

Street Team Placement for Maximum Gala Attendance

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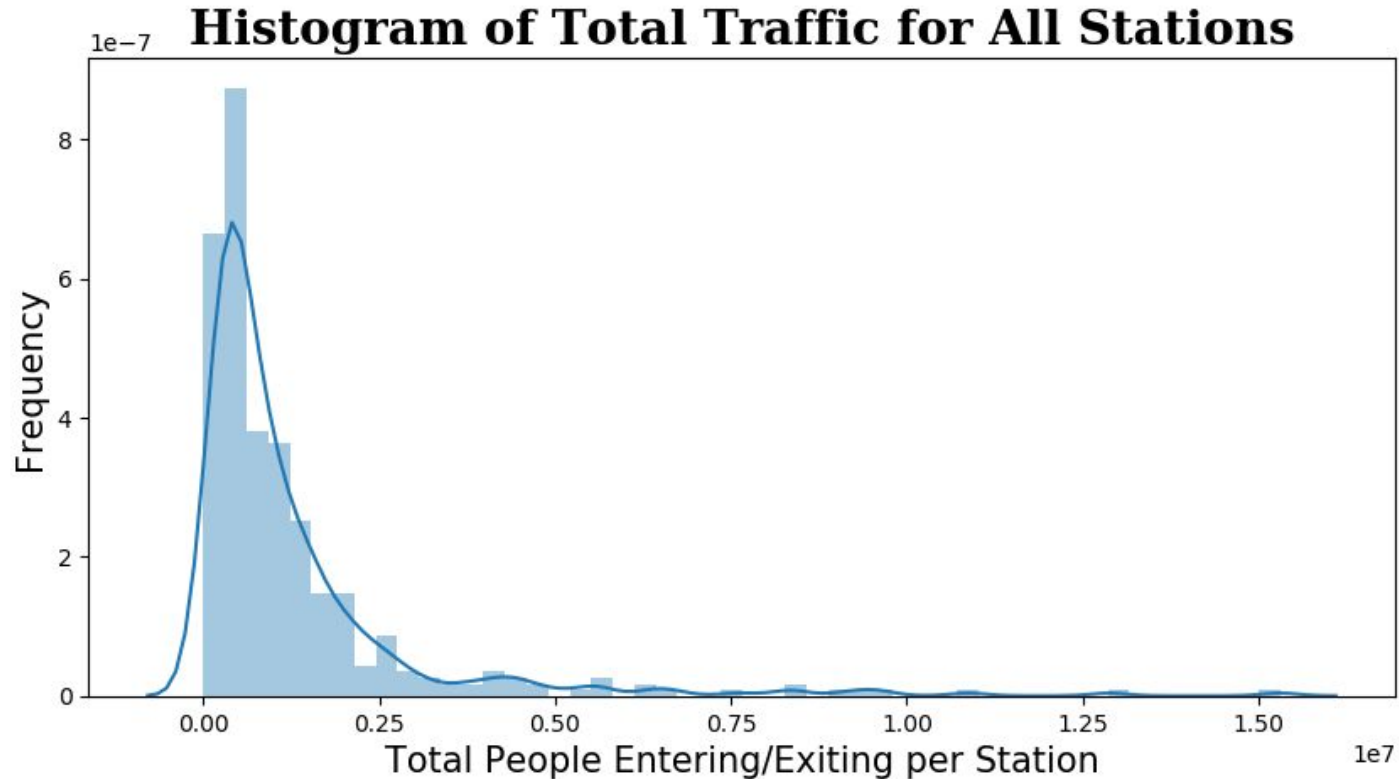
Introduction

- Motivation: WomenTechWomenYes wants to invite visitors to annual gala but has limited resources available
- Objective: Use MTA turnstile data to determine optimal times/locations for street team placement at subway stations
- Goals:
 - Determine stations/areas with highest density of foot traffic over several timescales
 - Provide recommendations regarding where to place street teams for peak public interaction and gala site

