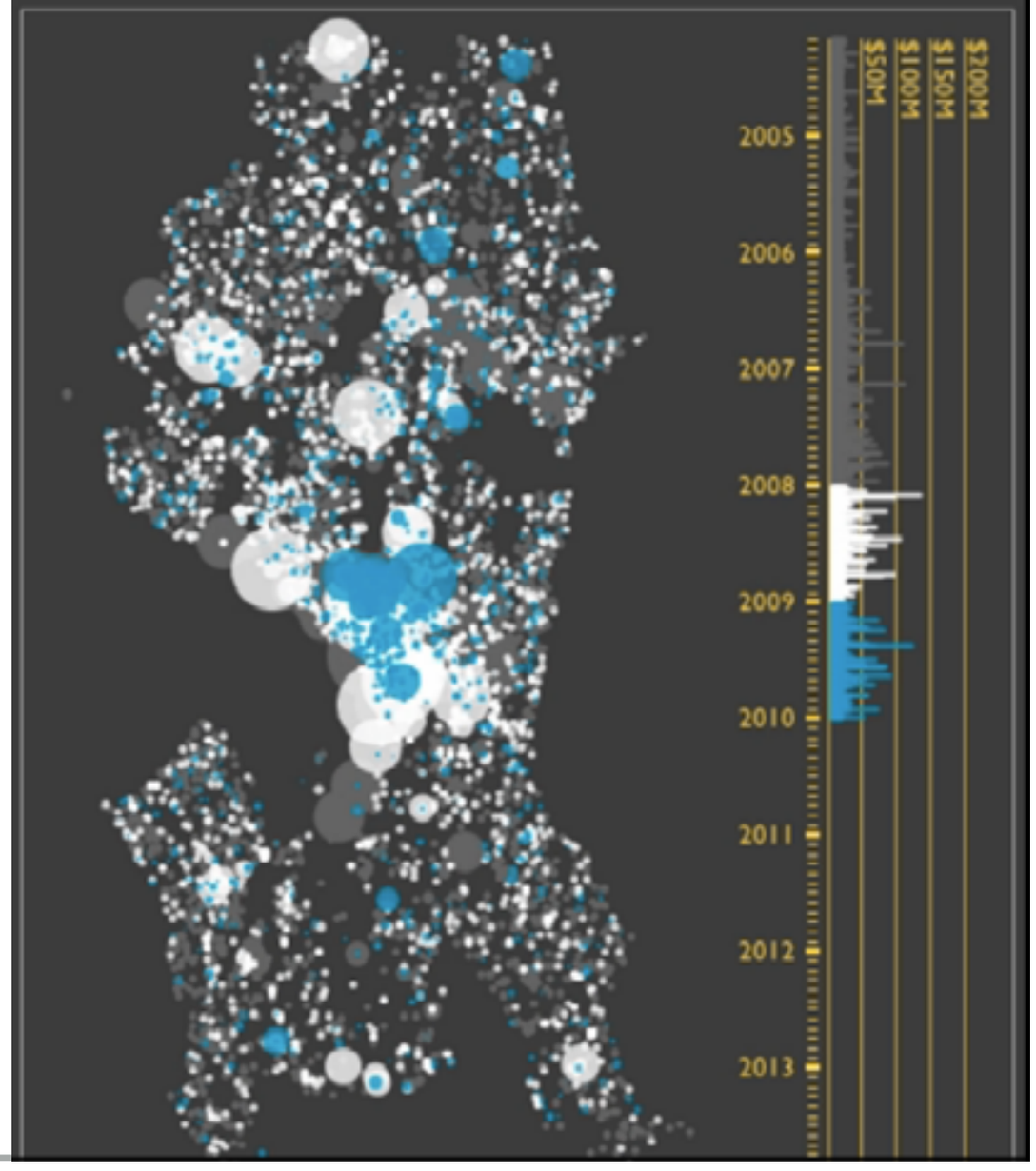
BY KARA CUSHMAN



CRIME IN SEATTLE

THE PROBLEM

CAN WE PREDICT HIGHER CRIMES RATES IN BEATS WITH LIQUOR STORES?

