

## Mobility and COVID-19 Related Deaths

### Overview

Since March of 2020, the number of COVID-19 related cases has risen to over 600,000 and continues to affect 200 countries. Under this condition, we hypothesize that mobility is a measurable value that can be used to predict the spread of COVID-19 cases. We are going to figure out the possible relationship between mobility data and COVID-19 deaths with Descartes lab dataset, Google dataset and Apple dataset. And we are going to use RStudio to clean those datasets, do data visualization and get our results.



### Objectives

Our project objective is to figure out the possible relationship between mobility and COVID-19 disease and possibly find a predictive model.

### Approach

- Split into three groups to do different research.
- Report the progress of three groups to sponsor biweekly and receive the feedback.
- Participate in weekly staff meeting to report our progress to advisors and get feedback.
- To have weekly group meeting to discuss the problems we met during the project.
- To visualize the data to see the condition of mobility and COVID-19 death in different states.
- To compare all the graphs that we get from three datasets and to figure out if there is a possible relationship between mobility and COVID-19 disease.

### Outcomes

- For the data visualization, we used RStudio with “ggplot” function to visualize the data to see the condition of mobility and COVID-19 death in different states and used “ccf” function to see the cross correlation of mobility and death.
- We used Texas and New York as examples here, we can see that the mobility and death in New York have the inverse correlation and in Texas have the positive correlation. But after we compared all the graphs, we can see that the deaths are almost same in each state. Thus, we conclude that mobility data looks more like a response to Coronavirus rather than a predictor.