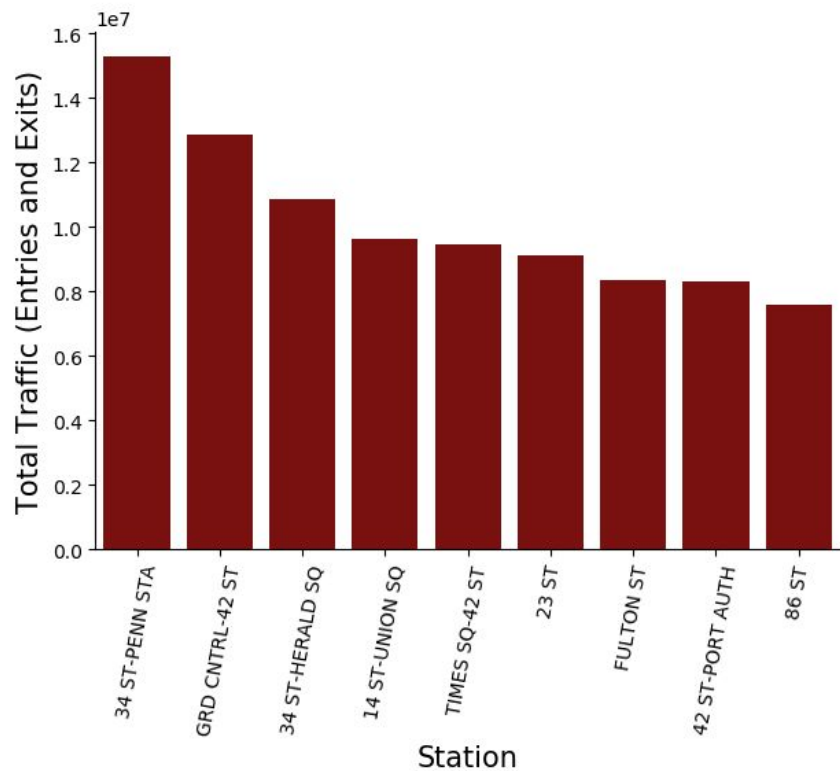
Methodology

- Exploratory Data Analysis: visualizations of variable distributions, summary statistics (count, mean, sum), split-apply-combine methods
- Data: Past two months of NYC MTA turnstile data
- Metrics: Total Traffic (Entries + Exits) by turnstile, station, date, day of week, time, and location
- Tools - pandas, matplotlib, seaborn, folium

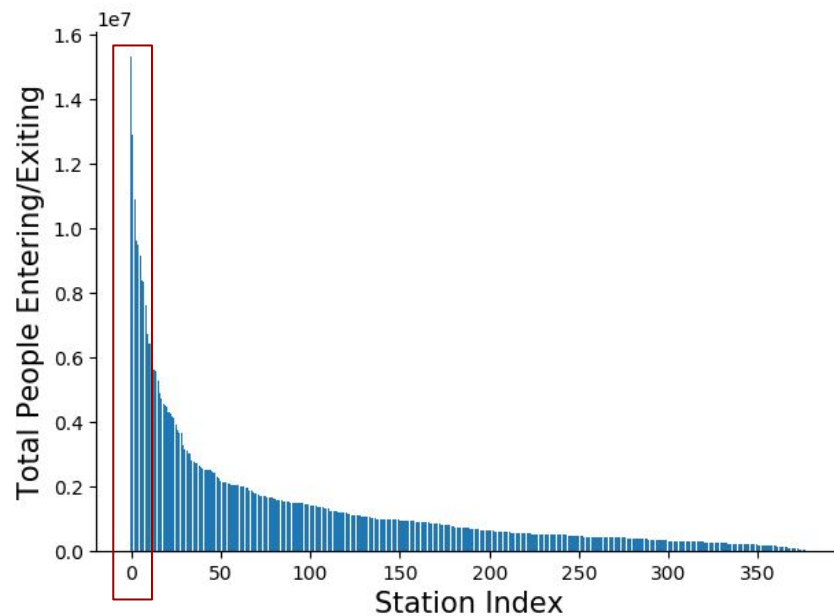
Foot traffic largely skewed toward few stations