THE SHORT ANSWER:

NOT REALLY

CITY OF SEATTLE OPEN DATA PORTAL

- Seattle Police Department Police Report Incident
  - These incidents are based on initial police reports taken by officers when responding to incidents around the city. The information enters the Records Management System (RMS) and is then transmitted out to data.seattle.gov. This information is published within 6 to 12 hours after the report is filed into the system.
- 2016 Active Business License Data
  - This dataset contains active business license data for the City of Seattle for 2016, as of June 30, 2016.

CRIME DATA

- Rows: Seattle Police Department Police Report Incidents
- Columns:

1. RMS CDW ID
2. General Offense Number
3. Offense Code
4. Offense Type
5. Summary Offense
6. Summarize Offense Description
7. Date Reported
8. Occurred Date or Date Range Start
9. Occurred Date Range End
10. Hundred Block Location
11. District/Sector
12. Zone/Beat
13. Census Tract 2000
14. Longitude
15. Latitude
16. Location
17. Month
18. Year

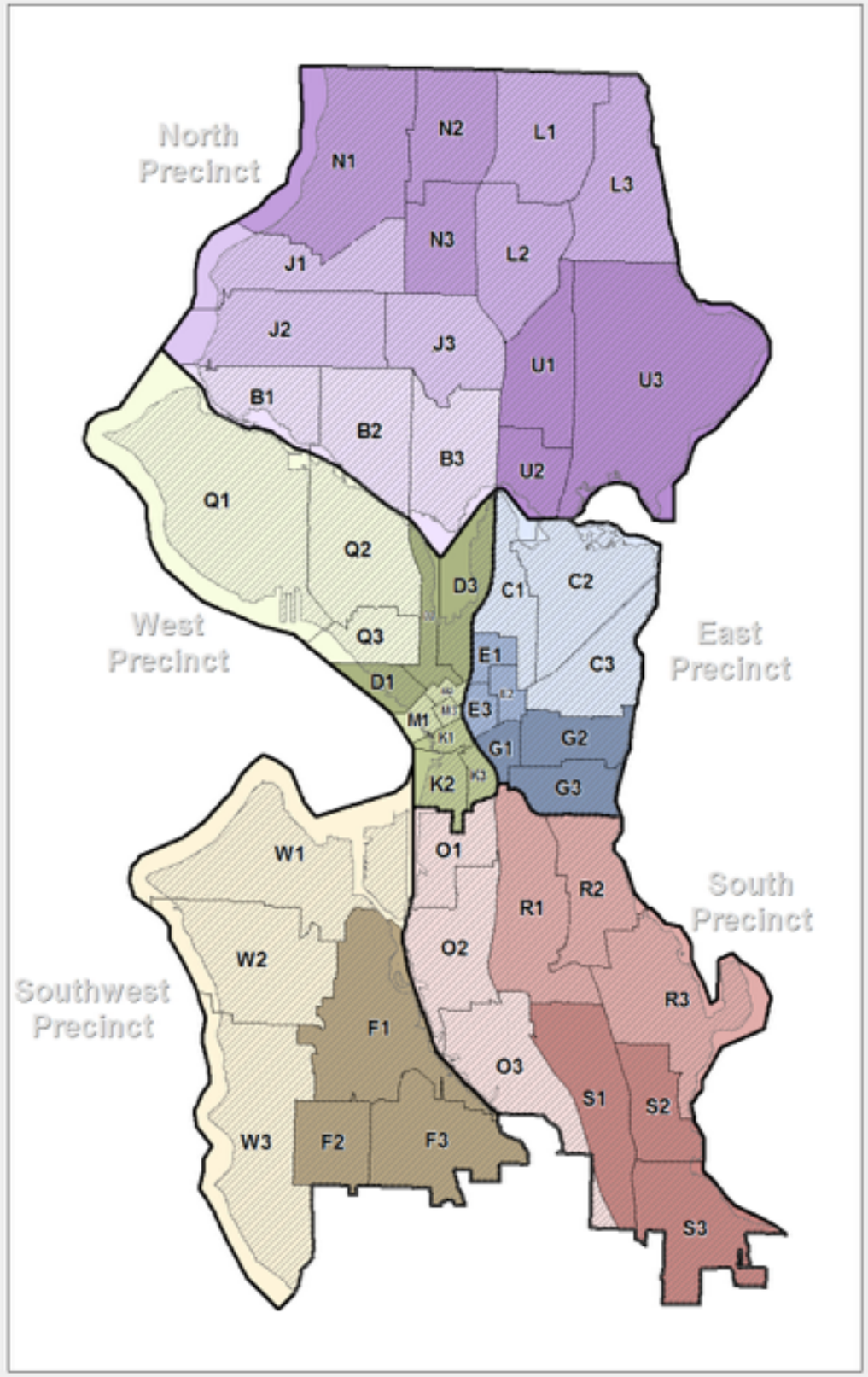
LIQUOR STORE DATA

- Rows: Active Business Licenses
- Columns:

1. Business Legal Name
2. Ownership Type
3. Trade Name
4. NAICS Code
5. NAICS Description
6. License Start Date
7. City, State, Zip

BEATS

- Seattle is divided into five geographic areas.
- Within those areas are the 5 precincts or police stations: North, East, South, West and Southwest.
- Each precinct contains smaller geographic areas called Sectors. There are 17 sectors total in the city.
- Each of these Sectors are divided into between 3 smaller sections called Beats.
- These are the areas that individual patrol officers are assigned responsibility for.

