

MARCH 30, 2019

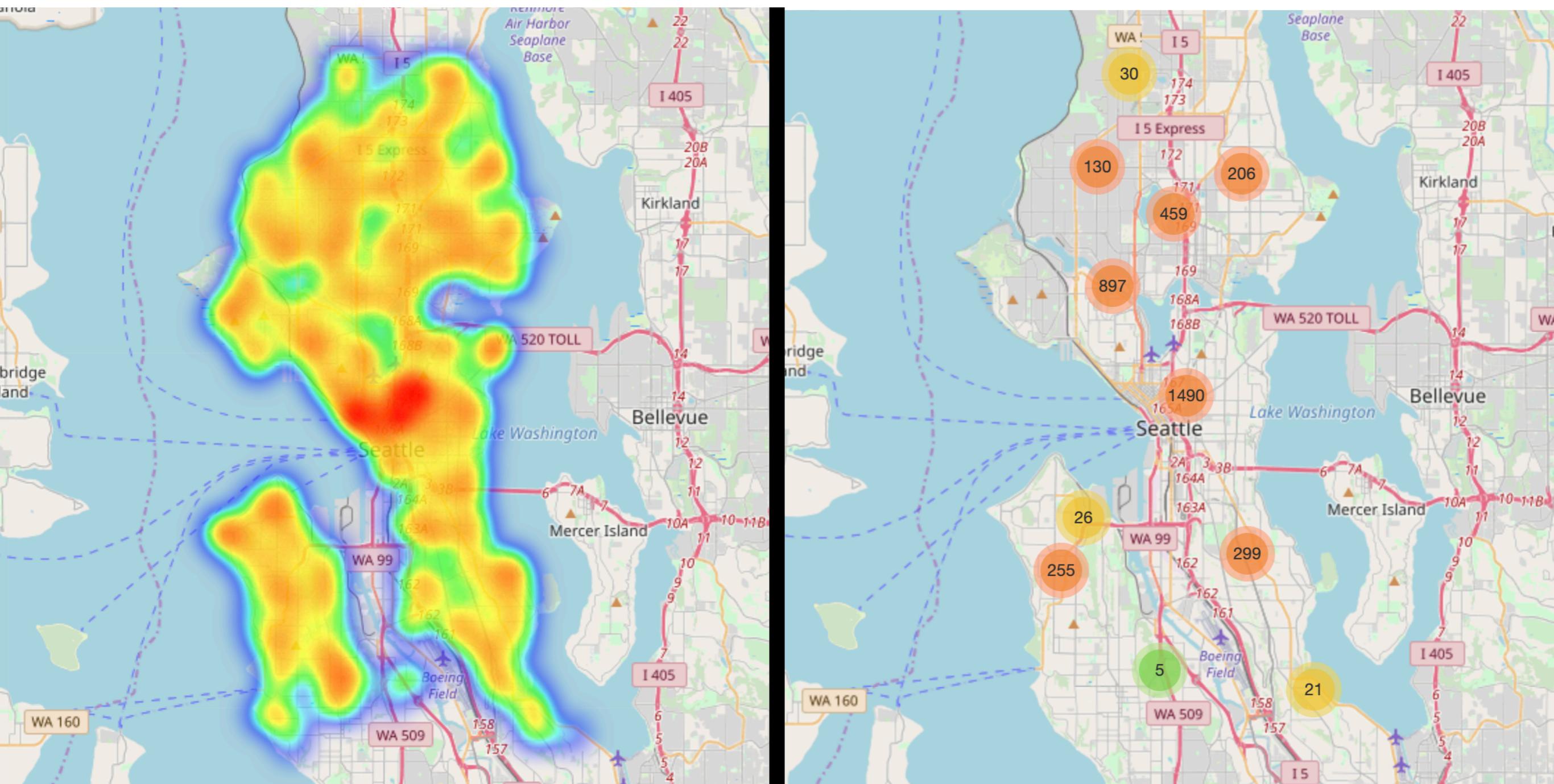
ANDREW WESTER
**FLATIRON DATA SCIENCE
CAPSTONE PROJECT**

SEATTLE, WASHINGTON

- ▶ Airbnb
 - ▶ Reviews, Listings
- ▶ Pronto Cycle Share
 - ▶ Locations, Trips
- ▶ Seattle PD
 - ▶ Crimes Committed

