

# Prophet

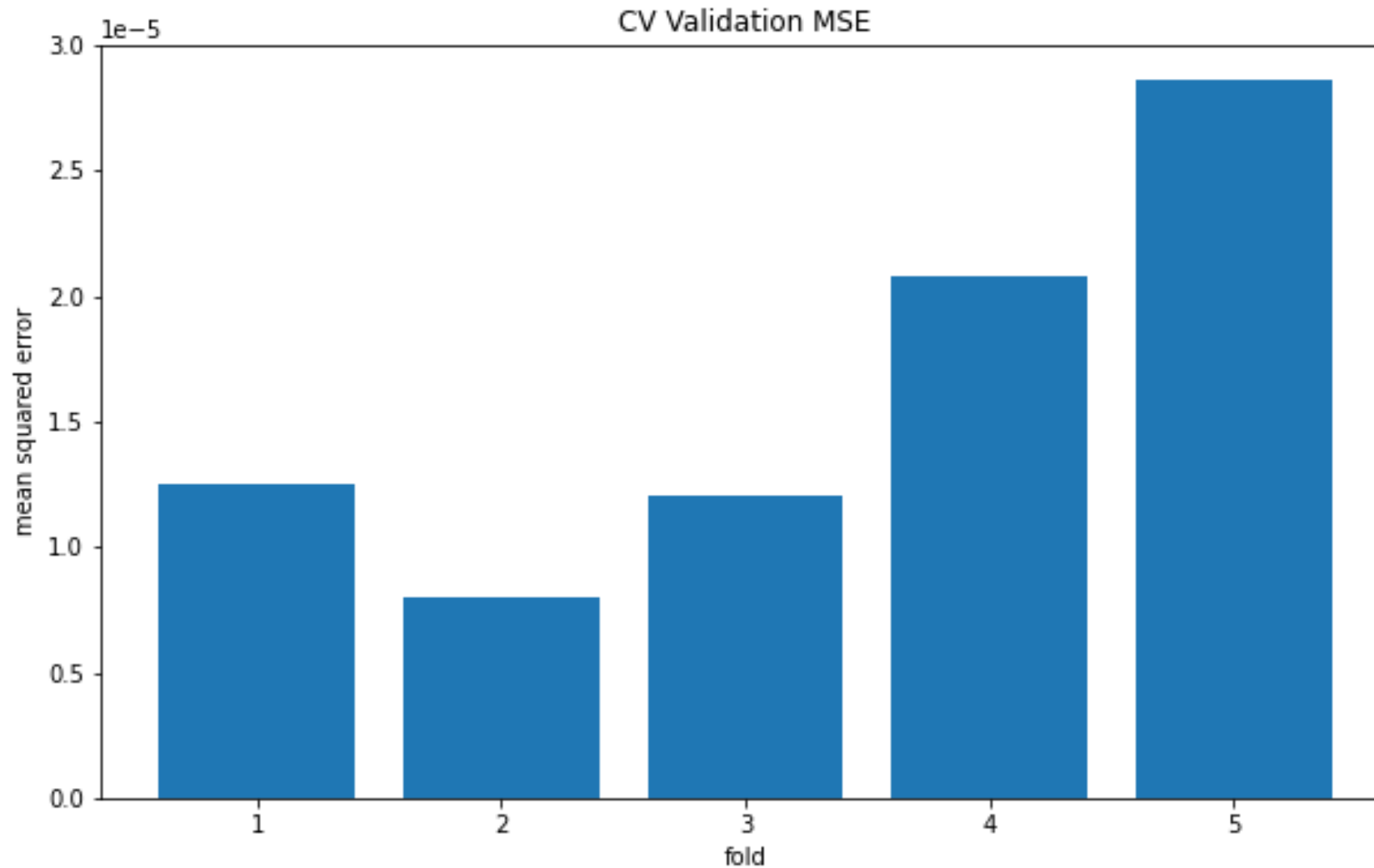
Prophet time series = Trend + Seasonality + Holiday + error

- Trend models non periodic changes in the value of the time series.
- Seasonality is the periodic changes like daily, weekly, or yearly seasonality.
- Holiday effect which occur on irregular schedules over a day or a period of days.
- Error terms is what is not explained by the model.