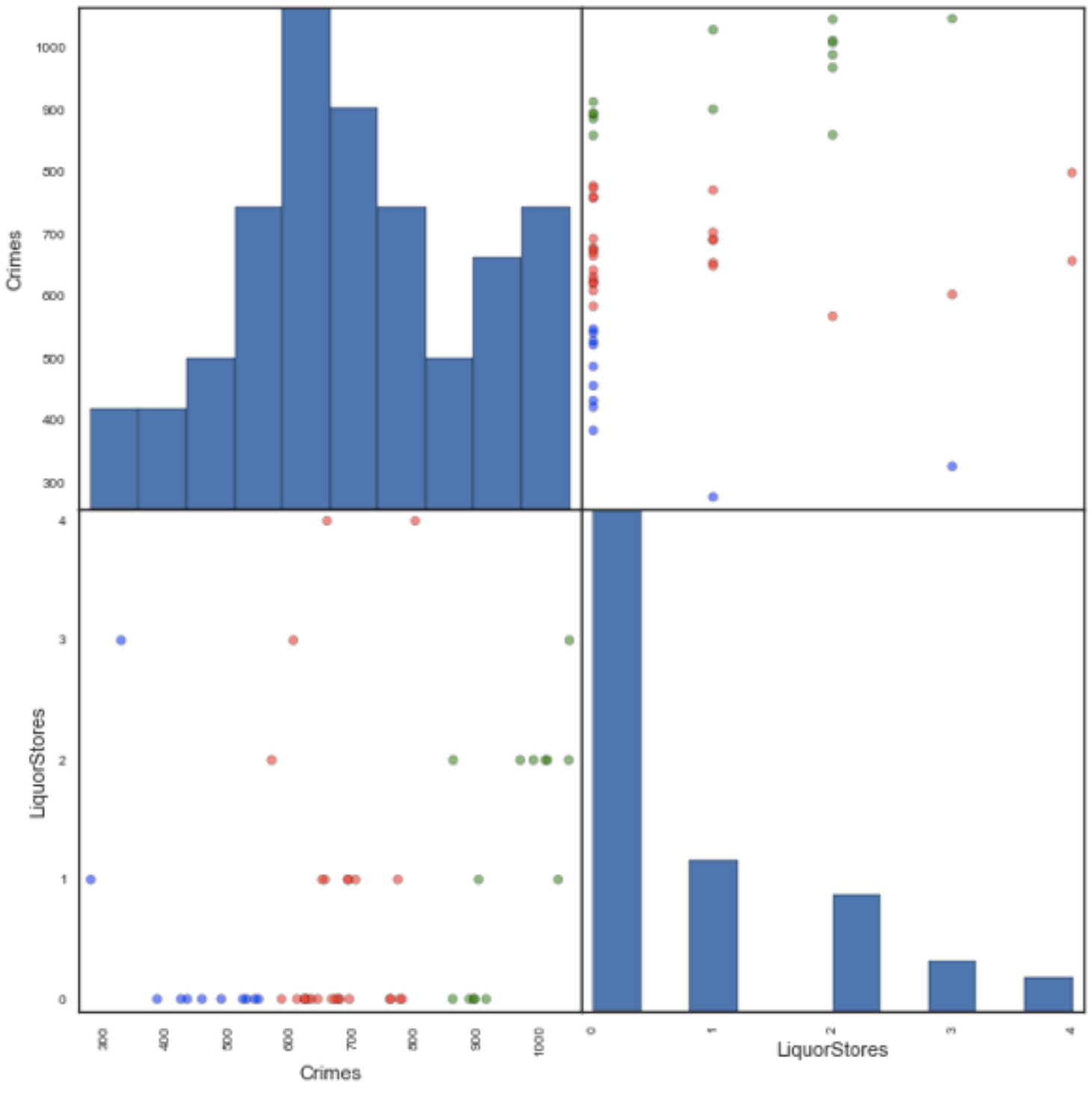


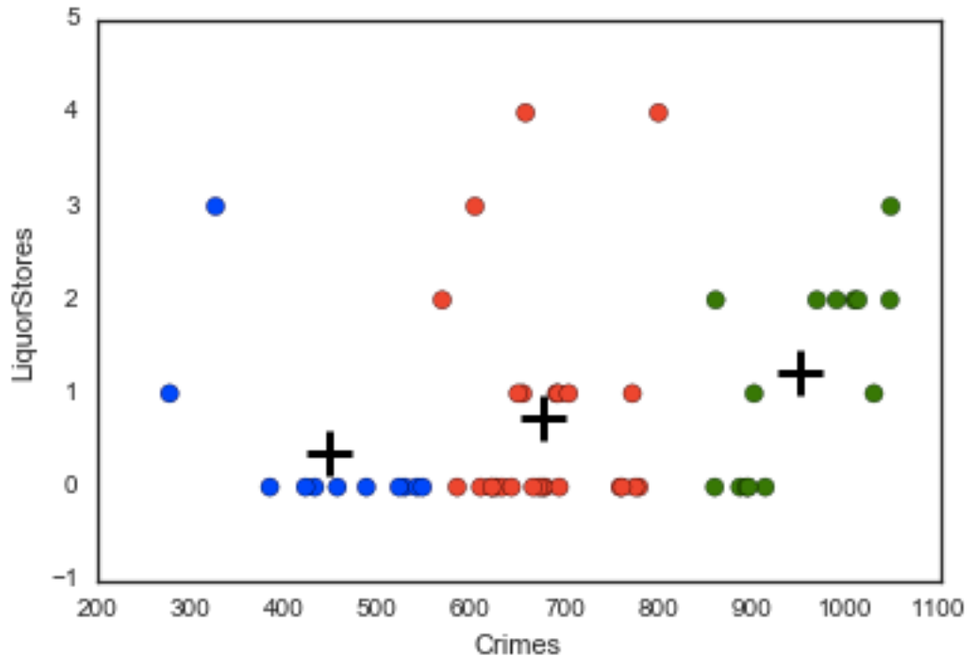
MODELING

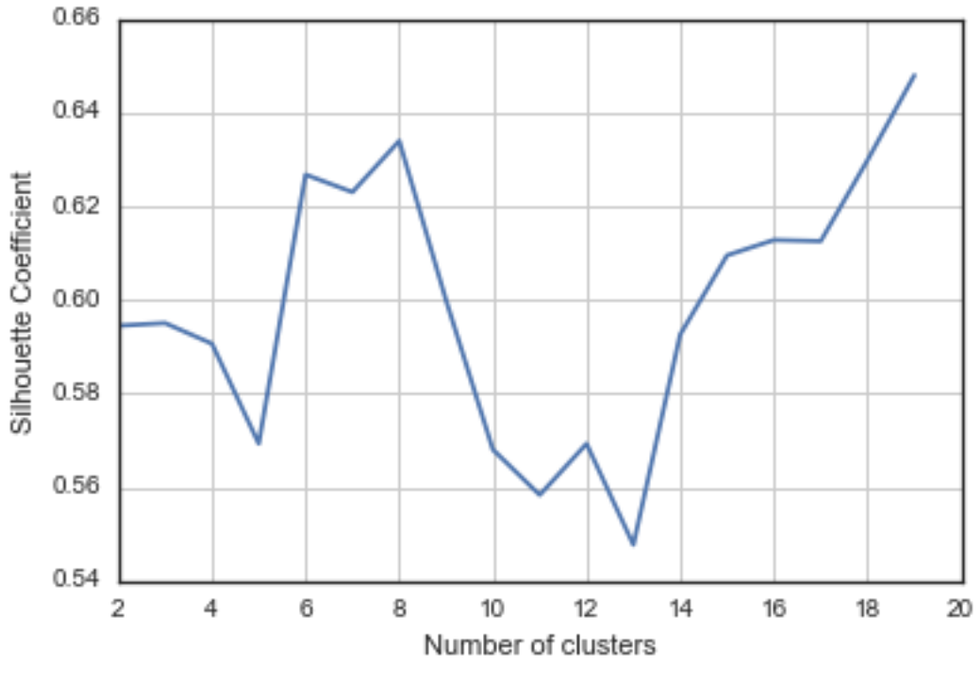
MODELS USED

- Clustering with K Means
