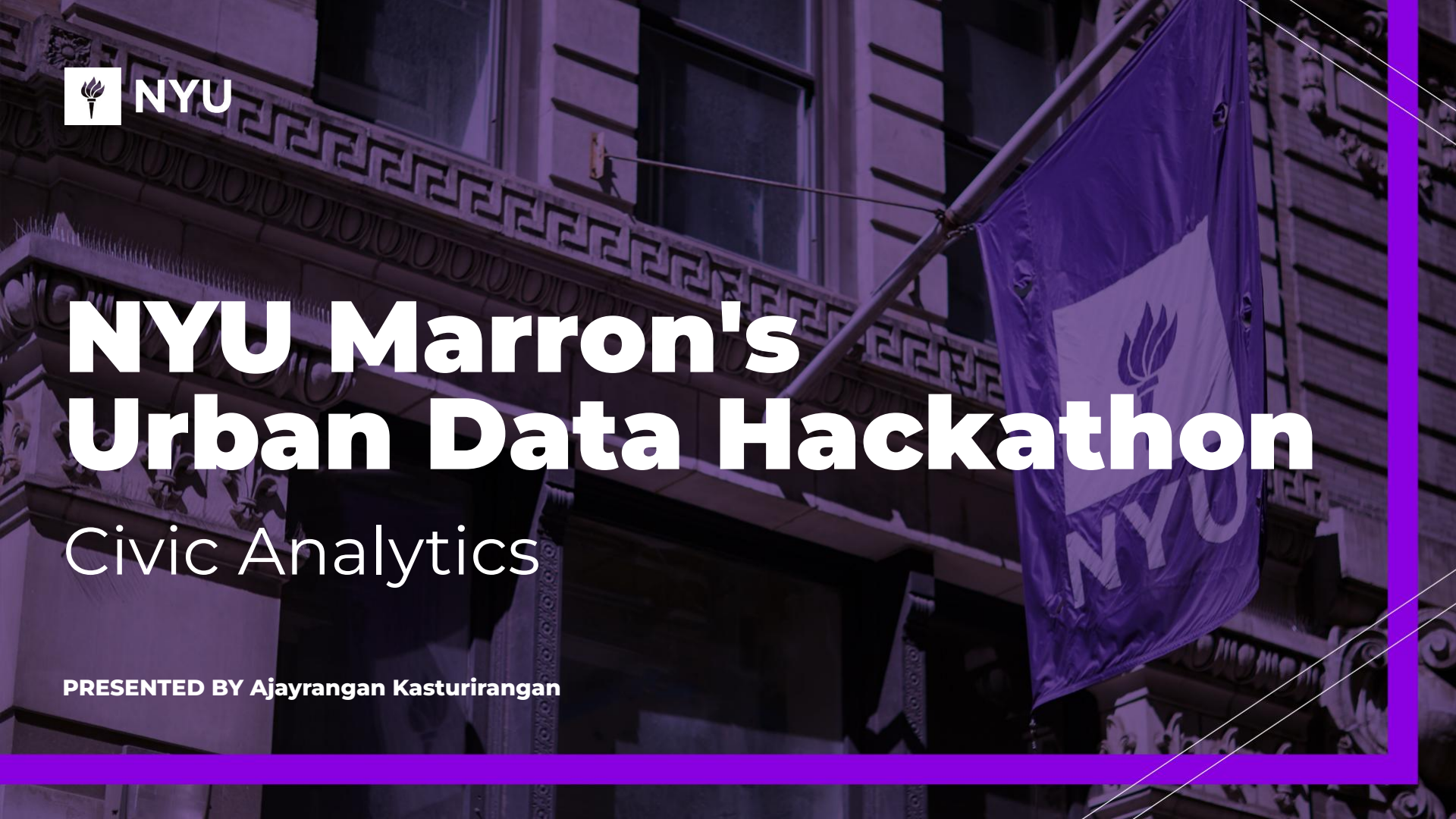


NYU

NYU Marron's Urban Data Hackathon

Civic Analytics

PRESENTED BY Ajayrangan Kasturirangan

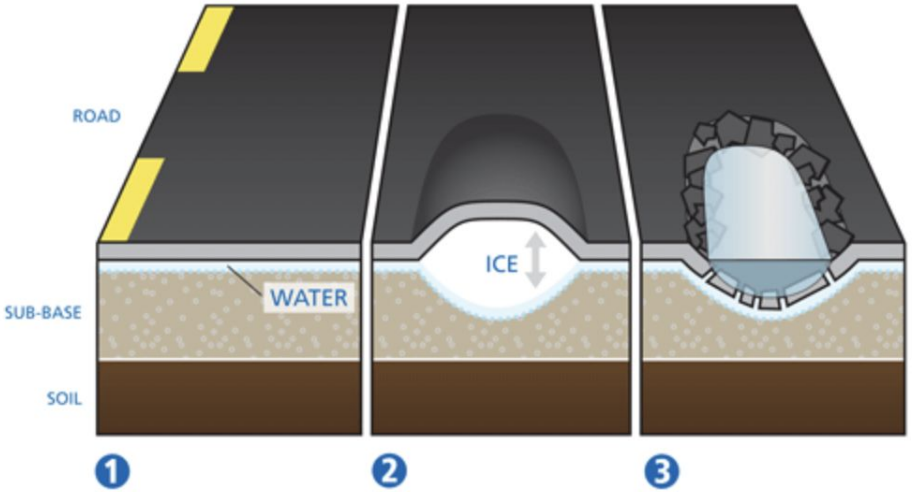
Plowing Snow vs Potholes

NYU

What's wrong?

- 311 receives more than 60,000 service requests annually from concerned residents regarding roadway potholes that they want fixed.
- Plowing snow from roads during the winter may have effects on the long term stability of roads depending on the construction quality leading to potholes.

Science?



Source

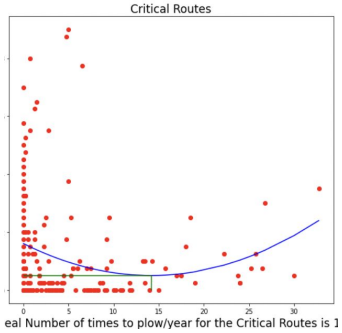
Data

- NYC Street Pothole Work Orders-Closed
- DSNY - Snow Priority Designation
- DSNY - PlowNYC Data

NYU

Methodology

physicalid	roadwaytyp	segm