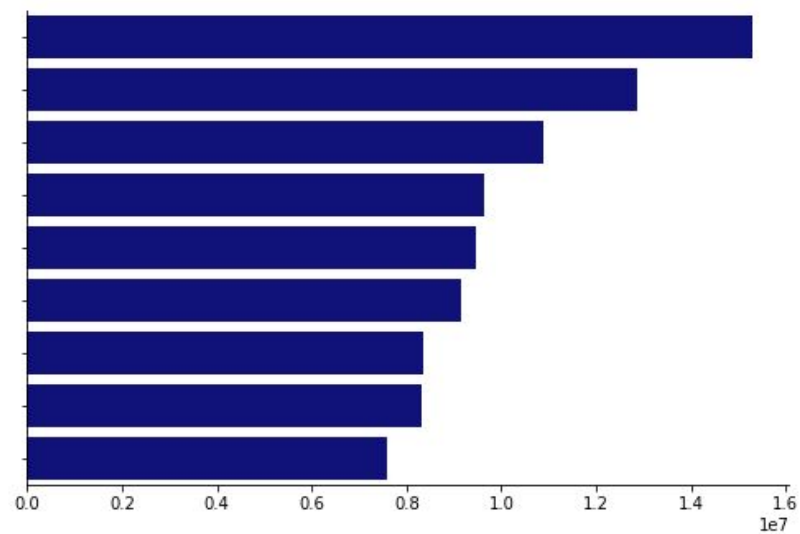
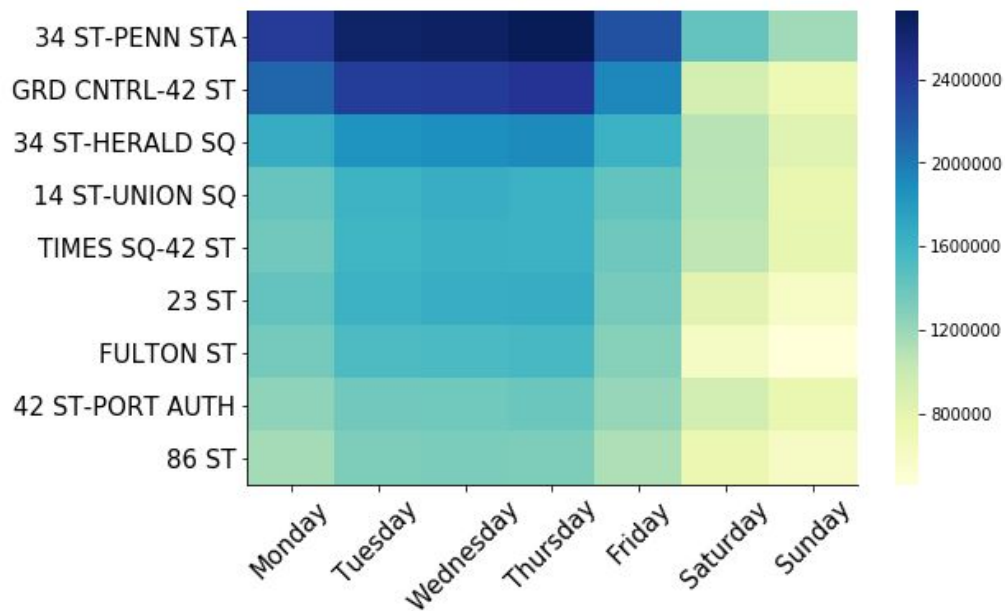
Busiest Stations