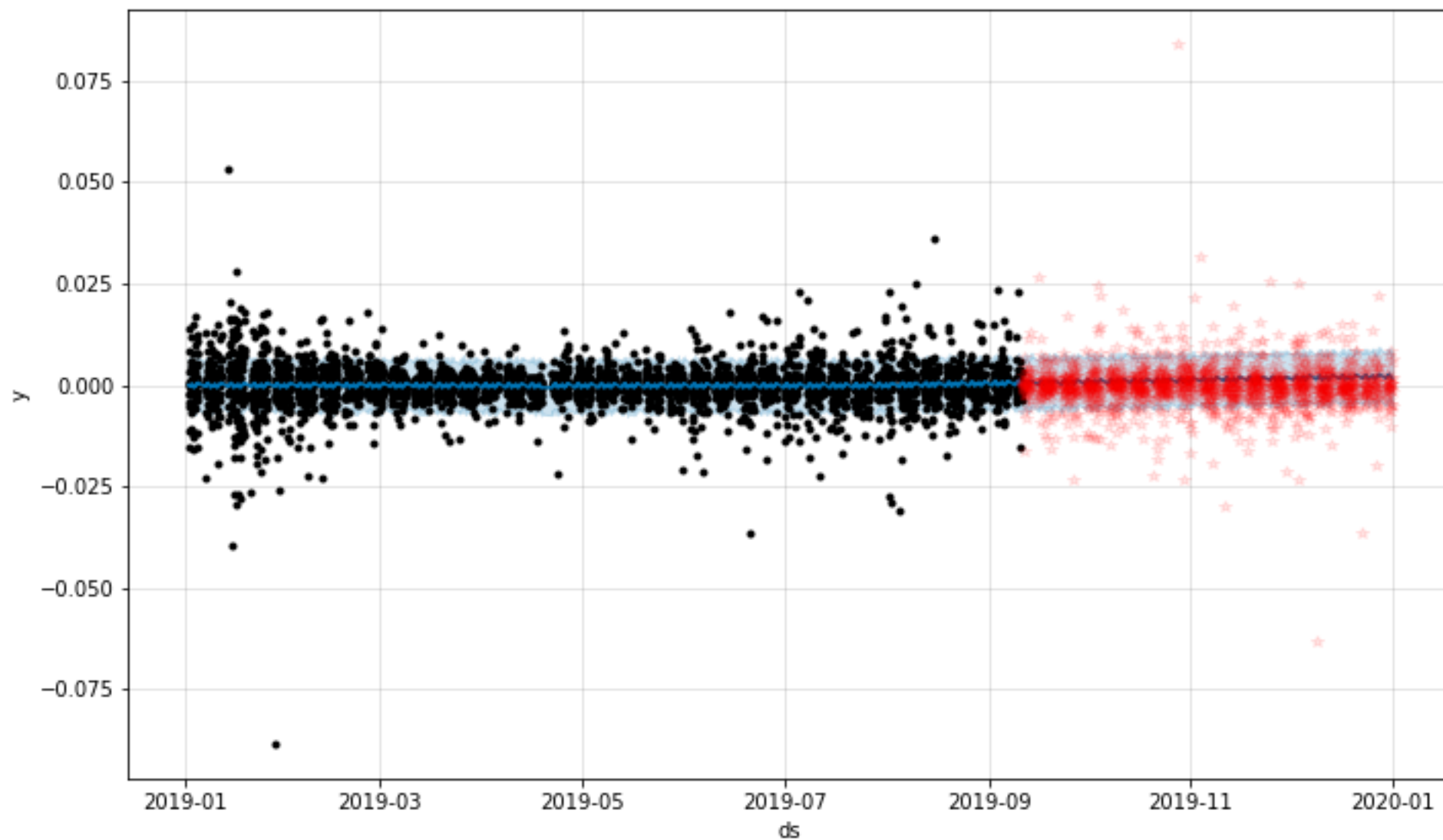
# Advantages

- Accommodates seasonality with multiple periods
- Prophet is resilient to missing values
- Best way to handle outliers in Prophet is to remove them
- Fitting of the model is fast
- Intuitive hyper parameters which are easy to tune