110425.000000	110425.000000	110425.0
69354.079049	1.394739	344.7
49777.925313	1.593851	289.6
3.000000	1.000000	1.8
30954.000000	1.000000	174.9
61304.000000	1.000000	263.4
92875.000000	1.000000	459.7
197164.000000	13.000000	15093.6



Cleaning

Filtering out irrelevant data and ensuring data sanity. This includes identifying the ideal time frame in each dataset.

Exploring

Identifying the relevant and feasible subset of data for our analysis. This includes checking the different road types and snow priorities.

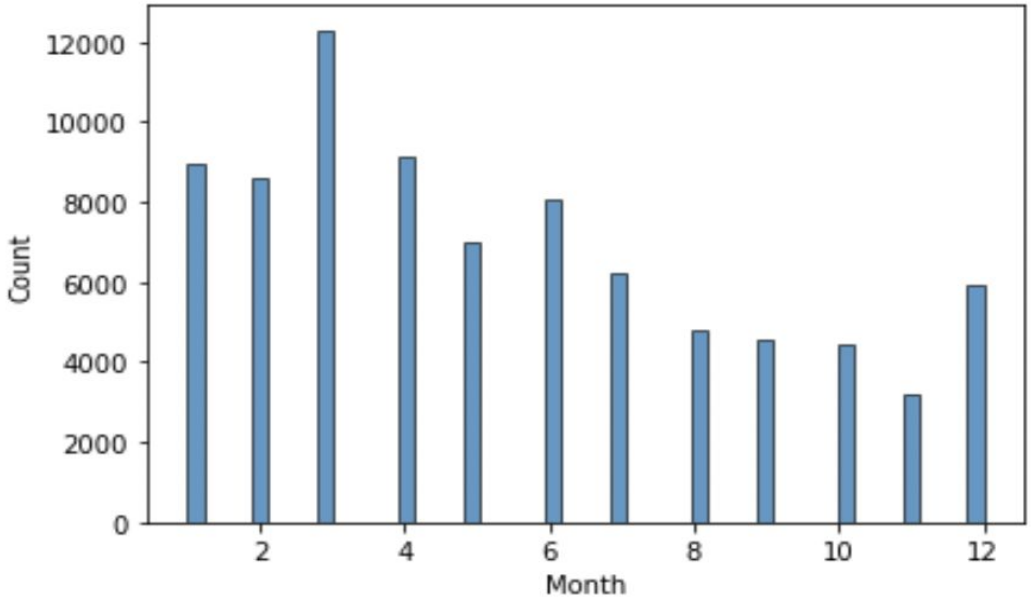
Analyzing

Analyzing the data by using optimization technique: Fitting a curve with the least square error to minimise number of potholes/year as a function of number of times the road was plowed.

