NYC Subway Stations Fare Evasion Recommendation

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Introduction

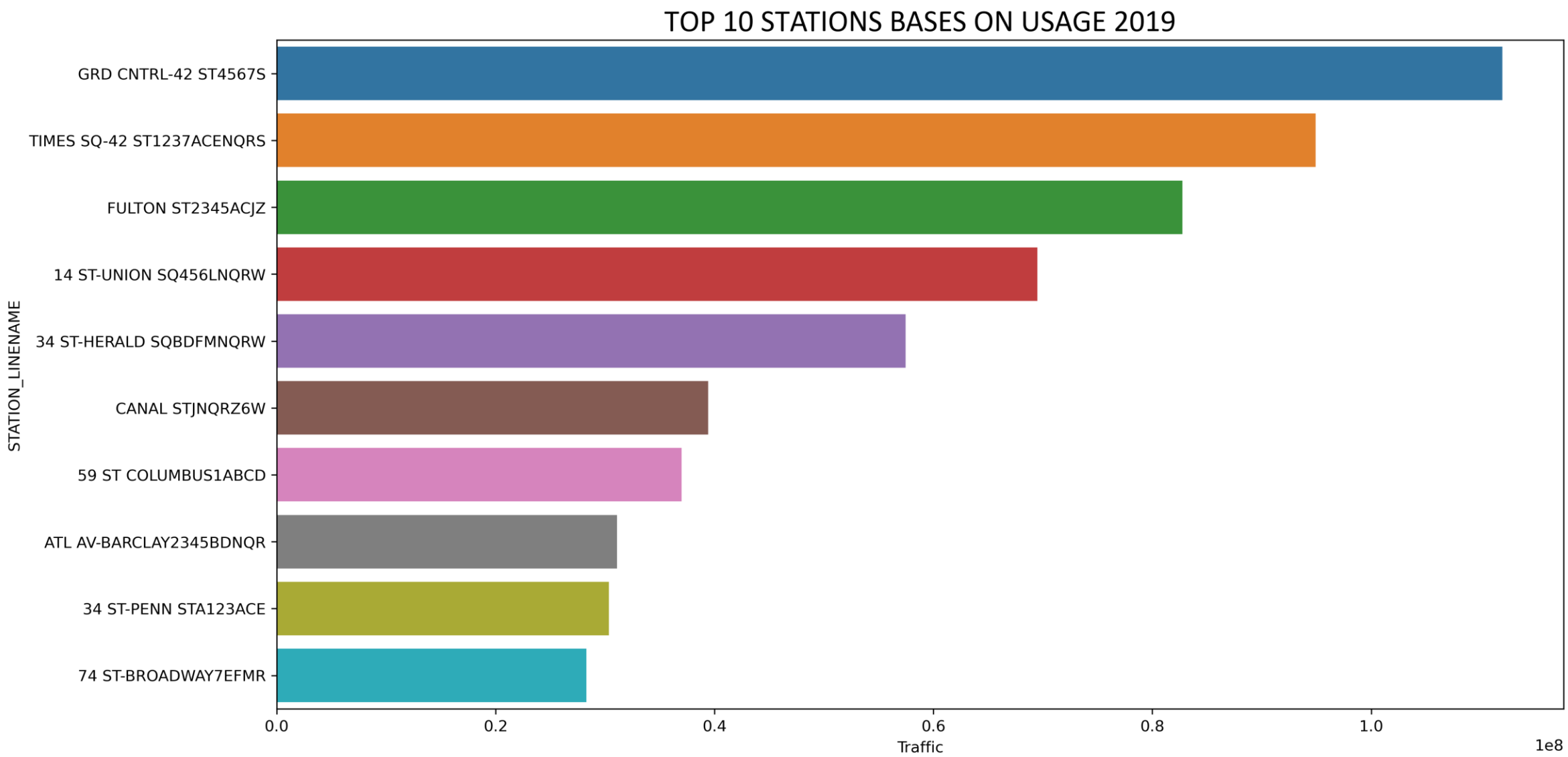
- 472 Subway Stations
- $215 Million In Unpaid Fairs In 2019
- $59 Million During The First Quarter Of 2021

