

## Stat 390 Weekly Report 4 (11/06 - 11/10)

### Progress/Accomplishments:

- Kaylee finished learning the Prophet models and finished both the Single Prophet and Multiple Prophet models.
  - She has also started the ARIMA models and plans to make significant progress with these 2 models in the next day or two.
- Ava
  - Finished creating and tuning the hyperparameters of the XG Boost model
    - Cross validated using specific time series methods (TimeSeriesSplit())
  - Begun creating the base Keras and ARIMA models
- Blanka
  - Finished both ARIMA models, started working on learning and understanding Prophet.

### Problems/Challenges:

- Kaylee ran into quite a few problems with running cross validation on the Prophet models, but with the help of the TA, was able to figure out the error and continue on tuning models to find the lowest RMSE
  - Kaylee also encountered very long run times for tuning and running her Prophet models (up to around 12 hours).
- Ava
  - Encountered long run times to tune the XG Boost models (was running a GridSearchCV for over 30 hours before giving up)
  - Doing a finer tuned RandomizedSearchCV returned a much higher RMSE
  - Was initially using k-fold CV before realizing that I couldn't because it shuffled the time series sequential data
- Blanka
  - My computer is breaking and not letting me run a lot of code plus push my changes and commits to github. I am working on fixing it and should be able to push all my changes by end of the weekend.

### Plan/Next Steps:

- Kaylee will plan to finish her ARIMA models over the weekend and move onward to the last 2 models beginning of next week.
- Ava
  - Tune and cross-validate the Keras and ARIMA models
  - Begin to write final report
  - Create the remaining two models

- Blanka: get her computer and github issues fixed. Finalize tuning of the final 4 models.
- We will all come together at the beginning of next week to work on our final presentation and figure out the best models to present.