

Crime in Vancouver



Group Name: “Data Miners”

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Dataset Highlights

- Source: Crime data extracted from the Vancouver Open Data Catalog [1].
- Size: 530,652 records from 2003-01-01 to 2017-07-13.
- Information: Crime occurrence depicted across exact locations of city over the duration of 14 years along with timestamp.

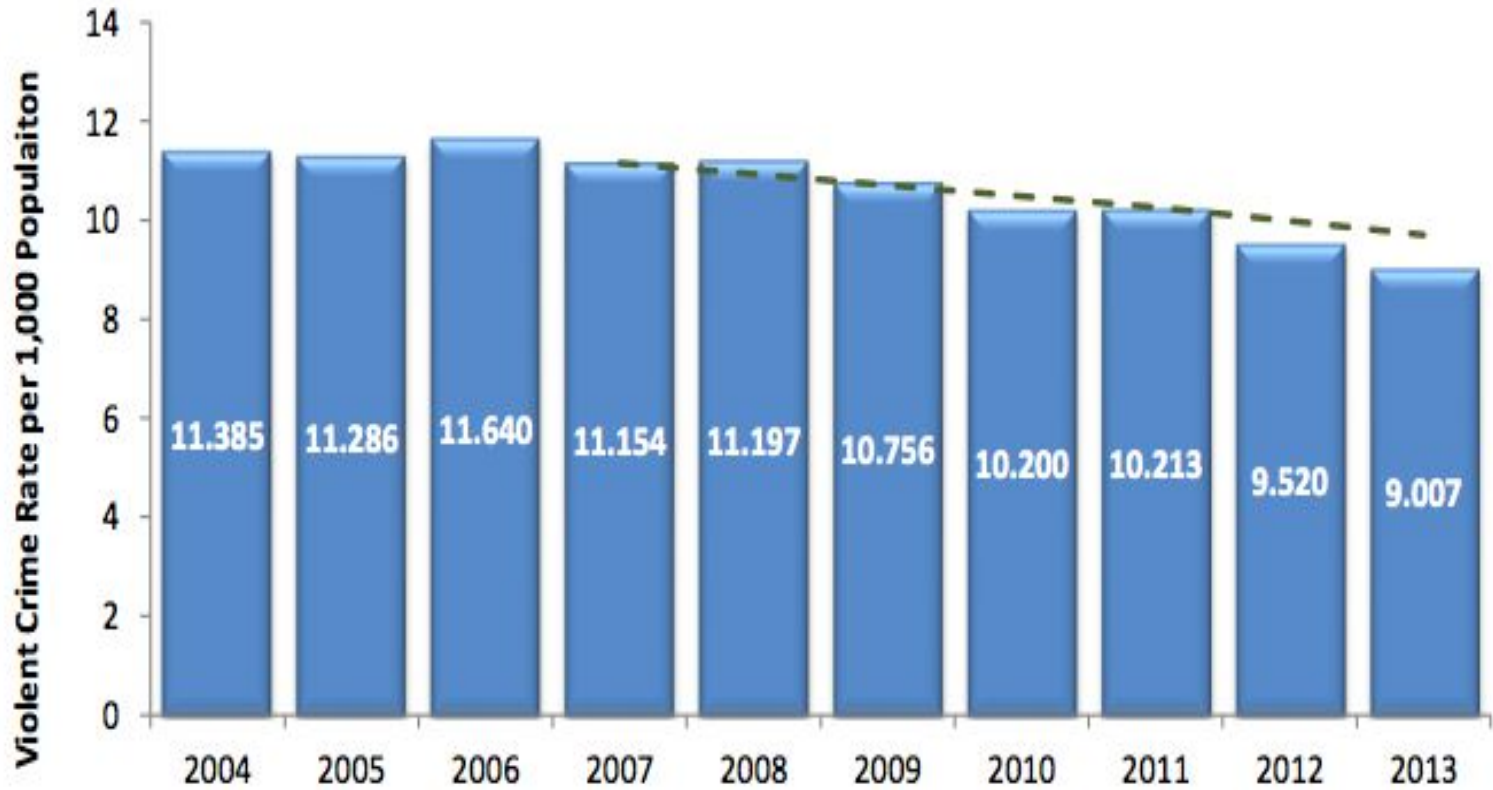
Dataset

TYPE	YEAR	MONTH	DAY	HOUR	MINUTE	HUNDRED_B	NEIGHBOUR	X	Y	Latitude	Longitude
Other Theft	2003	5	12	16	15	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Other Theft	2003	5	7	15	20	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Other Theft	2003	4	23	16	40	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Other Theft	2003	4	20	11	15	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Other Theft	2003	4	12	17	45	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Other Theft	2003	3	26	20	45	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Break and Er	2003	3	10	12	0	63XX WILTS	Kerrisdale	489325.58	5452817.95	49.2280508	-123.14661
Mischief	2003	6	28	4	13	40XX W 19TH	Dunbar-Sout	485903.09	5455883.77	49.2555592	-123.19373
Other Theft	2003	2	16	9	2	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Break and Er	2003	7	9	18	15	18XX E 3RD	Grandview-V	495078.19	5457221.38	49.2677339	-123.06765
Other Theft	2003	1	31	19	45	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376
Mischief	2003	9	27	1	0	40XX W 21ST	Dunbar-Sout	485852.96	5455684.11	49.253762	-123.19441
Break and Er	2003	4	19	18	0	18XX E 3RD	Grandview-V	495093.69	5457230.31	49.2678143	-123.06744
Break and Er	2003	9	24	18	30	18XX E 3RD	Grandview-V	495103.82	5457221.02	49.2677308	-123.0673
Break and Er	2003	11	5	8	12	63XX WINDS	Sunset	493790.48	5452630.9	49.2264298	-123.08528
Break and Er	2003	9	26	2	30	10XX ALBERTA	West End	491067.65	5459114.22	49.2847148	-123.12282
Break and Er	2003	10	21	10	0	18XX E 3RD	Grandview-V	495119.32	5457229.95	49.2678113	-123.06709
Other Theft	2003	1	25	12	30	9XX TERMIN	Strathcona	493906.5	5457452.47	49.269802	-123.08376

