

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INTRO

02

METHODS

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DATA

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RESULTS

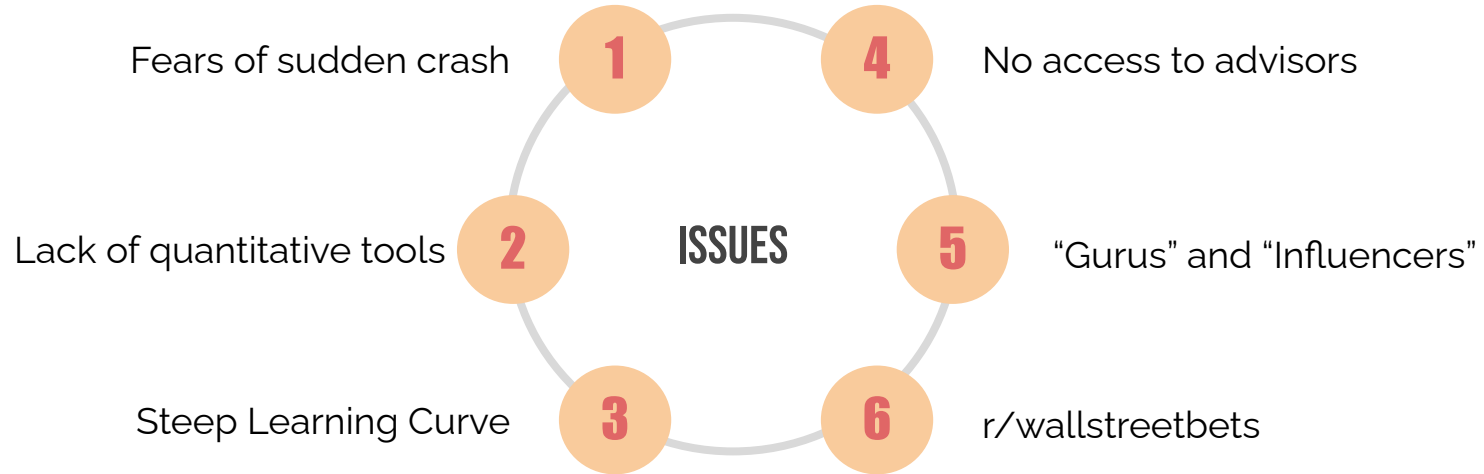
06

FUTURE WORKS

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INTRODUCTION



INTRODUCTION - GOALS



EASE OF USE

Easy and fast to
deploy



ACCURACY

Reduce Fear



SCALABILITY

Update
deployment per
position

METHODS



DATA



EDA



MODEL



EVALUATE

DATA



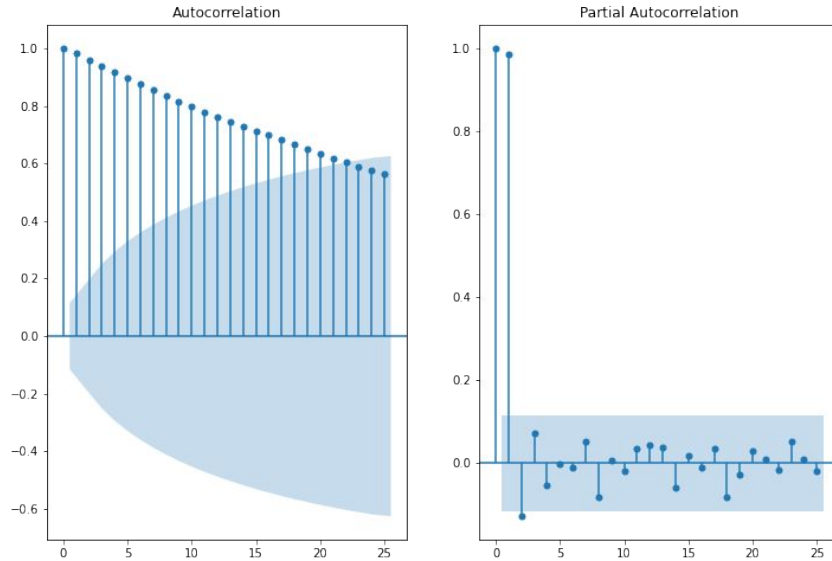
- API Call
- UNIX to DateTime
- JSON to DataFrame
- COVID-19 Excluded

