Data Science 690 Project Proposal

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1. I am interested in the atmospheric sciences and time series data. I would like to use data on date and intensity of hurricanes to predict future trends in hurricane number and intensity. The tool I would like to use is the fbProphet python package, created specifically for time series data. (<https://facebook.github.io/prophet/>)
2. The predictability of hurricanes is important economically in the ability to better prepare buildings, budgets, and people for climate change. This project would be interesting because it would be coming at it from a statistical point of view rather than a physical simulation point of view.
3. There are several questions:
   1. I try and answer if it is possible to replicate past years data on hurricane formation dates and intensity.
   2. I try and show a prediction for future years of hurricane formation and intensity.
4. The data on intensity and date is publicly accessible NOAA data. (<https://www.nhc.noaa.gov/data/>)
5. Date of formation (or landfall) and intensity
6. Past years data on formation and intensity. The package Prophet uses a simple input and output to predict future trends. It would be interesting to compare to more robust, physical models.
7. Summary statistics, scatter plot, chi-squared, 95% confidence interval.