




CSI: CHICAGO

CRIME SCENE INVESTIGATION

Friedrich Amouzou, Maria Knigge,
Maria (Sol) Pazos, Brandon Stone





DESCRIPTION

Our dataset is a relational table of every reported instance of crime in Chicago from 1/1/2001 to 1/17/2018 provided by the Chicago Police Department. With this information we intend on mining correlations between the datetime, location, and types of crime. For example, based on the concentration of drug-related crime we can predict where drug dealers might be located.






PRIOR WORK

- Multiple universities have conducted long-term studies
 - Jens Ludwig & Crime Lab - University of Chicago
 - Robert Vargas - University of Wisconsin Madison
 - Andrew V. Papachristos, Ph.D - Yale University
- Studies are long term and specific
 - Yale study was conducted over 48 years
 - University of Chicago focused on gun violence





DISTINCTIONS

- Police scanners
 - Have to listening live
 - Information is difficult to understand
 - Live tweets/Emergency message system
 - Not comprehensive
 - Basic information for quick action
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DATASETS

Chicago Police Department CLEAR (Citizen Law Enforcement Analysis and Reporting) Reported Incidents of Crime from 2001 Present.

Found at:


<https://catalog.data.gov/dataset/crimes-2001-to-present-398a4>

(On Friedrich Amouzou's Machine)





PROPOSED WORK

- Data Cleaning
 - Eliminating incomplete reports / handling null data
 - Data Preprocessing
 - Organize data by type
 - FBI codes are stored as floats
 - Date/time standardization
 - Reducing the dataset/ removing unnecessary attributes
 - Data Integration
 - Data visualization
 - Trend analysis
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TOOLS

- Python (including utilization of libraries like pandas, numpy, scipy, etc.)
- Jupyter Notebooks (for visualization)
- R (if necessary)





EVALUATION

- Are our conclusions valid?
 - Are our findings statistically significant?
 - Can we corroborate our findings with the results from previous studies?
 - Do our conclusions expand upon previous studies? If so, do our results make sense?
 - Can our findings be applied to the real world?
 - Can officers and citizens use our conclusions? Will it help reduce crime rates in Chicago?
 - Do our results give any insight into criminal patterns in Chicago? Can they be applied outside of Chicago?
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