- Random Forests

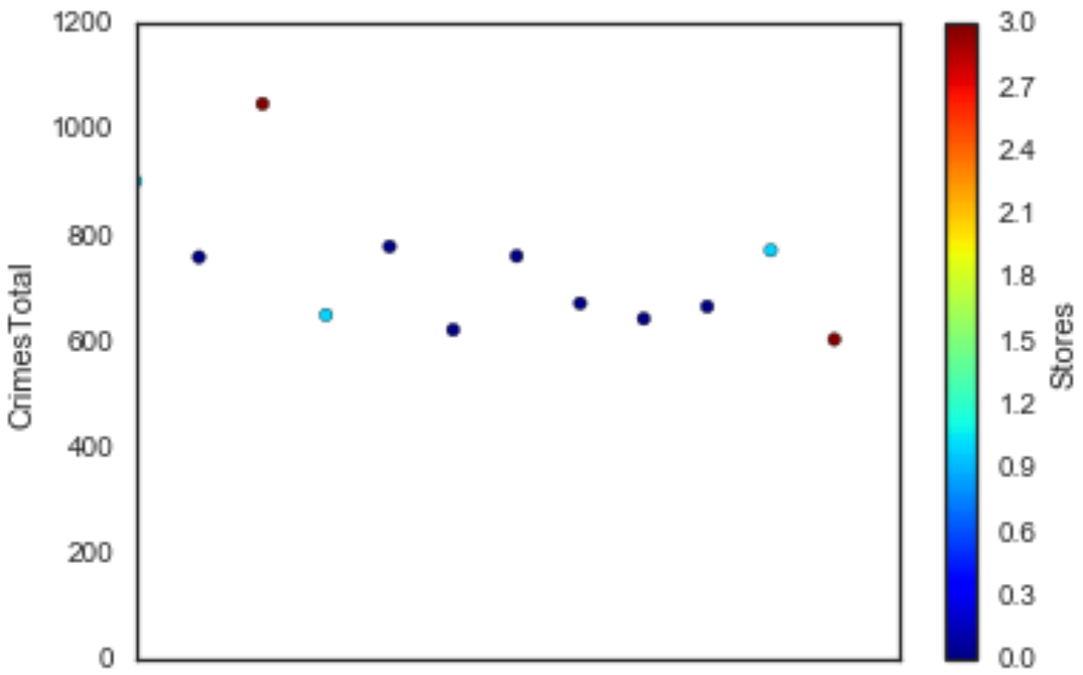
CLUSTERING WITH K MEANS



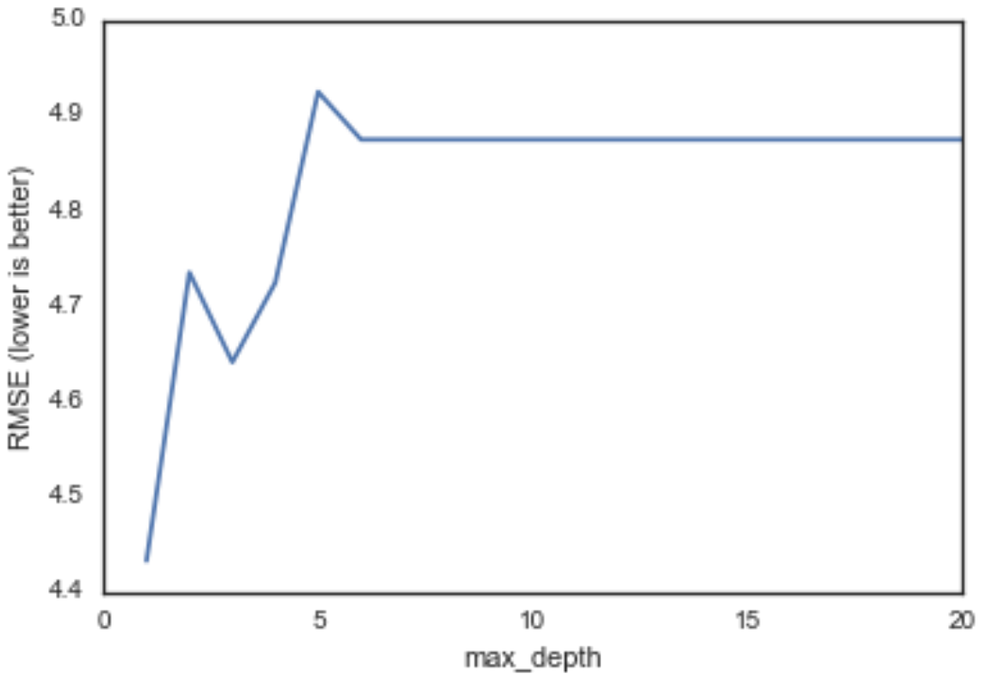




RANDOM FORESTS



	feature	importance
1	BURGLARY	0.597015
5	ROBBERY	0.398010
2	CAR PROWL	0.004975
0	ASSAULT	0.000000
3	DISORDERLY CONDUCT	0.000000
4	PROPERTY DAMAGE	0.000000
6	Stores	0.000000



THE CONCLUSION

KEY TAKEAWAYS

- Lots of features – did not use most of them
- Liquor stores ended up being a very small dataset
- Curious to explore liquor licenses