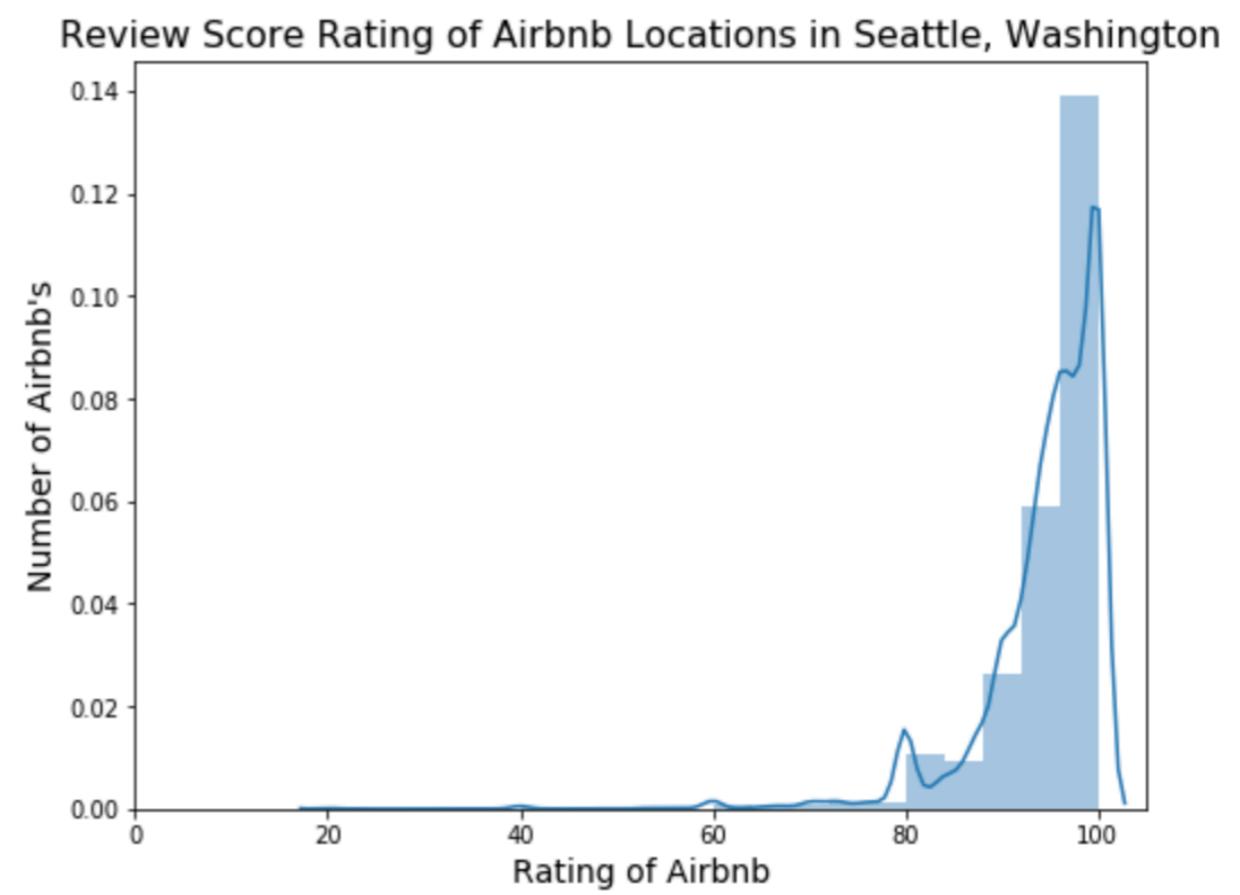
AIRBNB DATA

AIRBNB HEATMAP LOCATIONS VS. AIRBNB CLUSTER LOCATIONS



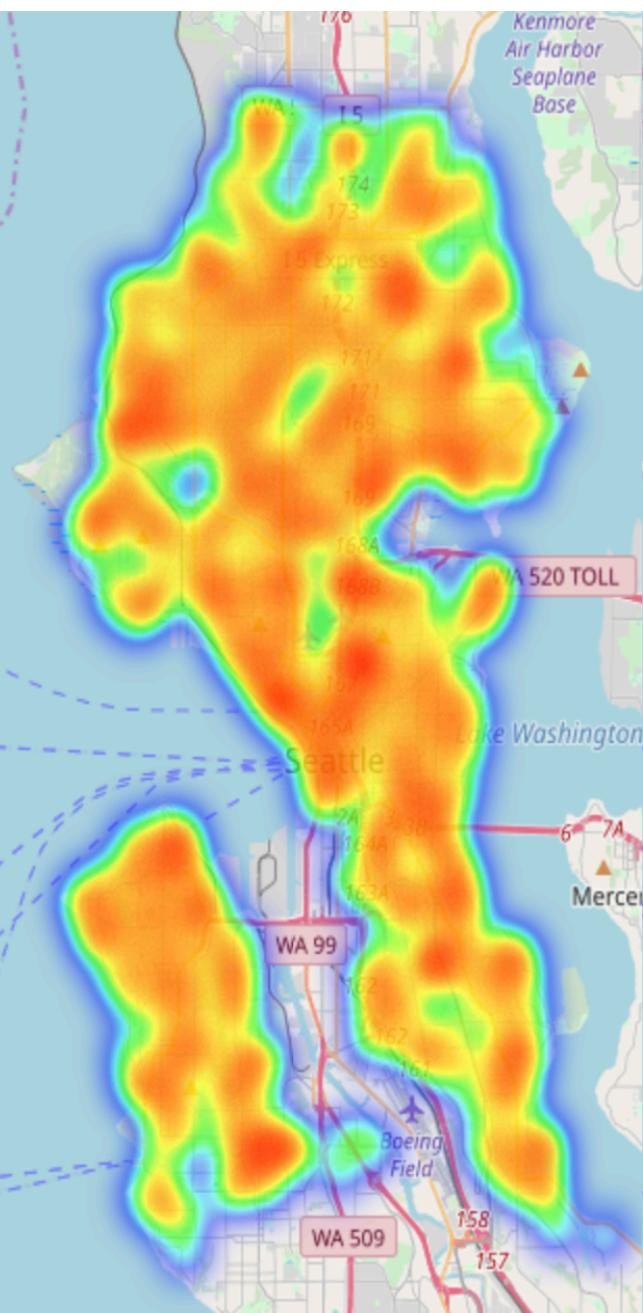
AIRBNB DATA

- ▶ 3,818 Airbnb Rentals listed in 2016
- ▶ Average Listing Price = \$128 (Max - \$1000, Min - \$20)
- ▶ Average Rating = 94.5 (Max - 100, Min - 20)