Stations Sorted by Total Traffic

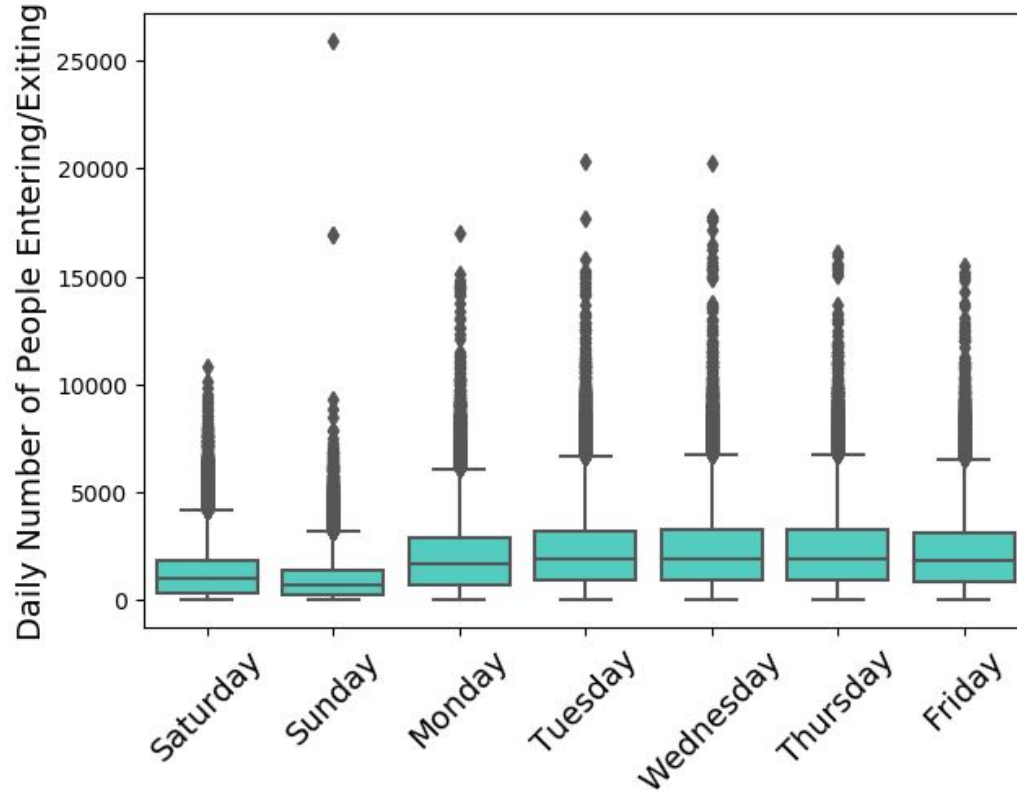


Total Traffic



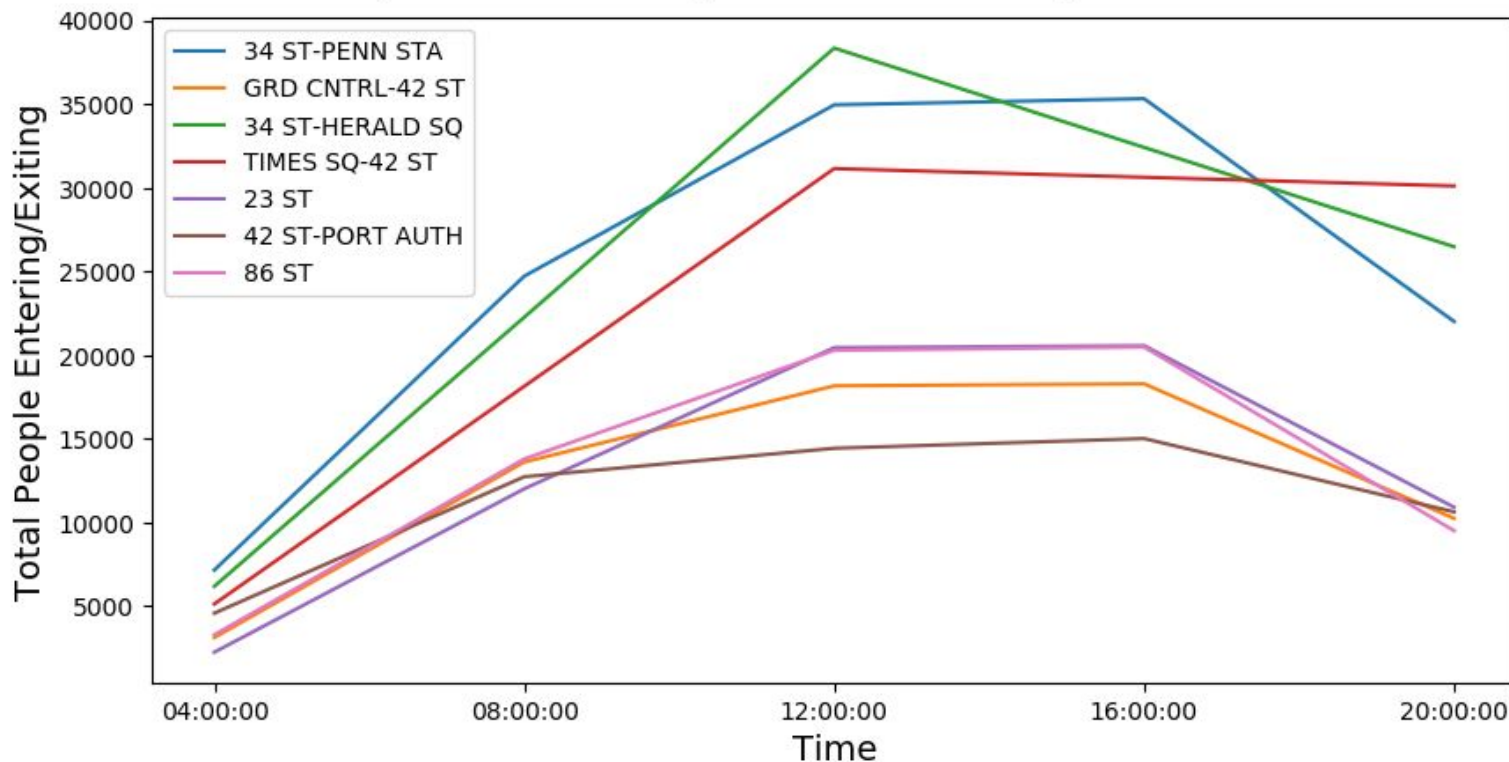
Middle of the week has highest volume of traffic

