Fight Crimes, Save Lives

Temporal Crime Map Analysis

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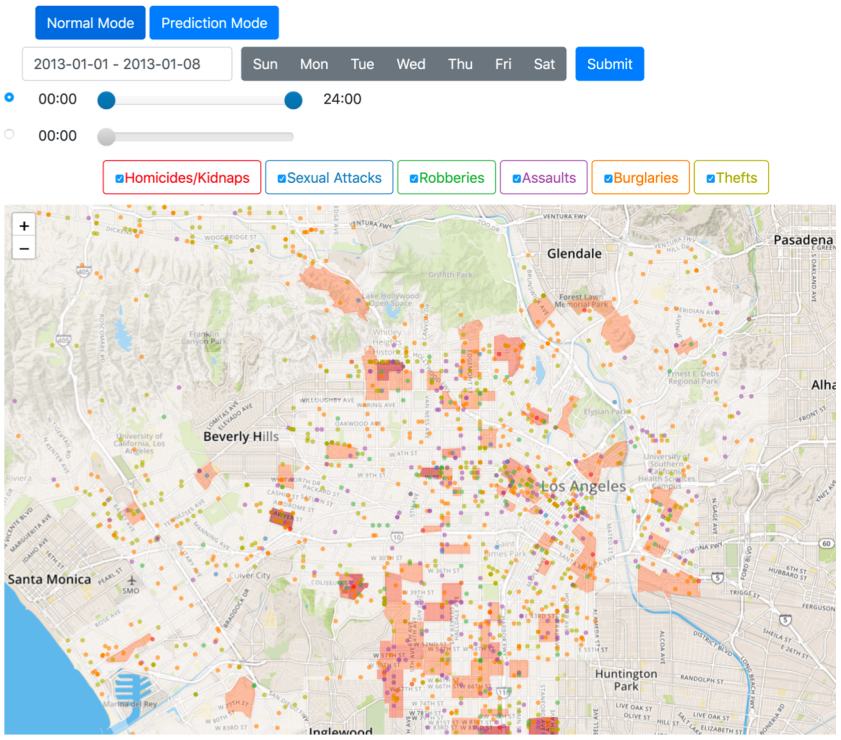
Motivation

To **avoid danger** and **increase Los Angeles safety**, we built an app to help people visualize, analyze, and predict crime with **Temporal and Type Filters**.

Target Users	Their interests
Tourists/Students	Avoid dangerous areas
Police	Plan patrol routes
Residents	Change commuting routes
Policy Makers	Allocate resources appropriately



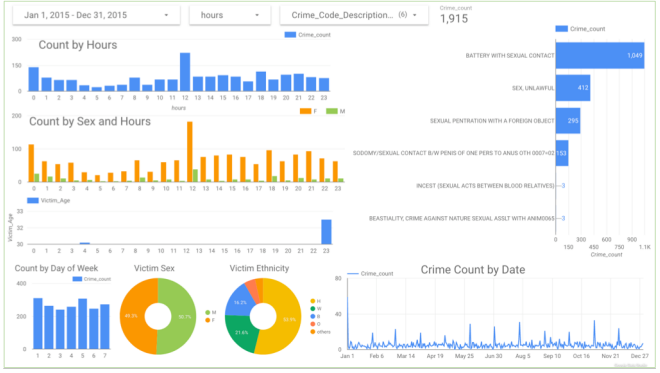
OUR APPROACH

We use **colored dots** to pinpoint crime location and **temporal filters** (hours and day of week) to show crime events on the map. We also incorporate **machine learning algorithm** so that users can **predict crime** in one click. Finally, we use Google Data Studio dashboard to visualize summary of data.

DATA

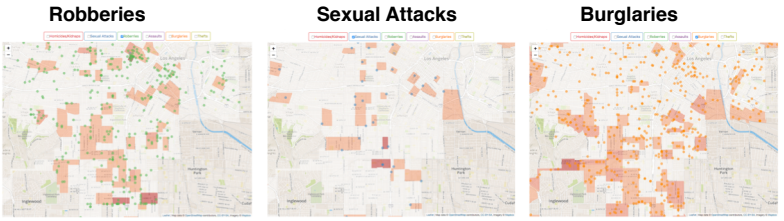
We use **LA Crime Dataset** between 2010 and 2017 from Kaggle. The dataset contains a total of **1.5 Million** criminal events with crime code, description, geo info, victim info, date, and time.

Data Studio Dashboard



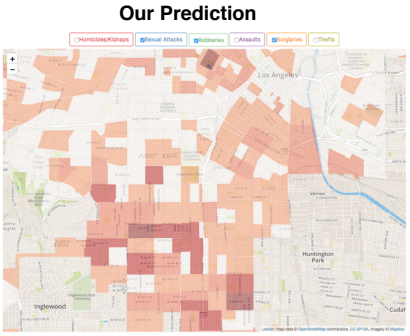
Map with Time Scrolling Bar

Prediction



Model: Linear regression
Metrics: $R^2 = 0.7$
Method:

1. Group events by small regions and train a model per region.
2. Use past 3 month of selected crime events to predict.
3. Predict degree of danger based on selected conditions.



Machine Learning Experiments and Results:

Window length	Label window length	Training R^2 score	Testing R^2 score	Running Time(secs)
90	7	0.39	0.42	9
180	7	0.41	0.44	15
90	30	0.69	0.71	13
180	30	0.72	0.74	17