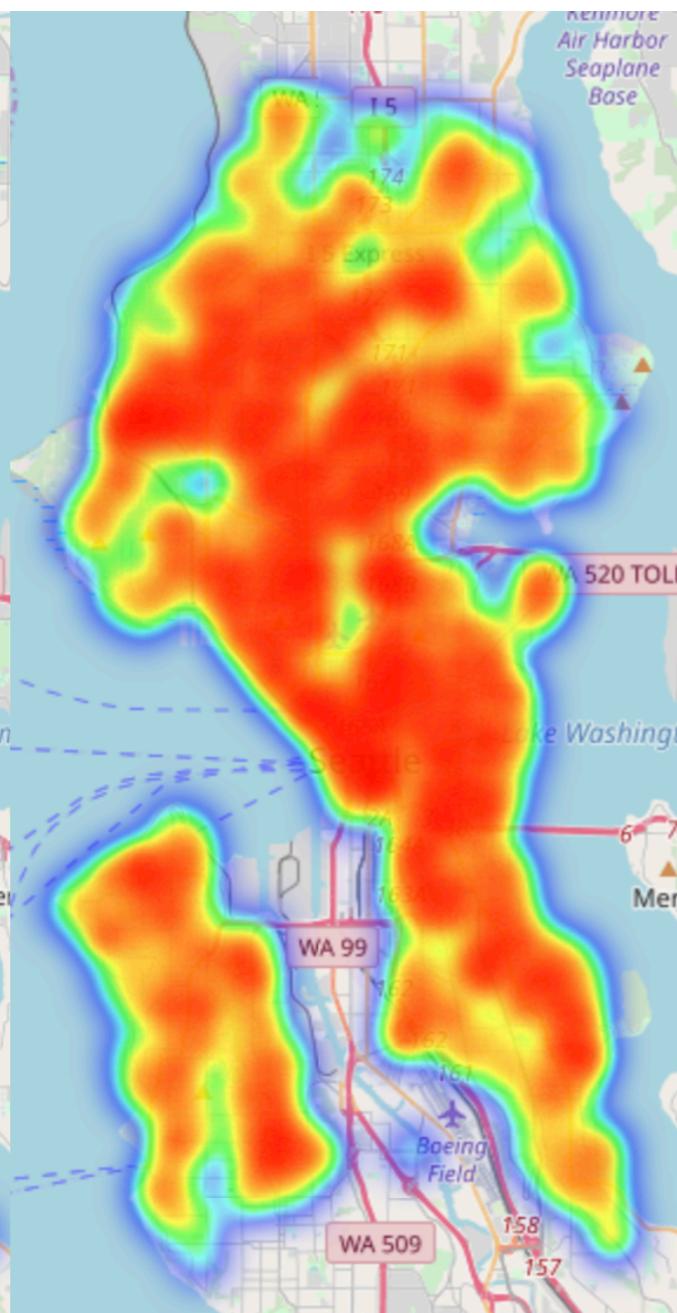


AIRBNB SENTIMENT PLOTTED

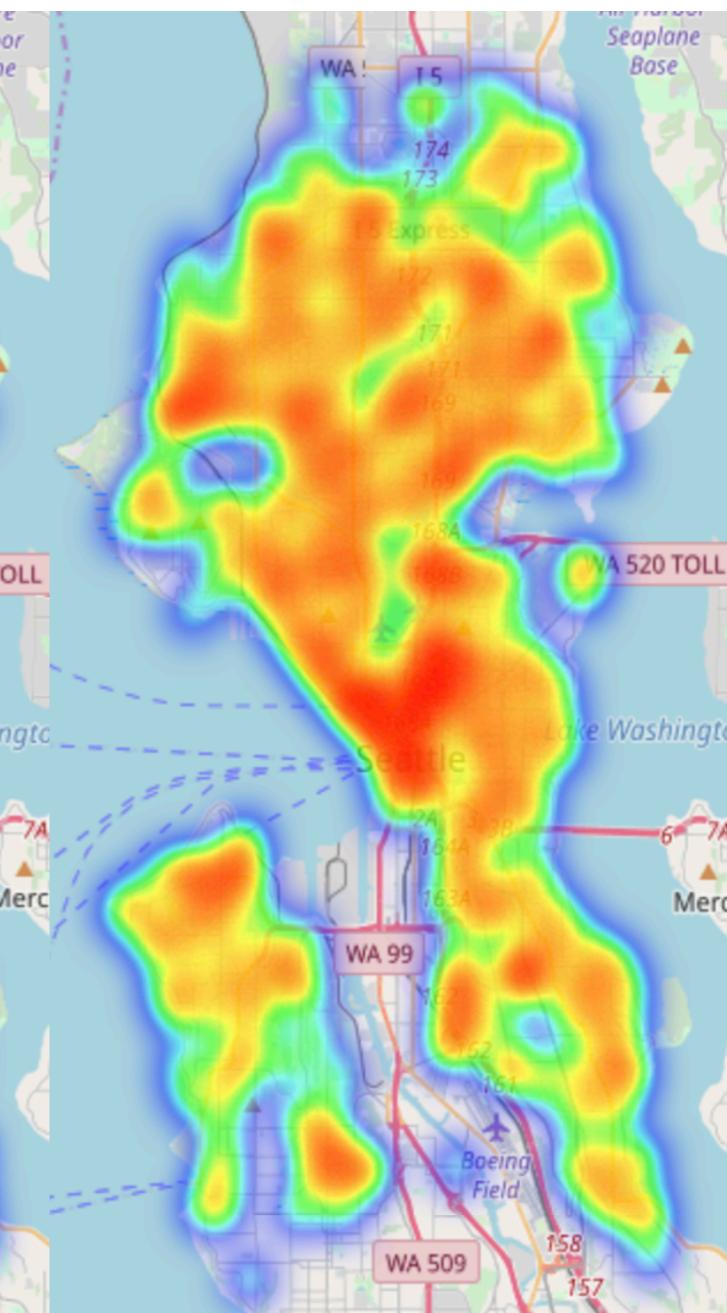
REVIEWED LOCATIONS



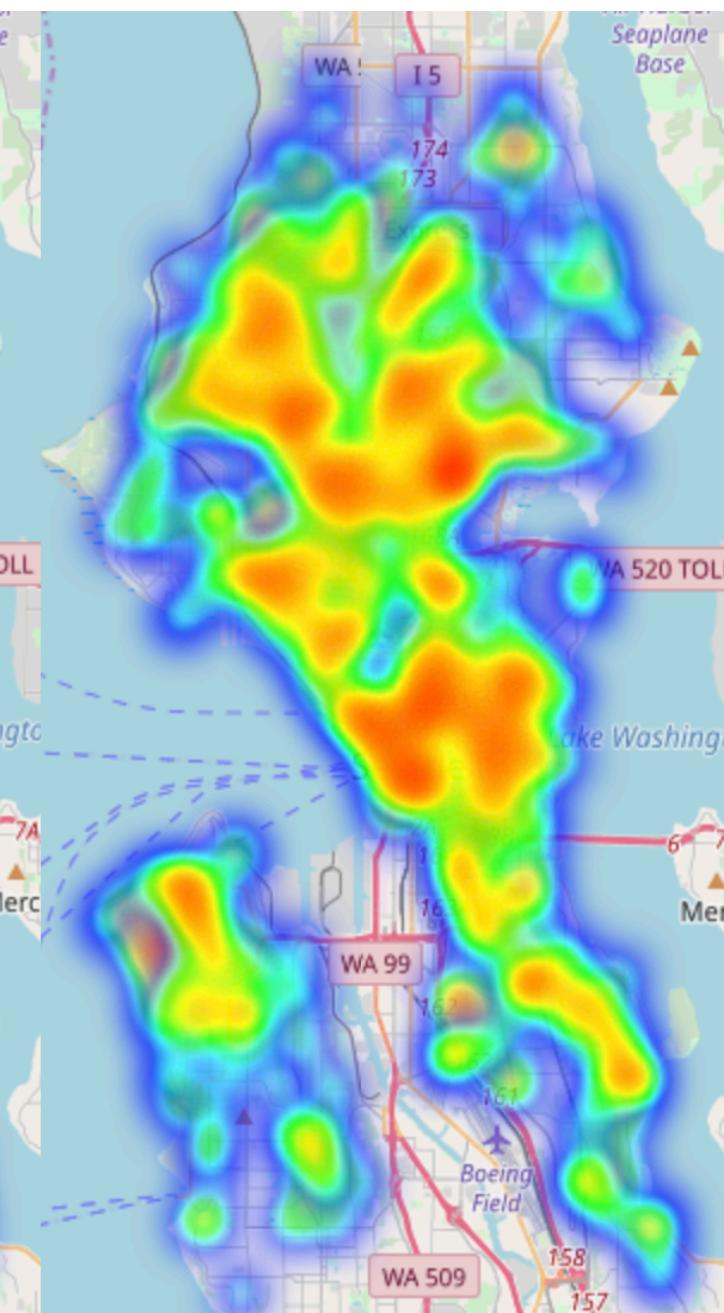
SENTIMENT
 > 0.75



SENTIMENT
 ≤ 0.75



