Hot Spots and Hot Dogs

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The idea and approach and implementation

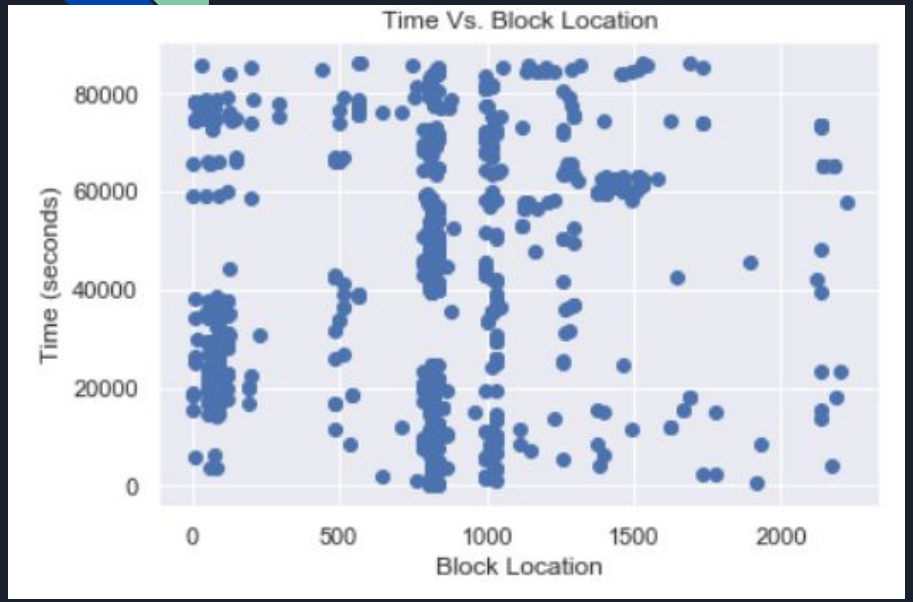
- NYC food vendors receive thousands of violations from the NYCDOH and NYPD
- Every year, the Office of Administrative Tribunals and Hearing release data on the exact location and time every violation was entered
- Identifying the areas in Manhattan using attributes such as Block, Lot, and Time Issued we can manipulate the data
- Using K-cluster density algorithms to find the “hot spots” across Manhattan that receive the most violations, we can find centroids that food vendors would use to avoid the chance of receiving a violation

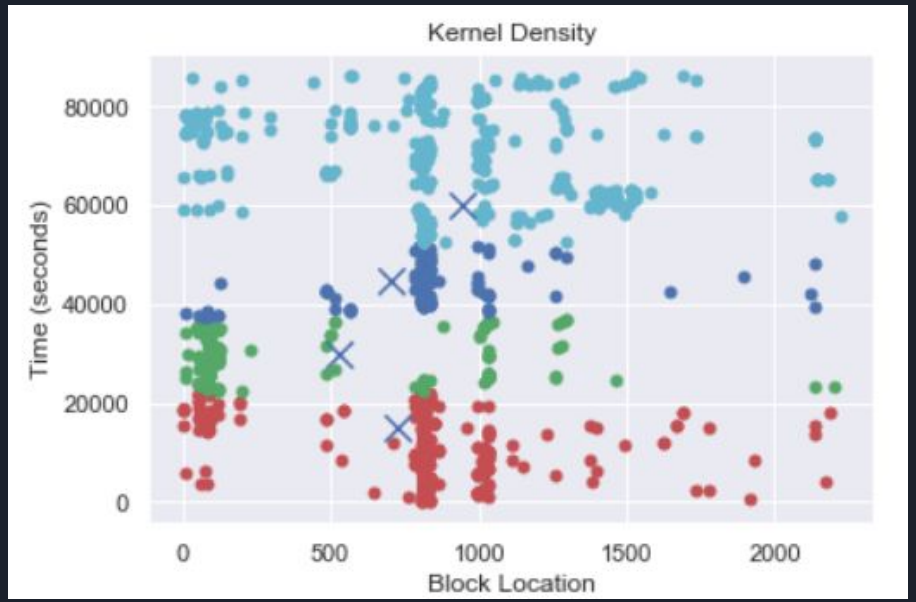
The Raw Data

	Ticket Number	Violation Date	Violation Time	Issuing Agency	Respondent Last Name	Respondent First Name	Balance Due	Violation Location (Borough)	Violation Location (Block No.)	Violation Location (Lot No.)	...	Charge #8: Code Description	Charge #8: Infraction Amount	Charge #9: Code	
0	890016371	07/08/2013	13:27:00	DOH MENTAL HEALTH	GUAMAM NARSISA	NaN	1000.0	MANHATTAN	1532.0	1.0	...	NaN	NaN	NaN	
1	890016380	07/08/2013	13:27:00	DOH MENTAL HEALTH	GUAMAM NARSISA	NaN	1000.0	MANHATTAN	1532.0	1.0	...	NaN	NaN	NaN	
2	890016591	06/10/2013	13:00:00	DOH MENTAL HEALTH	HUSSAIN MOHAMMED	NaN	50.0	MANHATTAN	196.0	9.0	...	NaN	NaN	NaN	
3	890017820	05/02/2013	12:18:00	DOH MENTAL HEALTH	ALMONTE AGUSTINA	NaN	1000.0	MANHATTAN	2139.0	310.0	...	NaN	NaN	NaN	
4	890005876	03/08/2013	11:28:00	DOH MENTAL HEALTH	ADEL ELEISH	NaN	0.0	MANHATTAN	NaN	NaN	...	NaN	NaN	NaN	

5 rows × 78 columns

Kernel Density Estimation Graph





Clustering Centers:

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723.82028986 14860.8
527.60869565 29980.8
702.16231884 44928.
946.62608696 59875.2
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Next steps...

- Create heatmap of violation hotspots over a map of Manhattan
- Do Kernel estimation for all 5 boroughs and multiple years