Boxplot of Daily Traffic by Weekday for All Stations

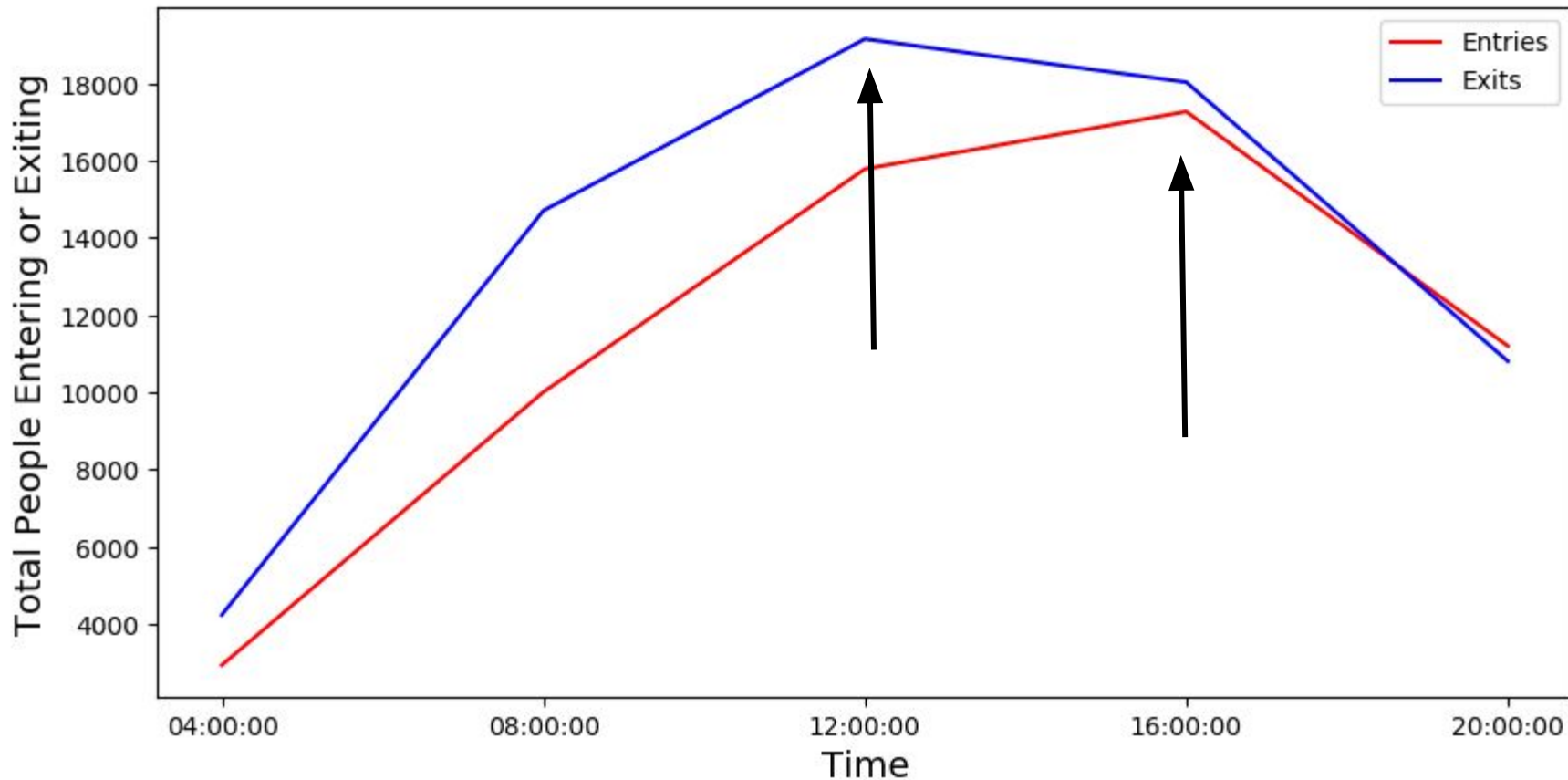


Stations busiest at midday, but entries/exits offset

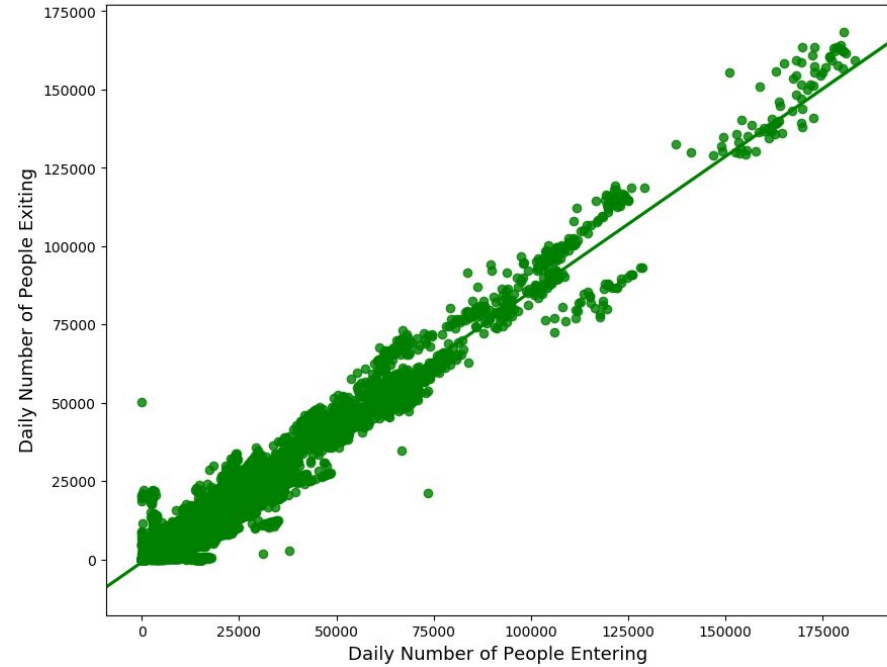
Plot of Daily Total Use by Time for Busy Stations over 1 day