SENTIMENT
NEUTRAL &
NEGATIVE



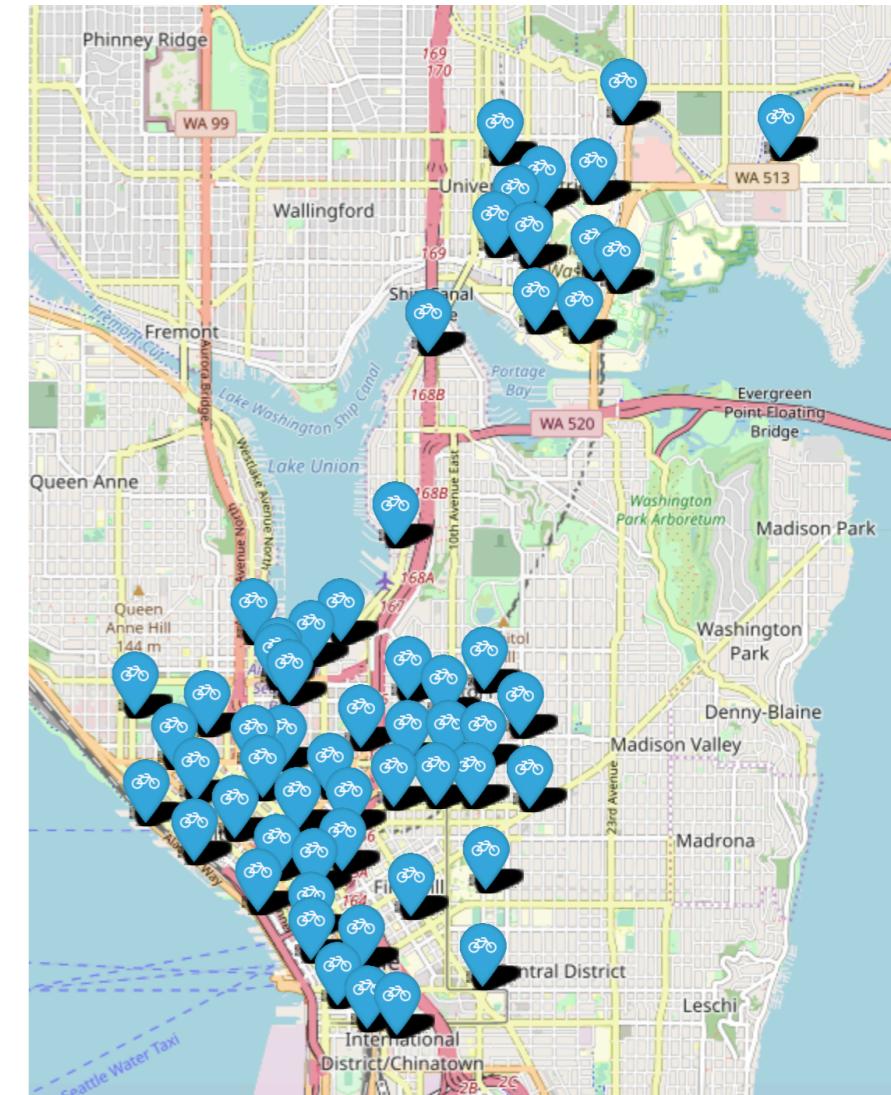
AIRBNB REVIEWS

Gradient Boosting Classifier	PP	PN
TP	398	112
TN	56	389

Classifier	Decision Tree	Random Forest	AdaBoost	Gradient Boost
Accuracy	77.2%	77.7%	82.2%	82.4%
Recall	73.5%	73.3%	87.6%	87.4%
Important Features	Review Scores, Number of Reviews	Review Scores, Number of Reviews	Review Scores Rating, Reviews per Month	Review Scores Rating, Reviews per Month