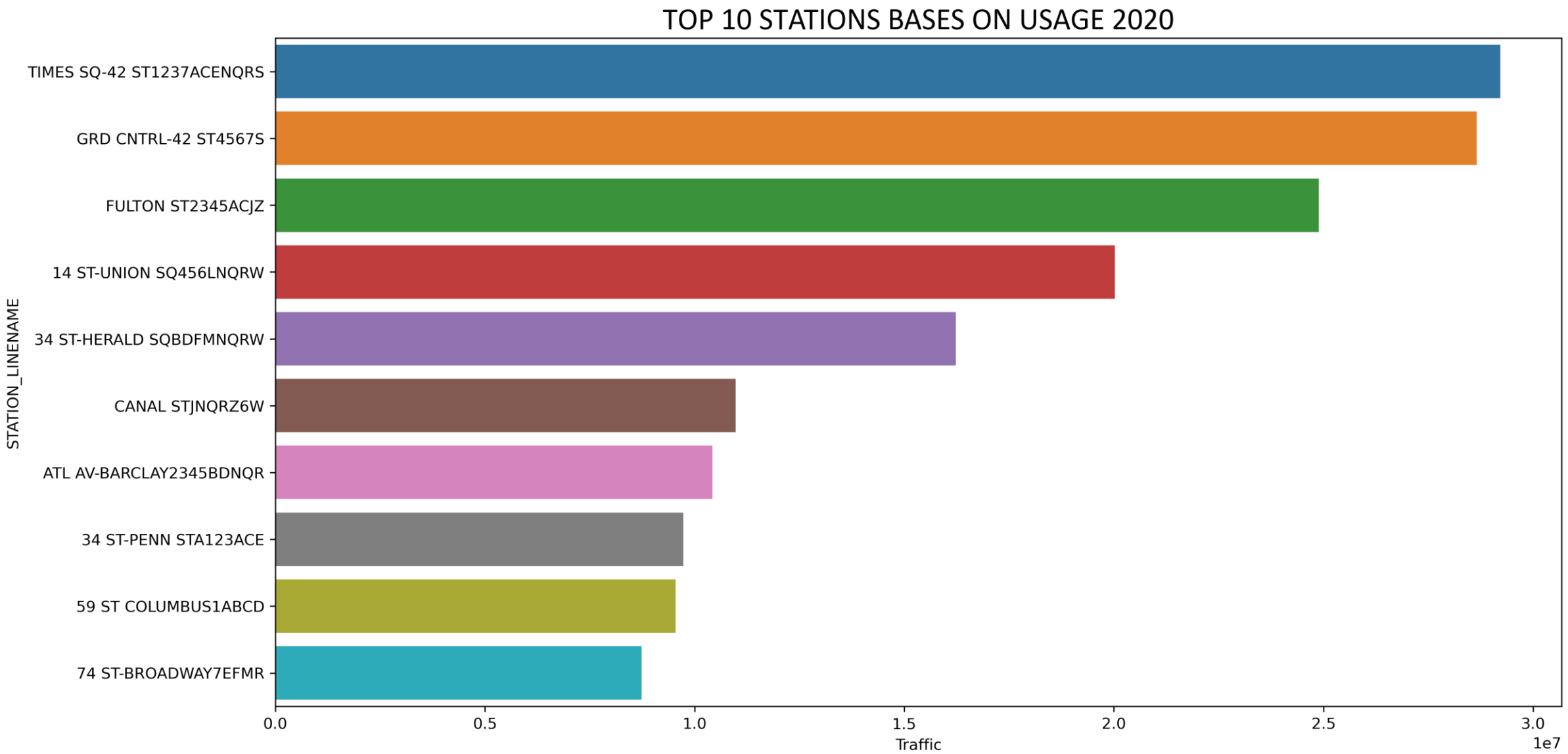
Goal

- Help In Minimizing The Millions Of Dollars In Losses
- Find Subway Stations With The Most Traffic And Fare Evasion

MTA Turnstile Data

- Timeline: The Last Six Months Of 2019 And The First Six Months Of 2020
- Daily Entry Count: Difference between an entry and its preceding one.
  - If count is negative, take the absolute value
  - If count is larger than 1,000,000 entry, ignore it
  - For each station, sum the counts of each day


TOP 10 STATIONS BASES ON USAGE 2019
GRD CNTRL-42 ST4567S
TIMES SQ-42 ST1237ACENQRS
FULTON ST2345ACJZ
14 ST-UNION SQ456LNQRW
34 ST-HERALD SQBDFMNQRW
CANAL STJNQRZ6W
59 ST COLUMBUS1ABCD
ATL AV-BARCLAY2345BDNQR
34 ST-PENN STA123ACE
74 ST-BROADWAY7EFMR
STATION_LINENAME
0.0
0.2
0.4
0.6
0.8
1.0
Traffic
1e8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STATION_LINENAME
0.0
0.5
1.0
1.5
2.0
2.5
3.0
1e7
Traffic