Plot of Total Entries/Exits for Penn Station over 1 day

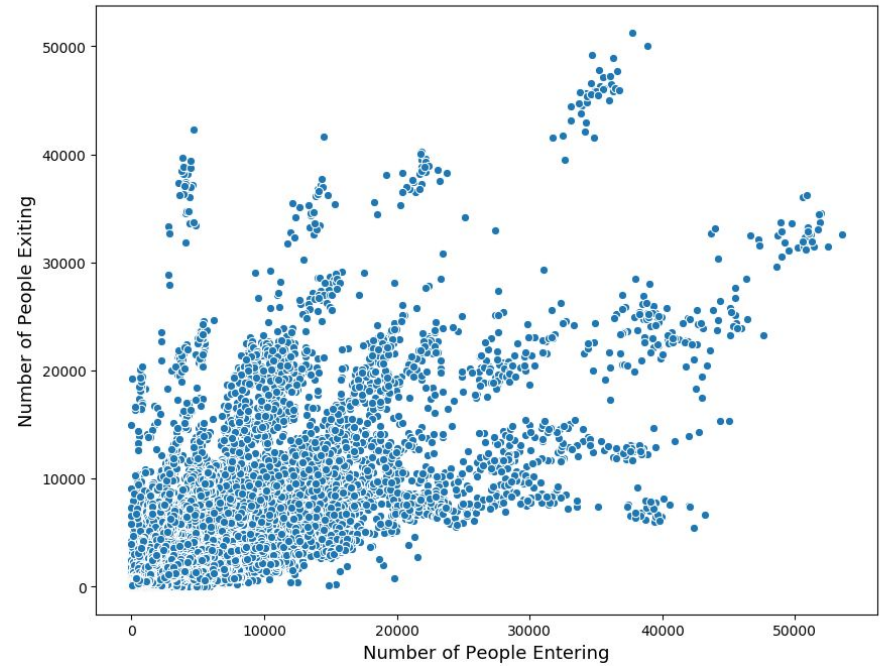


Scatterplot of Daily Traffic Entering vs. Exiting at Each Station



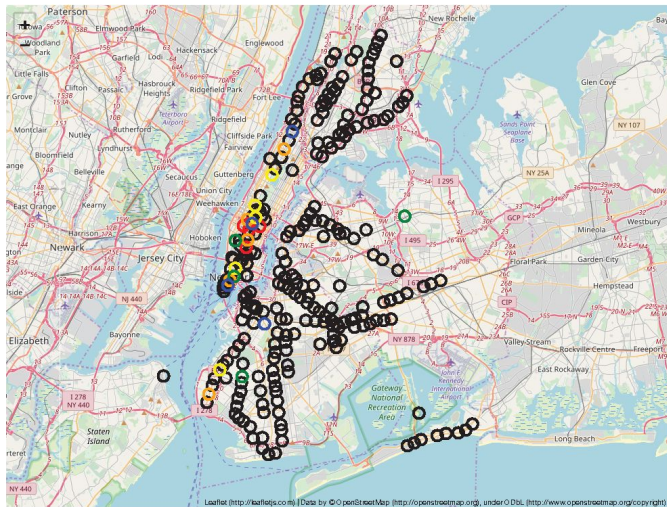
Averaged Over Day

Scatterplot of Hourly Traffic Entering vs. Exiting at Each Station



Averaged Over 4 hours

Traffic concentrated almost exclusively in Manhattan



Recommendations