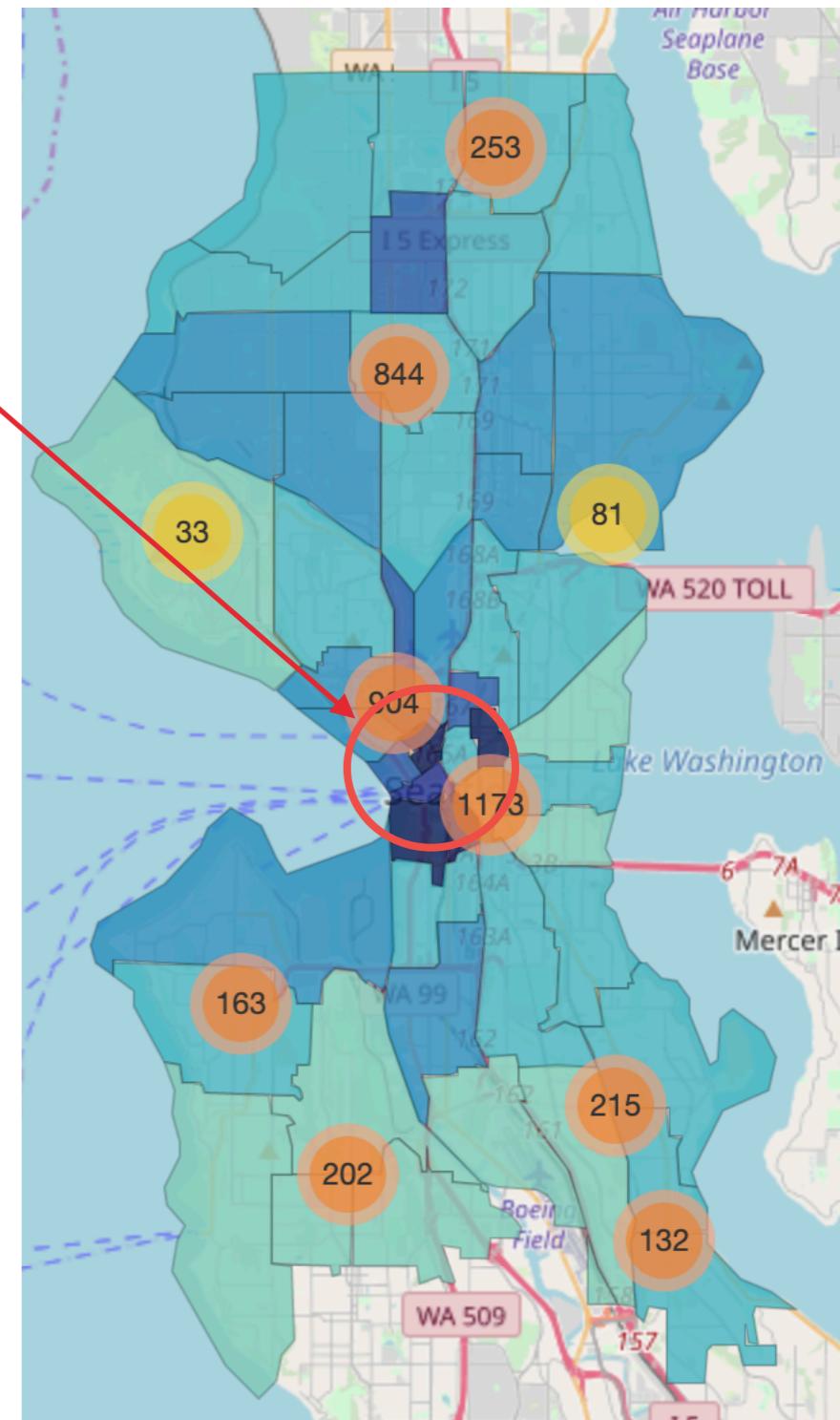
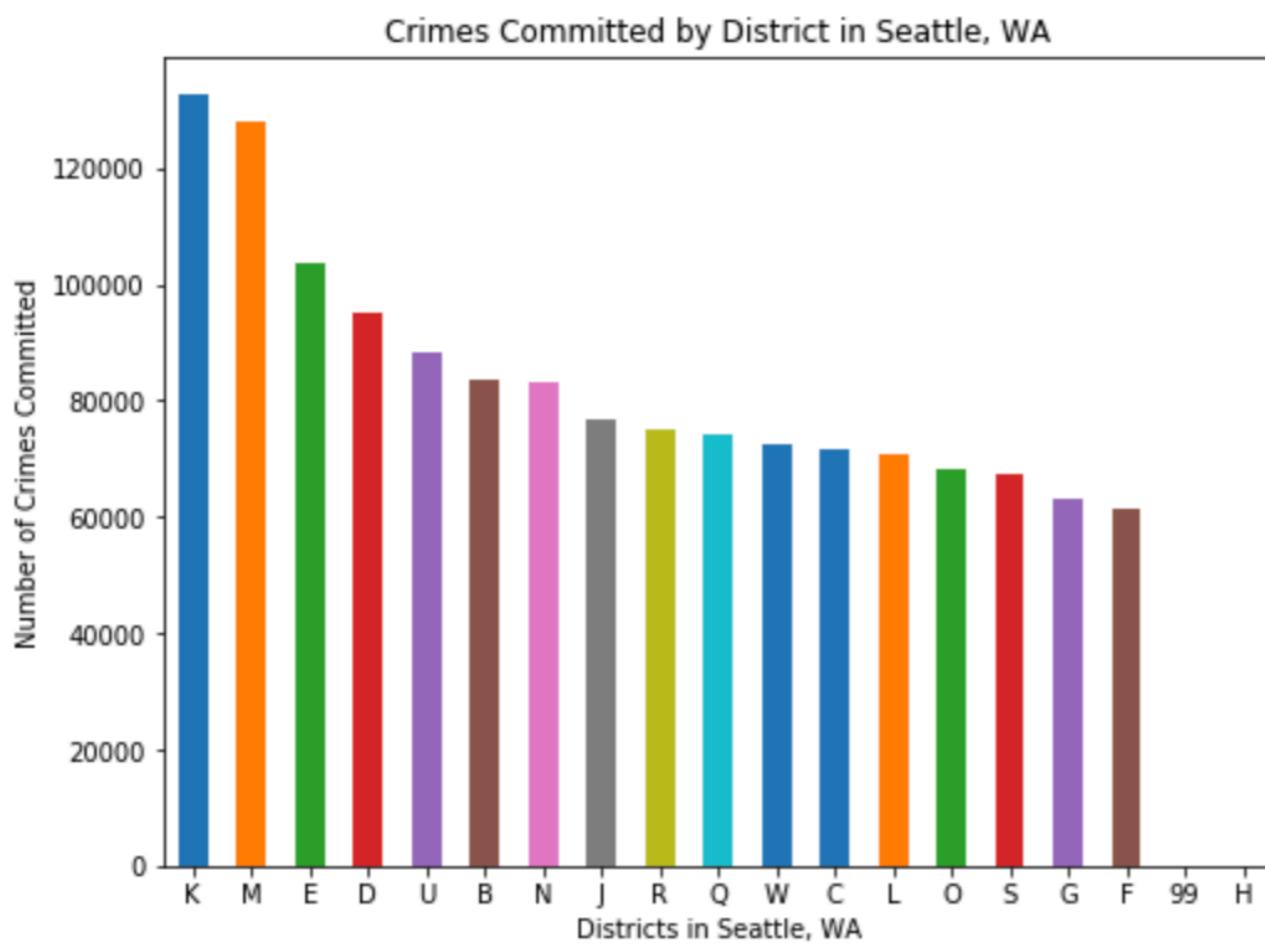
PRONTO CYCLE SHARE

- ▶ 58 Cycle Share Stations
- ▶ Installed from Oct. 2014 to Aug. 2016
- ▶ Stations Averaged 4,945 trips departing
 - ▶ Max - 13,054, Min - 160 (varies by date)

