LA Crime

Team Members

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Description

Our project will analyze crime in the city of Los Angeles from 2010 to present and how it relates to weather and the unemployment rate. We will use what we have learned from this class to clean and combine our data and search it for interesting patterns. Our analysis could be used to make predictions about the crime rate in LA and in other cities, potentially helping law enforcement prevent future crimes.

Questions We Want to Ask

- What types of crimes are committed the most?

- When are most crimes committed?

- What areas of LA city have the most crime?
  - Has the crime rate in those areas improved since 2010?

- Is there a correlation between weather and crime in LA? Unemployment rate and crime?
  - If so, how much of an effect do unemployment and and weather have on crime rate?

Prior Work

- A lot of prior work
  - Doyle, Joanne M., et al. "The Effects of Labor Markets and Income Inequality on Crime: Evidence from Panel Data." *Southern Economic Journal*, vol. 65, no. 4, 1999, pp. 717–738. *JSTOR*, JSTOR, www.jstor.org/stable/1061272.

  - Edmark, K. (2005), Unemployment and Crime: Is There a Connection?. Scandinavian Journal of Economics, 107: 353–373. doi:10.1111/j.1467-9442.2005.00412.x

  - SIMON FIELD; THE EFFECT OF TEMPERATURE ON CRIME, *The British Journal of Criminology*, Volume 32, Issue 3, 1 July 1992, Pages 340–351, https://doi.org/10.1093/oxfordjournals.bjc.a048222

  - The LA dataset was also used in a kaggle competition

- Conclusions from previous work

  - Crime and poverty/unemployment are positively correlated

  - Crime frequency increases with good weather

Datasets

- LA Crime Data from 2010 to Present
  - https://data.lacity.org/A-Safe-City/Crime-Data-from-2010-to-Present/y8tr-7khq
- NOAA Weather data for LA City 2010 to present
  - https://www.ncdc.noaa.gov/cdo-web/datatools/lcd
- LA Unemployment Rate from 1990 to December 2018
  - https://fred.stlouisfed.org/series/CALOSA7URN

Proposed Work

- Clean the data
  - Drop null rows and sparse columns from the datasets
- Combine the datasets
  - Integrate the unemployment and weather datasets into the crime dataset
- Reduce the datasets
  - Weather data has hourly data, but daily data could be useful as well
- Find correlations between certain attributes
  - See how unemployment and weather relate to crime
  - See if there are any unexpected correlations or patterns

Tools

- Numpy

- Scipy

- Pandas

- Matplotlib for data visualization

- Jupyter notebooks

Evaluation

- We can compare our results to results of previous studies.

- Try to explain correlations that seem strange at first.

- Look for other patterns that support explanations.