

CS 171 - Visualization

Final Project Proposal

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Traffic Safety in Cambridge, MA

Public safety is an important concern for residents and commuters in the Boston metro area, but the information they rely on to avoid safety risks may be lacking. In particular, traffic safety issues are common and frequent, yet with the exception of severe accidents the information the general public has regarding traffic safety is mostly based on personal judgements from anecdotal or personal experiences. In general, any information provided fails to inform the public in a way that represents systemic problems or complex inter-related traffic dynamics at play. Our project aims to develop insightful visualizations representing public traffic safety data in a way which reveals probable "cause and effect" relationships between influencing factors and incident occurrences. Our goal is to employ good data visualization design principles and effective storytelling to create an end product that is both informative and visually appealing.

We plan on exploring datasets on city traffic data provided by the cities of Cambridge and/or Boston, MA. Our identified datasets include geographic location, incident type, date, time of day, and other related details which allow filtering, faceting, and sorting with various methods. This data can also be merged with other available datasets on traffic density and potentially weather. Additionally, we plan to classify and represent geo-areas into safe and potentially unsafe zones based on risk factors, which would give residents a guide to reroute their travel via safer paths. We were attracted to these datasets due to their completeness and readiness for analysis, which will allow us to focus our efforts on developing effective visualizations. Also, the cities of Cambridge and Boston provide a significant number of other related datasets with information that could potentially enrich our visualizations in meaningful ways. We think there's a lot to be explored in the data.

Preliminary Data Sources

Cambridge Open Data - Public Safety Dataset:

<https://data.cambridgema.gov/Public-Safety/ACCIDENT-2014/7fai-h9wk>

Cambridge GIS data

<http://cambridgegis.github.io/gisdata.html>

Boston Crime Incident Reporting Dataset:

https://github.com/likekeustc/Boston_Crime_Data/blob/master/crime_markdown.md

City of Boston Owned Property

<https://data.cityofboston.gov/Facilities/City-of-Boston-Owned-Property/rsyv-u23m>

Cambridge Weather Data

<https://www.wunderground.com/history/airport/KBOS/2013/1/15/MonthlyHistory.html?format=1>