Tracking San Francisco Smash-and-Grabs

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STATS 418

Background and Data Acquisition

"SMASH-AND-GRABS" / "BIPPING"

LARCENY FROM VEHICLES

BACKGROUND

As of June 2, 2025, there have been 2,137 car break-ins in San Francisco

~14 break-ins per day

Repercussions:

- Reputational damage
- Economic consequences
- Loss of community

OBTAINING DATA

Source: data.sfgov.org

JSON-format, API

Filtered for 2024 Data

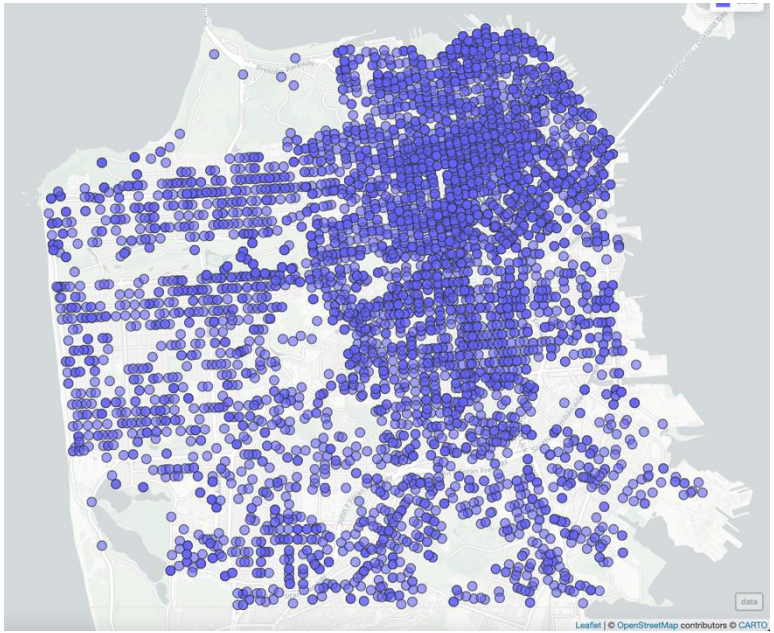
GOAL

Public: Centralized location for analysis

Personal: Automate EDA, point process modeling, and model evaluation for thesis

Leveraging Shiny App for EDA

MAP VIEW TO VIEW CLUSTERING



MOST AFFECTED AREAS

Neighborhoods	# of Reports
Financial District/South Beach	587
North Beach	581
Mission	565
Western Addition	436
Hayes Valley	390

Intersections	# of Reports
BAY ST \ THE EMBARCADERO	69
AMADOR ST \ ILLINOIS ST	67
LEAVENWORTH ST \ LOMBARD ST	62
JACKSON ST \ KEARNY ST	59
BAY ST \ MASON ST	46

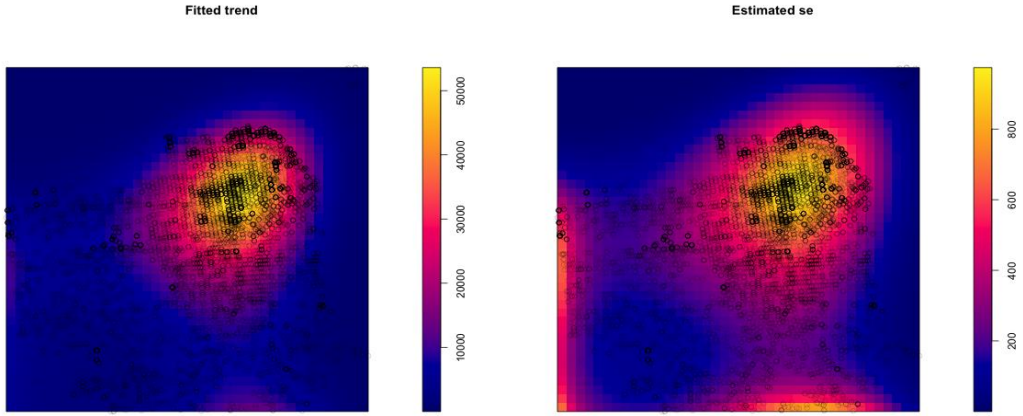
Model and Deployment

Inhomogeneous Poisson Models

SELECT POLY DEGREE

Predicted λ and Points of Events

MODEL OUTPUT PLOTS



Conclusion

LIMITATIONS

- Data was not completely accurate, some anonymization for privacy reasons
- No updated resolution status provided through the public API
- Information on suspects not available
- For simplicity, only 2024 data was used
- Running locally faced memory and performance issues

OPTIMIZATIONS

- Widen scope to more years
- Observe any potential clustering changes in residential neighborhoods
- Provide K-function plot to assist in evaluating the Poisson model