

FITSNBITS

Stock Market Prediction
with ARIMA

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INTRO

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METHODS

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DATA

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MODEL

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RESULTS

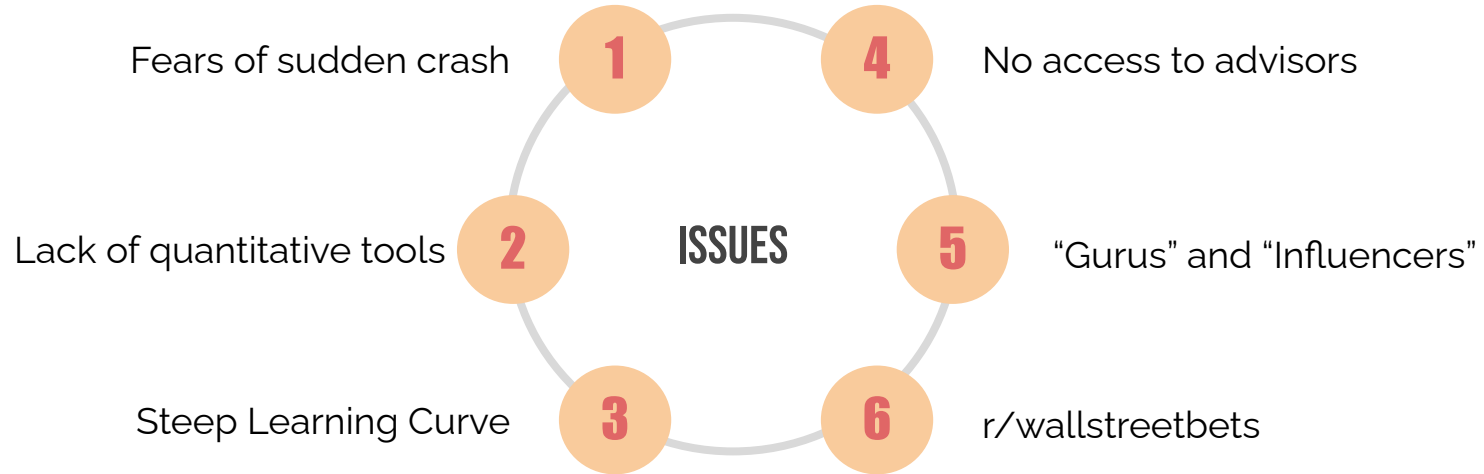
06

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

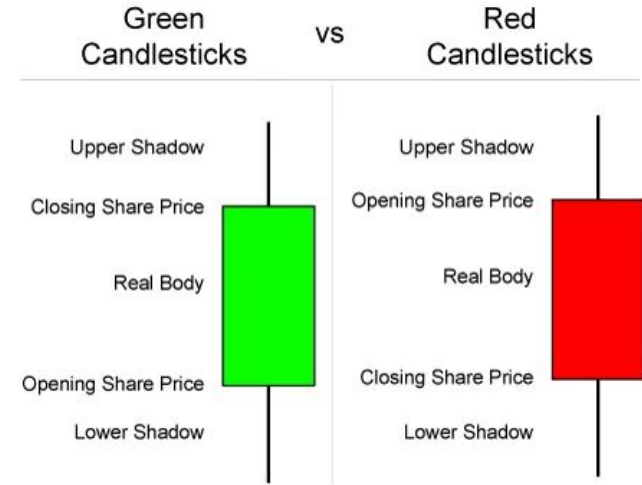


EVALUATE

DATA

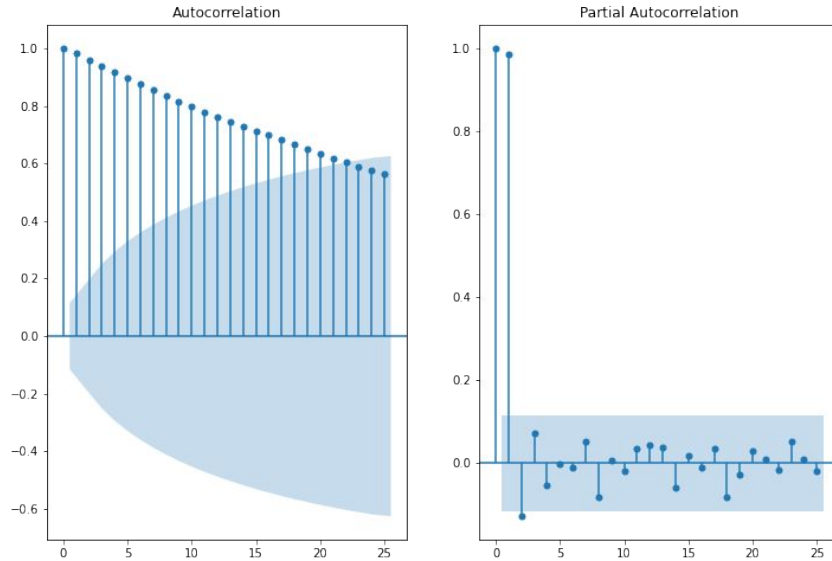


- API Call
- UNIX to DateTime
- JSON to DataFrame
- COVID-19 Excluded



ARIMA MODEL

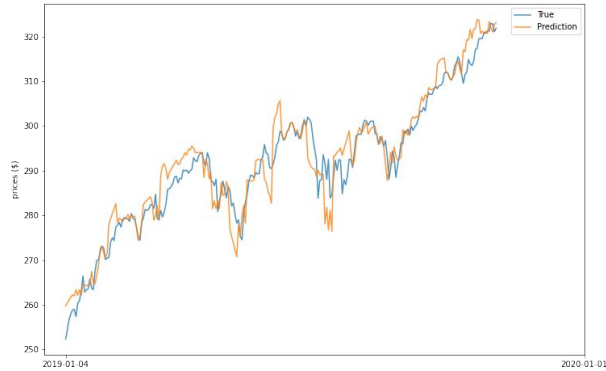
SPY ACF and PACF



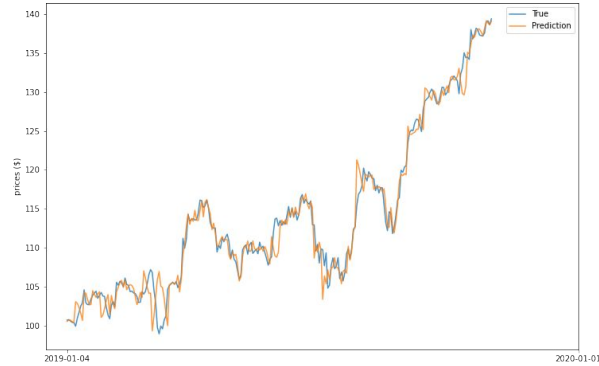
- Steady ACF drop
- Sudden PACF drop at lag 2
 - AR order 2
- GridSearch
 - Determine I & MA
