

Project Title: Department of Transportation Cameras Feed Database management for Rainfall Intensity Measurement

Description: New York City spans roughly 800 meters squared, with elevations from sea level up to 125 meters, and encompassing coasts, rivers, estuaries, and plains regions. Within this diverse area, one would assume that rainfall within the city would vary greatly from one location to another, however rainfall within this vast and various region is only officially measured in 3 locations: Central Park, LaGuardia Airport, and John F Kennedy airport. My project is to detect variations in rainfall intensity at different parts of the city utilizing images collected from Department of Transportation cameras located at 400+ locations throughout the 5 boroughs. The ultimate aim of this project would be to determine the flood resiliency of different areas of the city and to allow for improved preparation and responsiveness to storm-based flooding events. Students working with this project will gain experience in the creation of a database, which will involve data wrangling and curing, developing effective methods to organize and communicate information/data, and model validation. Having working understanding of Python is preferred to work in this project.

Project Title: Data visualization of 311 Call Complaints using JavaScript

Description: This project involves studying the 311 call complaints during flooding events in New York City from 2004 to 2015. These complaints are then visualized through web-based mapping and connected to socio-economic data based on the source location of each call. The data from the map and the graphs will also be used to analyze and estimate which age groups and which income groups tend to face the greatest inconveniences during flooding events and also which regions tend to have the greatest street flooding. The ultimate goal of this project is to help the city officials and state agencies prepare better for any such events in the future. Students working with this project will gain experience in web-based visualization of big data. Having a basic knowledge of programming with JavaScript is mandatory to work in this project.