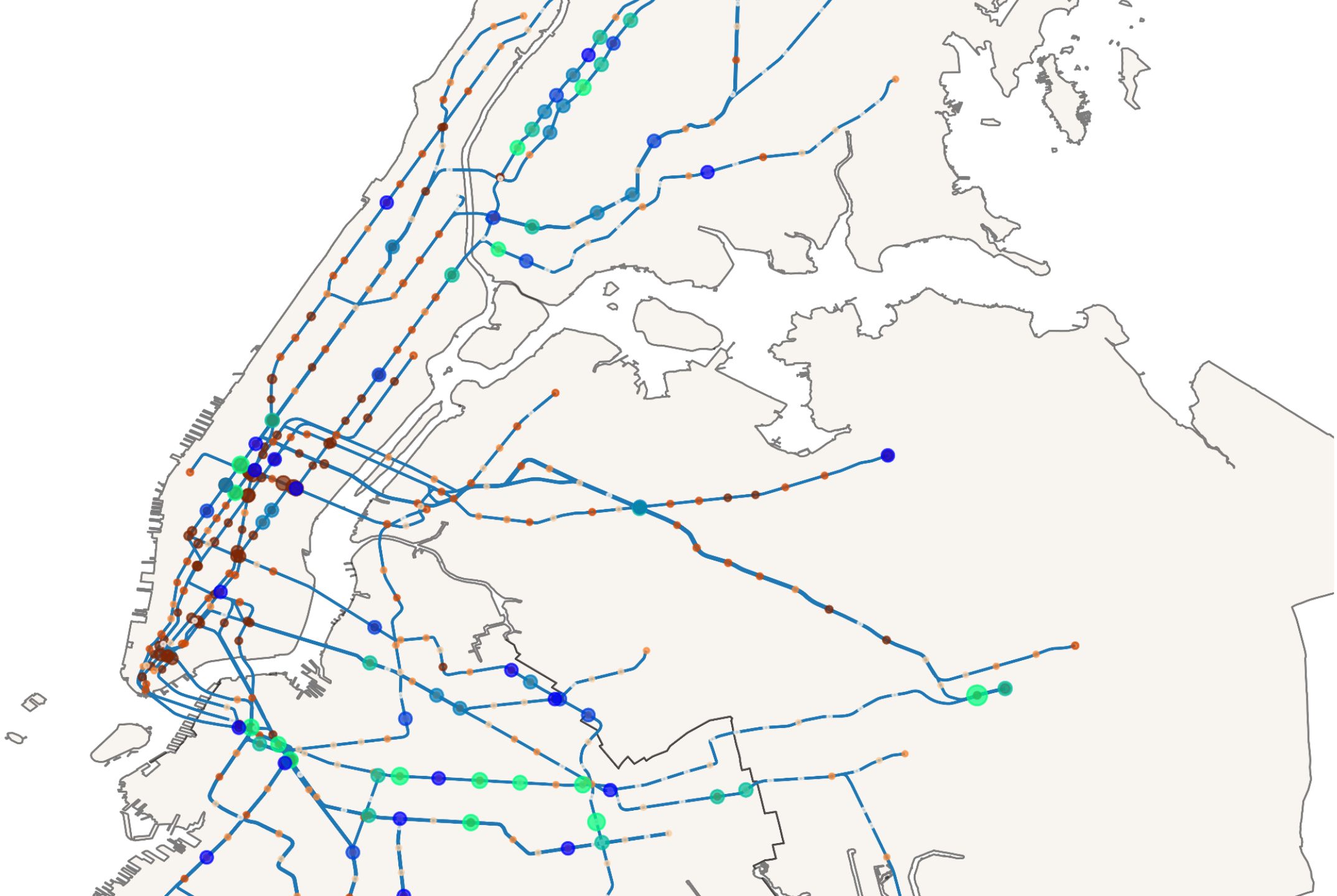
NYPD Arrest Data

- Has A Breakdown Of Every Arrest By NYPD From 2006 To 2020
- Theft Of Service Arrests
- Arrest’s Geo Location Is No More Than 250 Meters From A Subway Station

Top 10 Arrests in 2019-2020

Station	2019	Station	2020
Sutphin Blvd - Archer Av	70	42nd St - Port Authority Bus Term	34
Atlantic Av - Barclay's Center	64	Sutphin Blvd - Archer Av	26
42nd St - Port Authority Bus Term	60	Sutter Ave	24
34th St - Penn Station	50	Atlantic Av - Barclay's Center	24
Nostrand Ave	43	34th St - Penn Station	22
Jackson Hts - Roosevelt Av	42	Nostrand Ave	15
Jay St - MetroTech	36	Broadway Junction	15
74th St - Broadway	33	Crown Hts - Utica Ave	14
Tremont Ave	31	23rd St	11
Sutter Ave	30	125th St	11
Total	**1427**	**Total**	**525**

Stations Traffic and Arrests June2019-June2020



Recommendation (11 Stations out of 472)

Arrests 2019-2020
42nd St - Port Authority Bus Term
34th St - Penn Station
Nostrand Ave
Atlantic Av - Barclay's Center
Sutphin Blvd - Archer Ave
Sutter Ave

Traffic 2019-2020
74 ST-BROADWAY
14 ST-UNION
34 ST
CANAL ST
FULTON ST

Future Work

- Further analyze arrest data
- Study social, economical, and racial dynamics in NYC

Questions