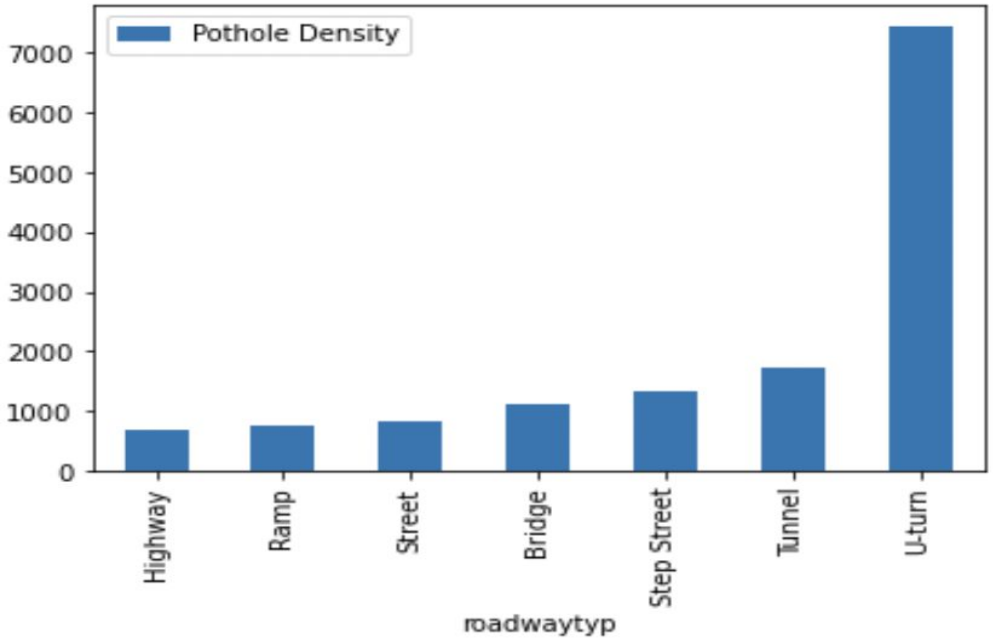
NYU

```
sns.histplot(data=df_pothole, x="Month")
```

```
<AxesSubplot:xlabel='Month', ylabel='Count'>
```



NYU

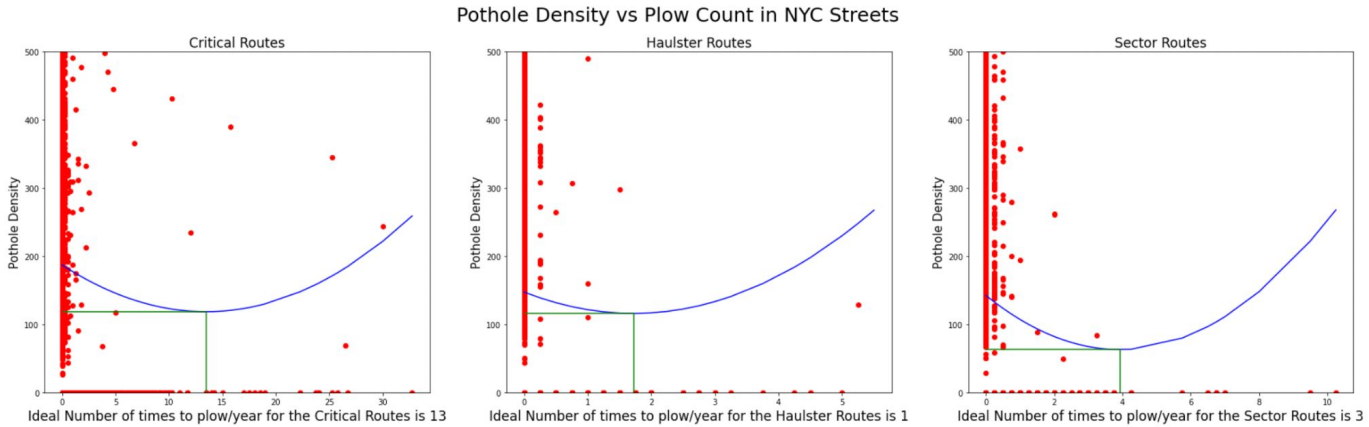


roadwaytyp	Count
Bridge	202
Highway	449
Ramp	360
Step Street	1
Street	68064
U-turn	25

NYU

Result

-For larger samples, it is possible to fit a second degree polynomial and arrive at an ideal plow/year value.
-Deviating from this value could possibly result in an increase in number of potholes.
-Encouraging to further explore this hypothesis.



NYU