# Result – CV performance

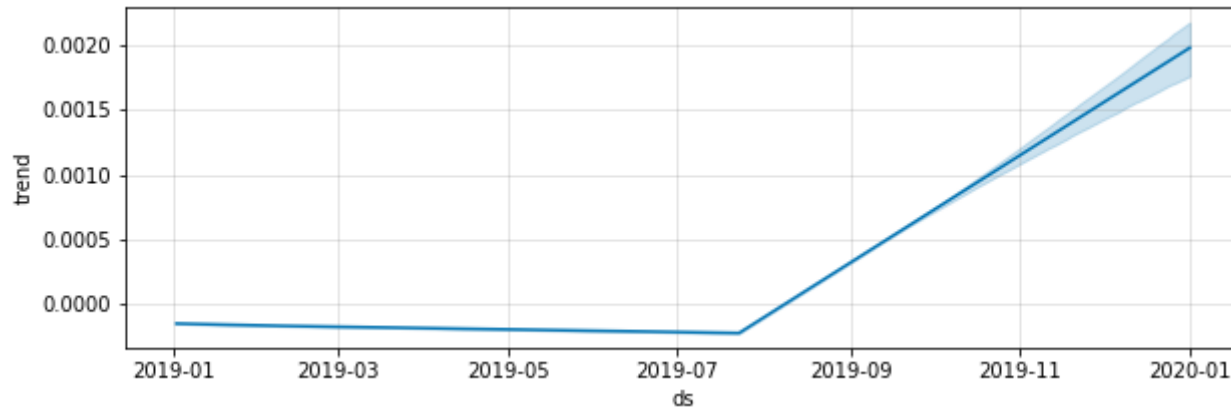


# Result – Final Model

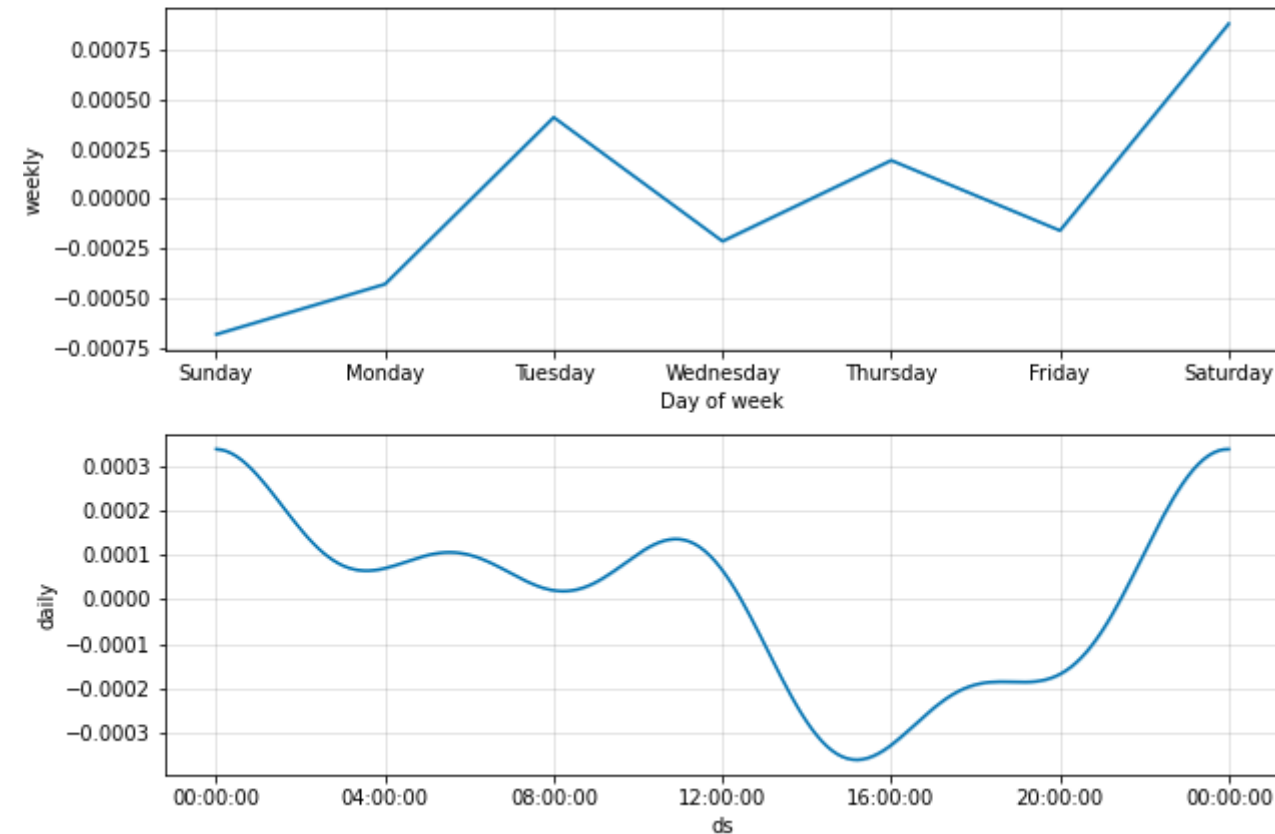


# Result – Final Model

## Trend



## Seasonality (weekly & daily)



# Reference

- Paper: <https://peerj.com/preprints/3190/>
- Package: <https://facebook.github.io/prophet/>
- Medium blog: <https://towardsdatascience.com/time-series-prediction-using-prophet-in-python-35d65f626236>