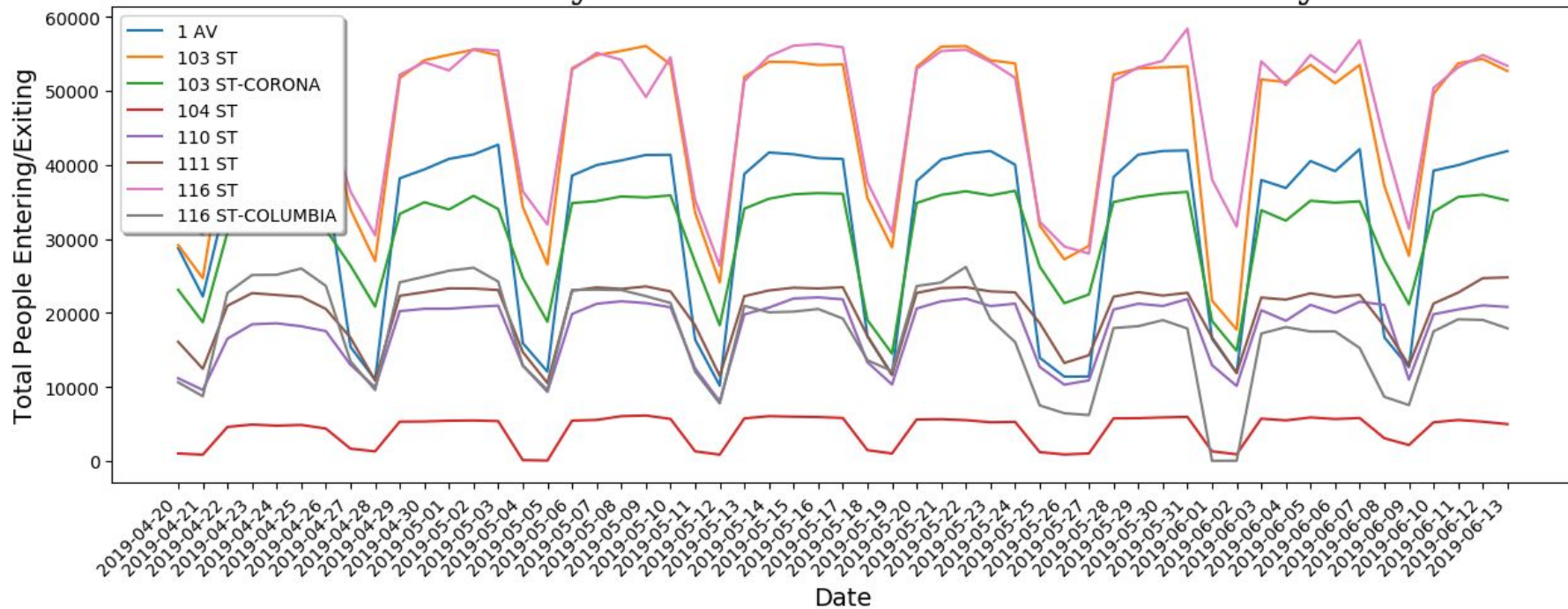
- 34th Street-Penn Station + Grand Central-42nd Street
- Better to have multiple teams at busiest stations than spread out; focus efforts on Manhattan and Bay Ridge areas
- Prioritize Weekdays over Weekends, especially mid-week
- Midday for peak station exit, late afternoon/early evening for peak entry
- Gala likely to attract the most people if held in Manhattan

