Python Files for FAA GMU Laser Study

# Files and Descriptions

* Laser\_project\_dataset\_examination.ipynb
  + Basic script to examine the dataset at a high level:
    - Size
    - Column names
    - Info on the dataset: column names, how many are populated
    - Number of unique values for some of the columns (cities, reporting facilities, origins, destinations)
    - Examine the top 5 rows
* laser\_parser\_NM.ipynb
  + Script to create new column and add distance from landmark (airport or other) reported in remarks as NM
  + Also created columns using “mile” and “miles”
* laser\_parser\_alt\_AGL\_adj\_v2.ipynb
  + Script to adjust altitudes reported as AGL to MSL
  + This must be run after the altitudes are parsed from the remarks column
  + Script duplicates the altitude column to create a new column and then changes the values for the ones reported as AGL in the new column
* laser\_parser\_combine\_join\_for\_Genie.ipynb
  + Basic script to join files, drop columns, and then write file to csv
  + As we’ve merged all the data to one file, it’s not necessary, but including this in case someone may want/need for future reference
* FAA\_Laser\_Correlations.ipynb
  + Script to run the profiling and correlation matrices on the injury data

## Questions?

Contact: Char Burrage, [cburrage@gmu.edu](mailto:cburrage@gmu.edu)

* METARs\_Pull.py
  + Script to scrape weather data from the Iowa State website
* Final Dataset EDA.ipynb
  + Pandas profiling summary of initial Laser dataset and final merged cleaned dataset
* FAA\_Autoregression-full model.ipynb
  + Scripts for 3 different time series models for the laser dataset (AR, ARIMA, and SARIMAX)

## Questions?

Contact: Nichole Cheeseman, [ncheesem@gmu.edu](mailto:ncheesem@gmu.edu)

* Hot Spot Graphs.ipynb
  + Scripts to create graphics for weather and timing correlations
* Sample\_PHX\_Cloud\_Coverage.ipynb
  + Sample script to merge the laser incident with the weather by location/weather station
  + Sample is specific to Phoenix and would need to be updated for each location

## Questions?

Contact: Olivia Davis, [odavis9@gmu.edu](mailto:ncheesem@gmu.edu)