The Crime Victims of LA: How Do We Know Who's Next?

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Objectives & Motivations

- Using the 2020 - Present LA Crimes dataset to analyze the crimes within 3 miles of UCLA and USC. [Center of UCLA: 34.0722° N, 118.4441° W; Center of USC: 34.0 224° N, 118.2851° W.]
- Is there a statistically significant difference between frequency (and type/-severity) of crimes near UCLA and USC, particularly crimes where the victim age is 18-24?

Methods

- Exploratory Data Analysis (EDA): Conducted descriptive statistics and visualization to compare crime rates, frequency, and distribution patterns near UCLA and USC.
- Machine Learning: Applied predictive modeling such as random forest to assess potential crime risk factors in each area.
- Statistical Analysis: Performed Chi-Square hypothesis testing to assess the statistical significance of differences in crime rates and severity between the two locations.

Distribution of Crimes

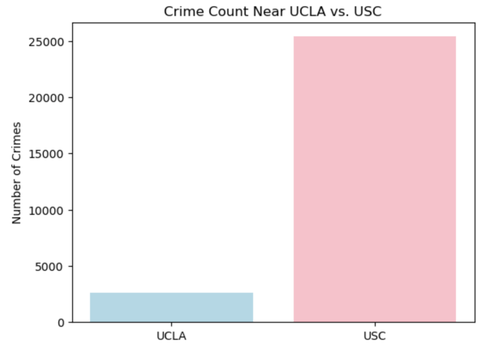

Figure 1: Number of Crimes Within 3 Miles of UCLA and USC

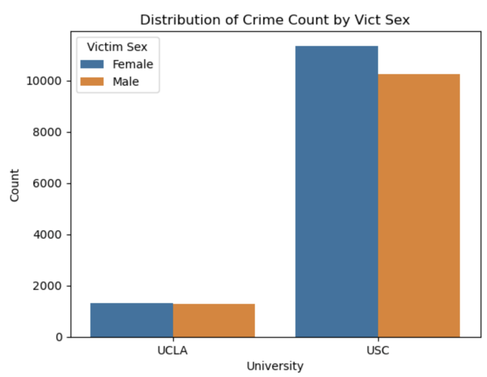

Figure 2: Number of Crimes Within 3 Miles of UCLA and USC by Sex

Feature Importance when Predicting Crime Location

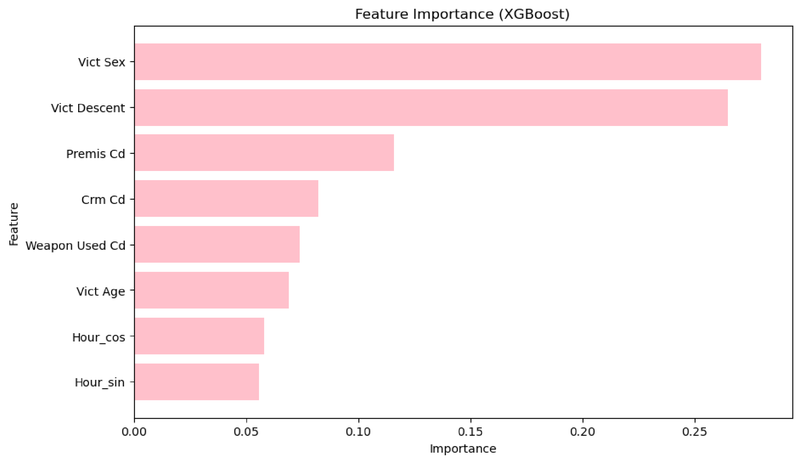

Figure 3: Features Ranked by Importance in Gradient Boosting Model

Distribution of Crime Severity

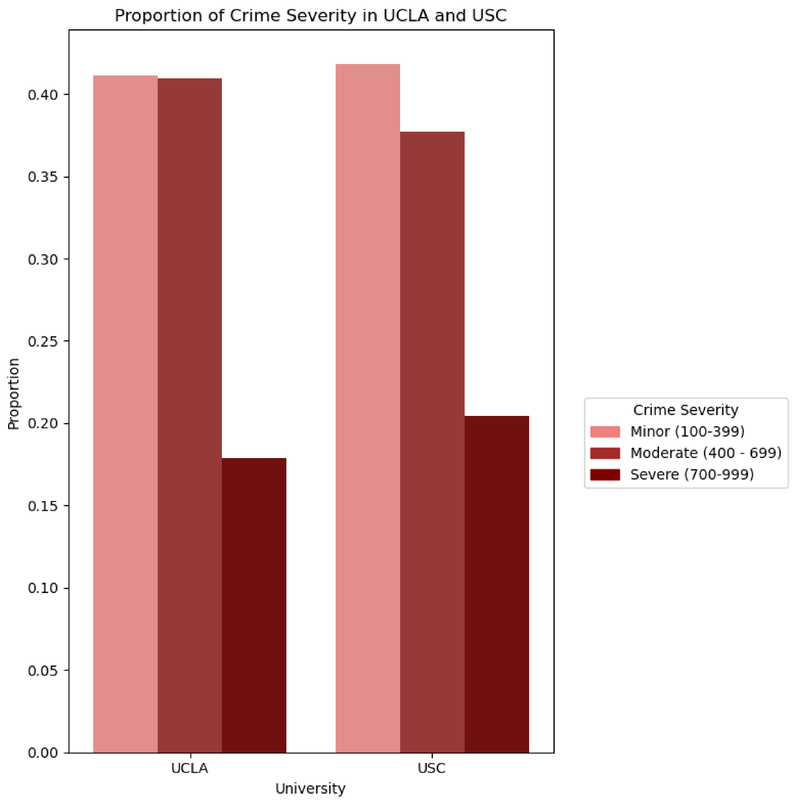

Figure 4: Distribution of Severity of Crimes on Both Campuses

Conclusion

- **Conclusion 1**: There is a statistically significant difference in crime frequency and crime frequency among sexes between the areas surrounding UCLA and USC, suggesting varying crime dynamics that may be influenced by neighborhood characteristics.
  - The victim's gender and racial origin seem to be the most significant demographic factors contributing to where the crime is the most likely to happen.
- **Conclusion 2**: Age-specific crime analysis reveals that victims aged 18-24 are disproportionately affected in certain categories of crime, raising questions about student safety and targeted crime interventions.
  - Potential policy recommendations: increased campus security, neighborhood policing, or public awareness programs.

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