**Huang, Shiwei Final Project**

**Data Analytics**

1. **Abstract and Introduction (2%) Describe your motivation, initial hypothesis/ idea that you wanted to investigate, and if applicable any prior work, interest in the topic (like an intro for a paper, with references), Min. 1/2 page.**

Introduction:

Since mid-march, COVID-19 has hit America hard. I wanted to use the latest COVID-19 data as an excel file and perform various analyzations on the COVID data. Mainly, my main interest is to analyze

**2. Data Description (3%) 1NOTE: 6000-level students must develop at least two different types of models, not just change the number of variables for a given model type. Describe how you determined which datasets you used in this project, the criteria, source, data and information- types in detail, associated documentation and any other supporting materials. Min. 1/2 page text (+graphics if applicable).**

**3. Analysis (5%) Explore the statistical aspects of your datasets. Perform any transformations, interpolations, smoothing, cleaning, etc. required on the data, to begin to explore your hypothesis/ questions. Analyze the distributions; provide summaries of the relevant statistics and plots of any fits you made. Discuss and specify or estimate possible sources of error, uncertainty or bias in the data you used (or did not use). Min. 2 pages text + graphics.**

**4. Model Development and Application of model(s) (12%) What types of models you used to describe the data (regression, classification, clustering, etc.), patterns/ trends you found, visual approaches that helped you choose models, and or variables (type/ number) in the model, other parameter choices or settings for the models (e.g. distance metrics, kernels, etc.). Apply the models to assess model performance (i.e. predict). Discuss the confidence in your results including any statistic measures. Discuss how you validated your models and performed any optimization (give details). Min. 6 pages text + graphics.**

**5. Conclusions and Discussion (3%) Describe your conclusions; interpret the results, predictions you made, the models and their characteristics, and a give summary of what changed as you went through the project (data, analysis, model choices, etc.), what you would do next, or do differently in a subsequent exploration. Min. 1 page text + graphics (optional). References – websites, papers, packages, data refs, etc. should be included at the end. Include your R scripts! (e.g. in a zip file) and also include the Github URL that contains the code. There is no specific citation format, just be consistent.**