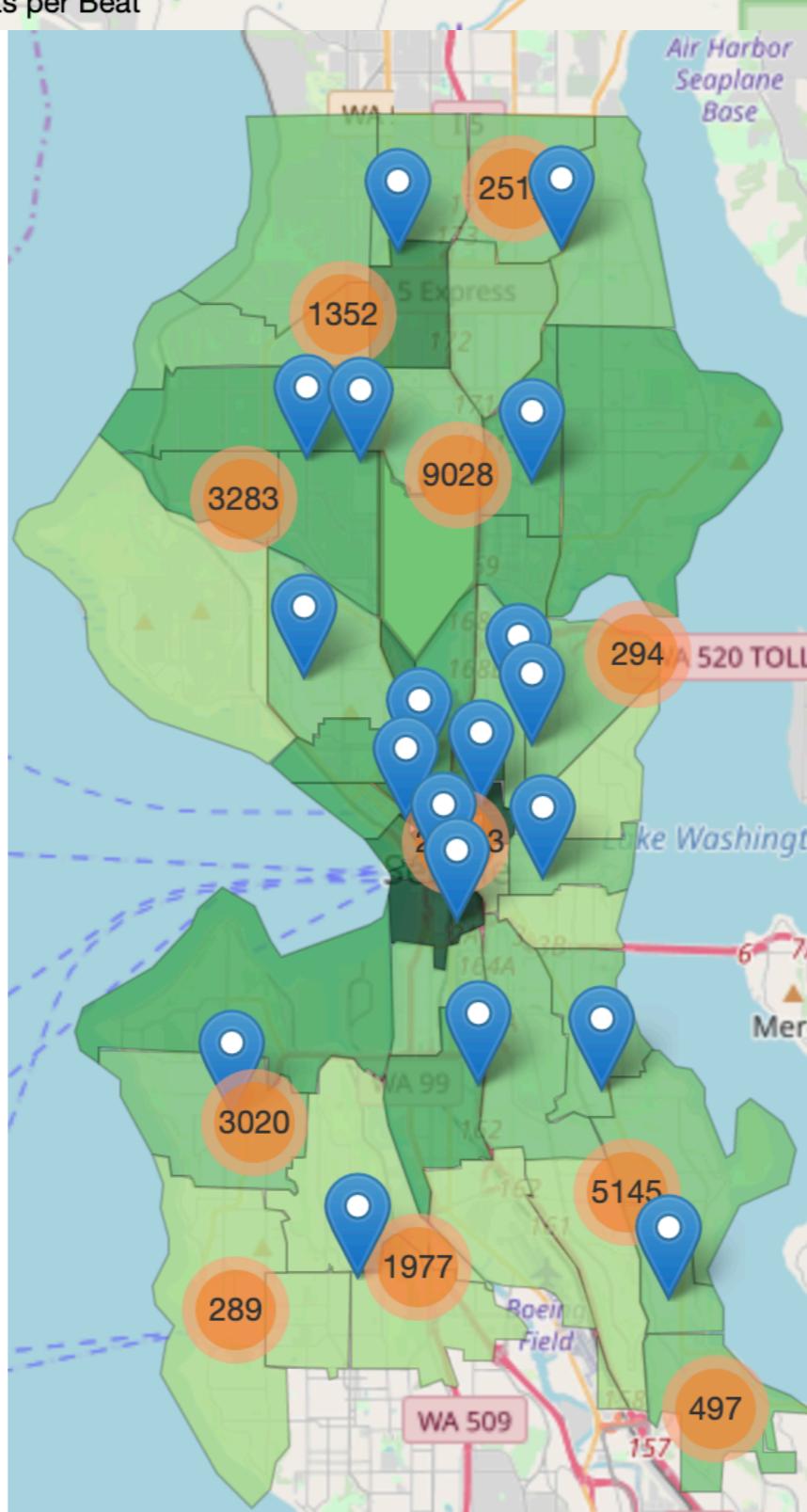
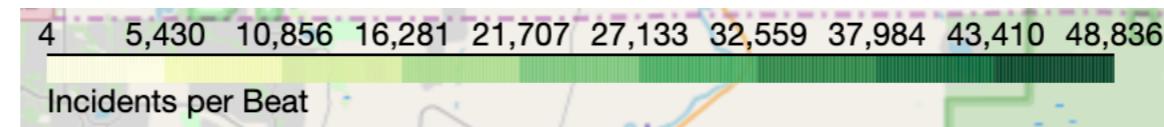


SEATTLE PD

- ▶ Districts' K, M, and E were highest crime with 132,648, 128,093, and 103,773 per district.
- ▶ Districts furthest from the center of Seattle gradually decreased in amount of crime.



SEATTLE PD



CONCLUSION

- ▶ Safest areas furthest from center of Seattle, WA
- ▶ Best rated Airbnb locations were closest to city center
 - ▶ Needs further evaluation to determine reasons
- ▶ Machine learning model predicts with 80% accuracy the likelihood of a location receiving a good review