S&P500 Daily Prices



ARIMA MODEL

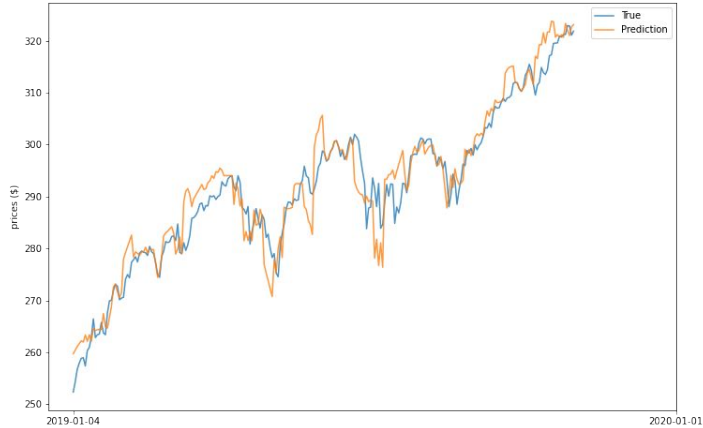
SPY ACF and PACF



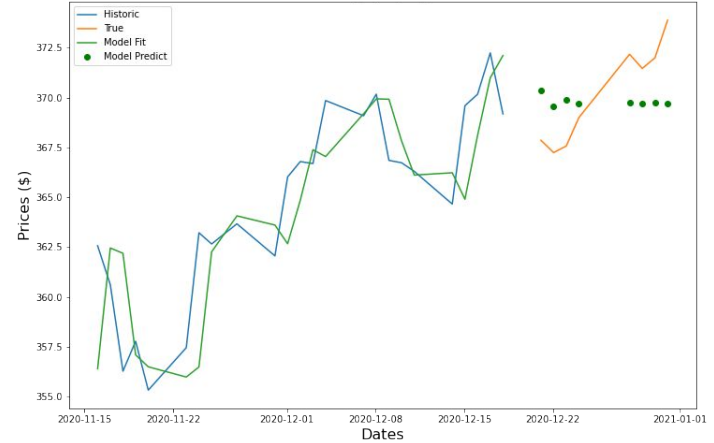
- Steady ACF drop
- Sudden PACF drop at lag 2
 - AR order 2
- GridSearch
 - Determine I & MA
 - Convergence
 - Metric: RMSE

RESULTS - BEST

SPY Price ARIMA Order (2, 1, 1)



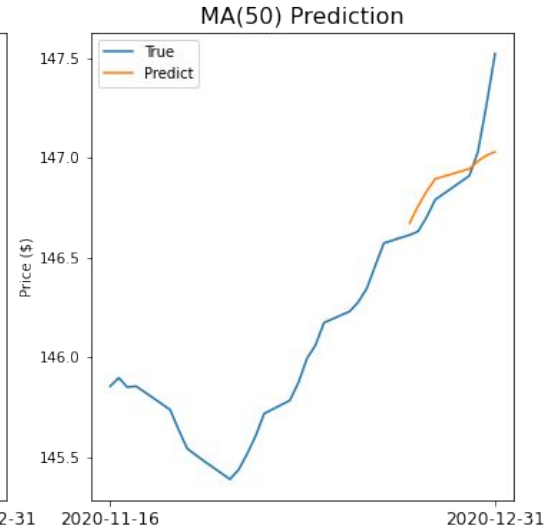
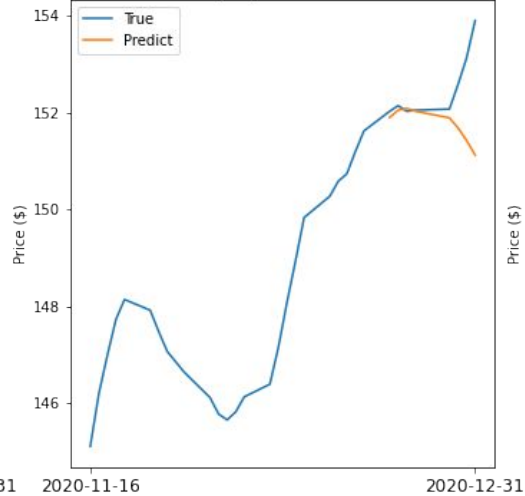
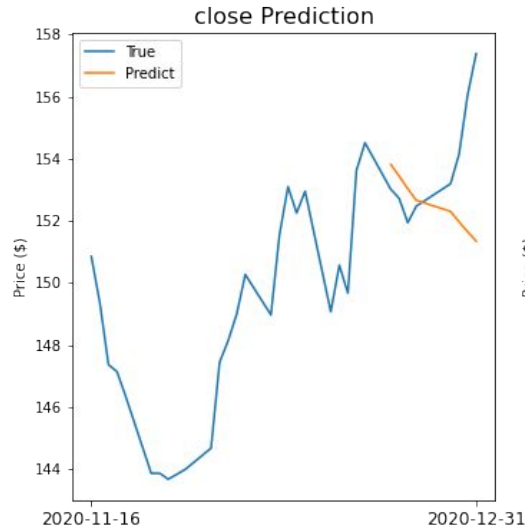
ARIMA order (2, 1, 1) Prediction



%RMSE > 1.6%

RESULTS - MOVING AVERAGE

JNJ ARIMA (2, 0, 0) Prediction with MA



RESULTS ACHIEVEMENTS



FAST

Reduced
GridSearch
Parameters



ACCESSIBILITY

100% Open Source



ADAPTABLE

Easily scaled and
adapted



ACCURATE

Overall low RMSE

FUTURE WORKS

MORE MODELS

Ensemble

Different Regression

DEEPER CALCULATION

Vector ARMA
(VARMA)

Classify Indicators

APPLICATION/LIBRARY

Deploy interactable
and scalable library
or application

THANK YOU

Questions?

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