Future Work

- Consider demographics (gender, wealth)
- Consider limited resources of WomenTechWomenYes
- Group turnstile data by entries/exits of each station
- Cost considerations
- Mobility of street teams

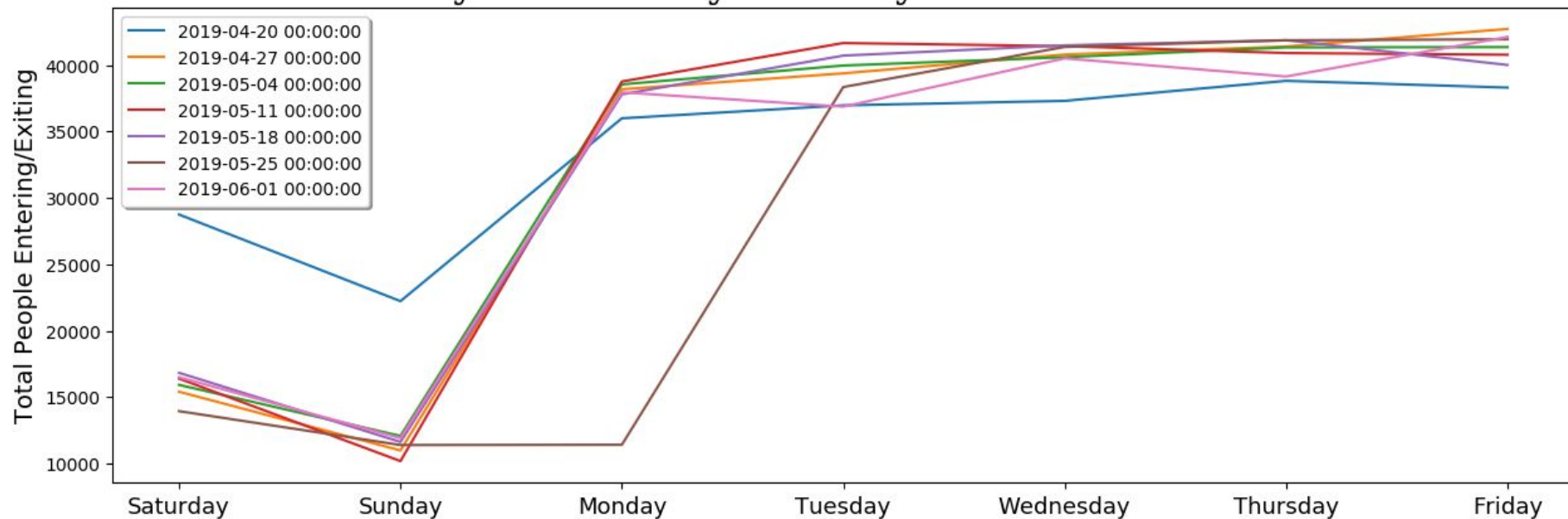
Appendix

Plot of Daily Total Use for 8 Stations Over 55 Days



Appendix

Plot of Daily Total Use by Weekday for 1 Station Over 7 Weeks



Sources

<http://web.mta.info/developers/turnstile.html>