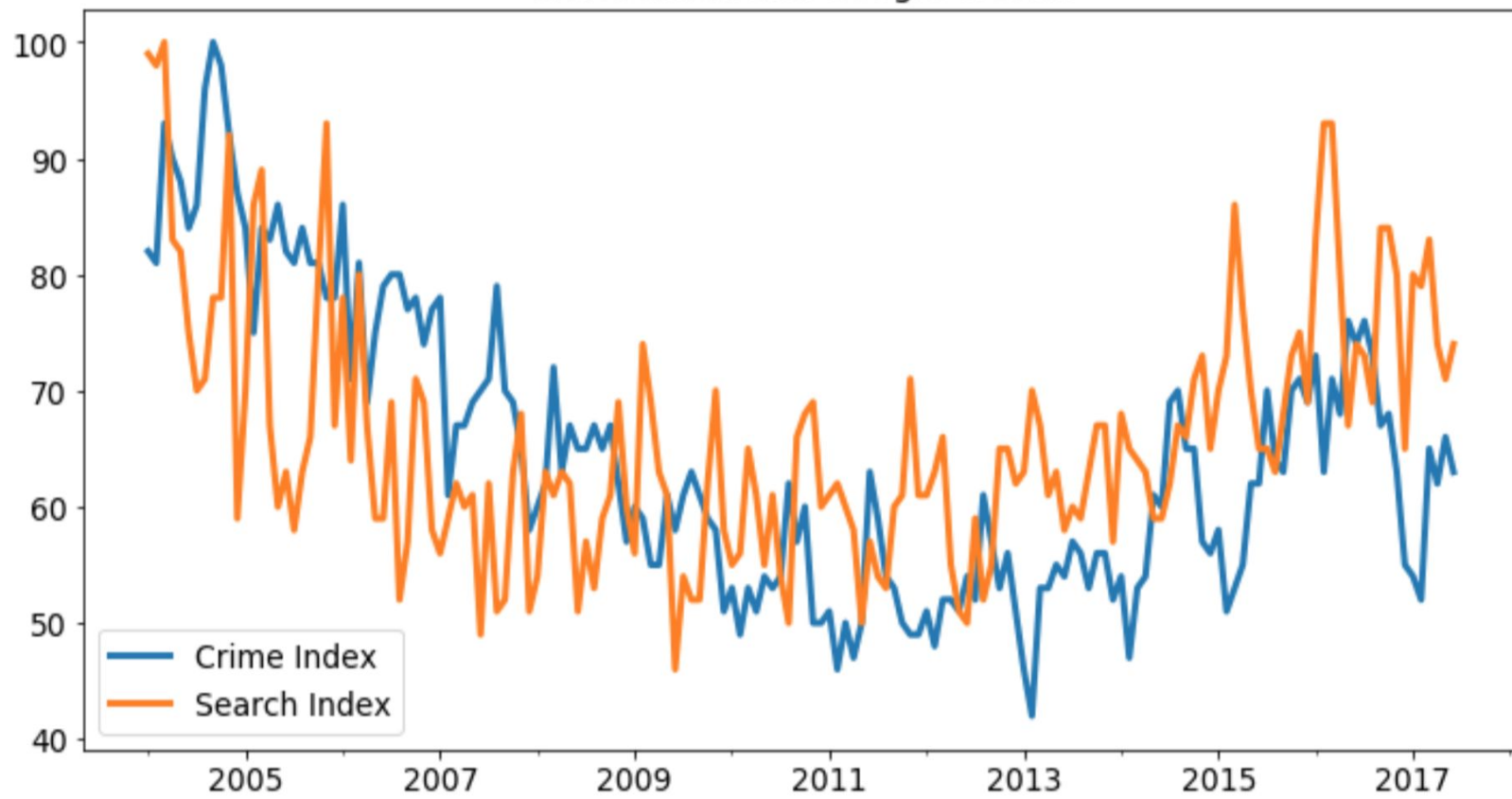


Proposal

- Interactivity graph : selecting crime type, time range, region, etc.
- Animate trends of crime over time
- Forecast high risk zone in vancouver.
- Find correlation between Google searches for crime and total number of crime occurrence.
- Find higher chance of car accidents incidents.
- Likelihood of crime occurrence on holiday.
- Correlation between house price and crime rate.



Crime Index and Google Trends





Approach

- Preprocessing data for insights
- Merging with Sensors data of 2003-17
- Exploratory Data Analysis (EDA) and form an Hypothesis
- Apply ML Algorithms
- Apply Visualization techniques
- Ensemble methods Random Forest, XGBoost and compare with outcome
- Present the insights
- Prove the hypothesis.



Thank You



References

1. Dataset source: <https://www.kaggle.com/wosaku/crime-in-vancouver>