 - Convergence
 - Metric: RMSE

RESULTS - BEST

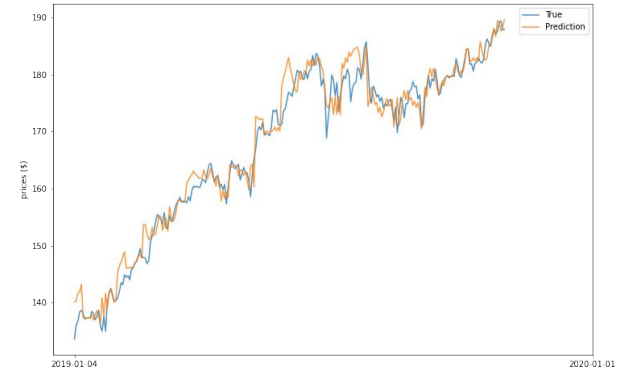
SPY Price ARIMA Order (2, 1, 1)



JPM Price ARIMA Order (2, 0, 2)



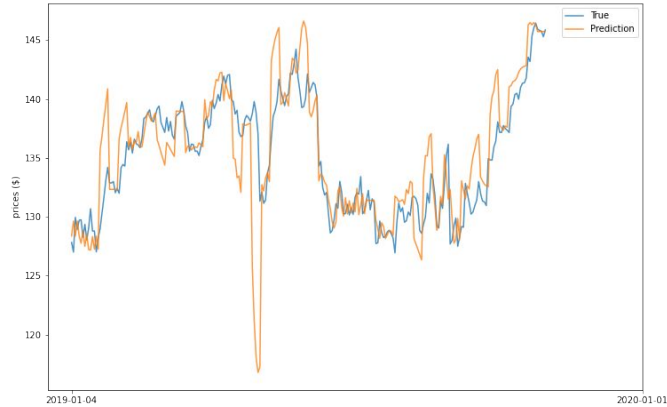
V Price ARIMA Order (2, 1, 1)



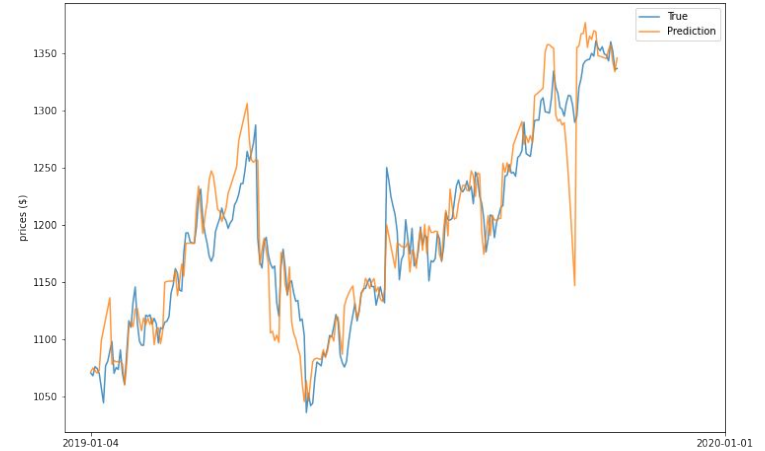
%RMSE > 1.6%

RESULTS - WORST

JNJ Price ARIMA Order (2, 1, 1)



GOOG Price ARIMA Order (2, 1, 1)



%RMSE > 3%

RESULTS ACHIEVEMENTS



FAST

Reduced
GridSearch
Parameters



ACCESSIBILITY

100% Open Source



ADAPTABLE

Easily scaled and
adapted



ACCURATE

Overall low RMSE

FUTURE WORKS

MORE MODELS

Regression with
NeUral Net,
RNN/LSTM

More Indices

VECTORIZE

Vector ARMA
(VARMA)

Simultaneous
Prediction

APPLICATION/LIBRARY

Deploy interactable
and scalable library
or application

THANK YOU

Questions?

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