Los Angeles Arrest Data in 2010-2019 using SAC/SAP

Gunzal Gaji, Raymond Tsang, Xiomara Iraheta, Bill Evashwick, Gia DiGiacobbe

BUS 5100-93 Data Analytics

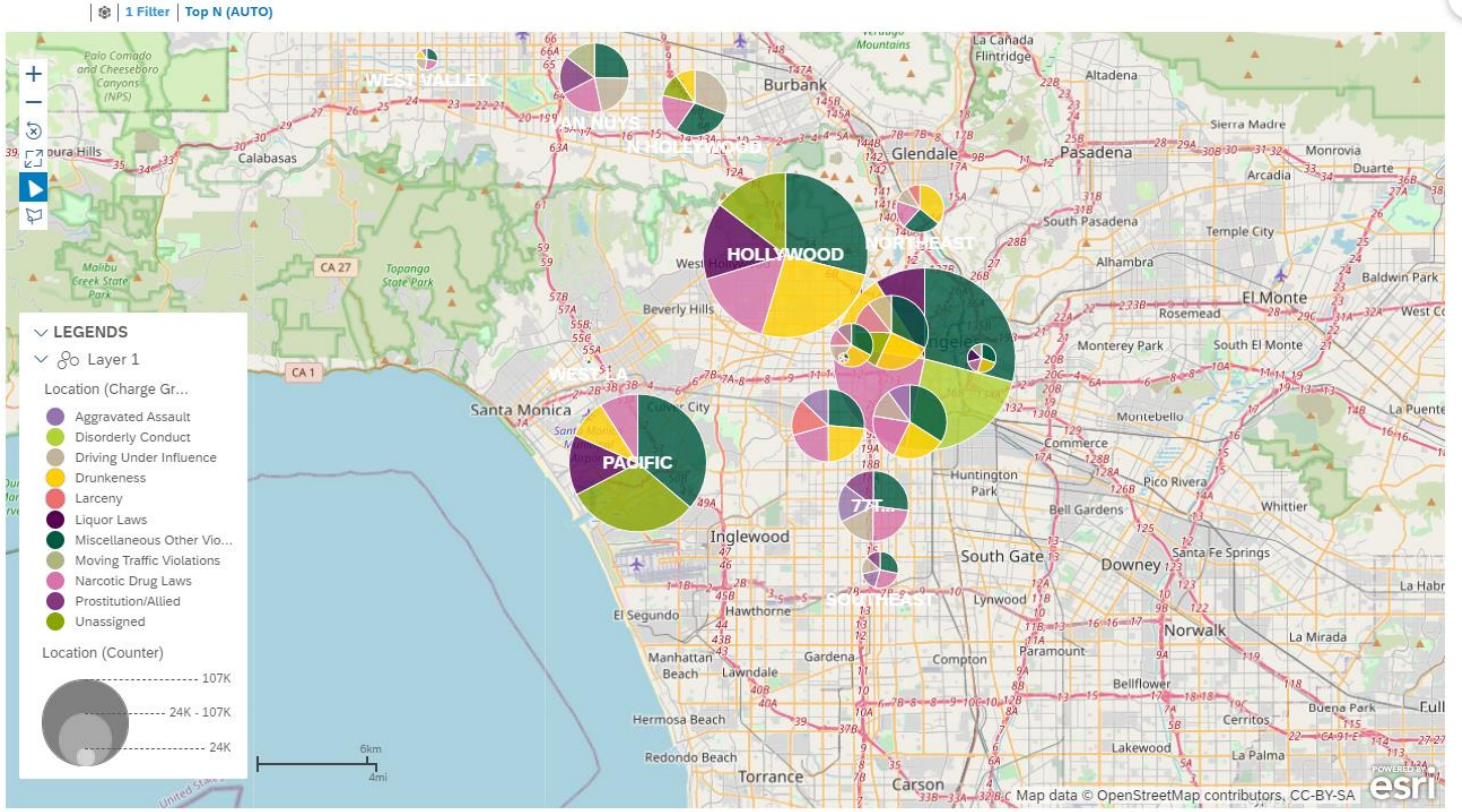
Introduction

- This project uses SAP and SAC to discover the correlation between police station location and arrest types. It also explores other factors such as age and gender.
- This dataset reflects a major issue in Los Angeles County. Because arrests and crime garner a lot of attention, this project looks for correlations between area and types of arrests to demonstrate what areas have certain types of arrests. Recent news reports by the LA Times point to an overall decrease in arrests starting in 2013, with rates dropping by 25% from 2013 to 2015.[1]

Visualizations : Geo Map

Arrest Types per Location

- The Geo Map shows where arrests were made and types of arrests per area
- Hollywood and Central have larger numbers of arrests
- Types of arrests that are most frequent are miscellaneous charge, disorderly conduct, and narcotic drug laws

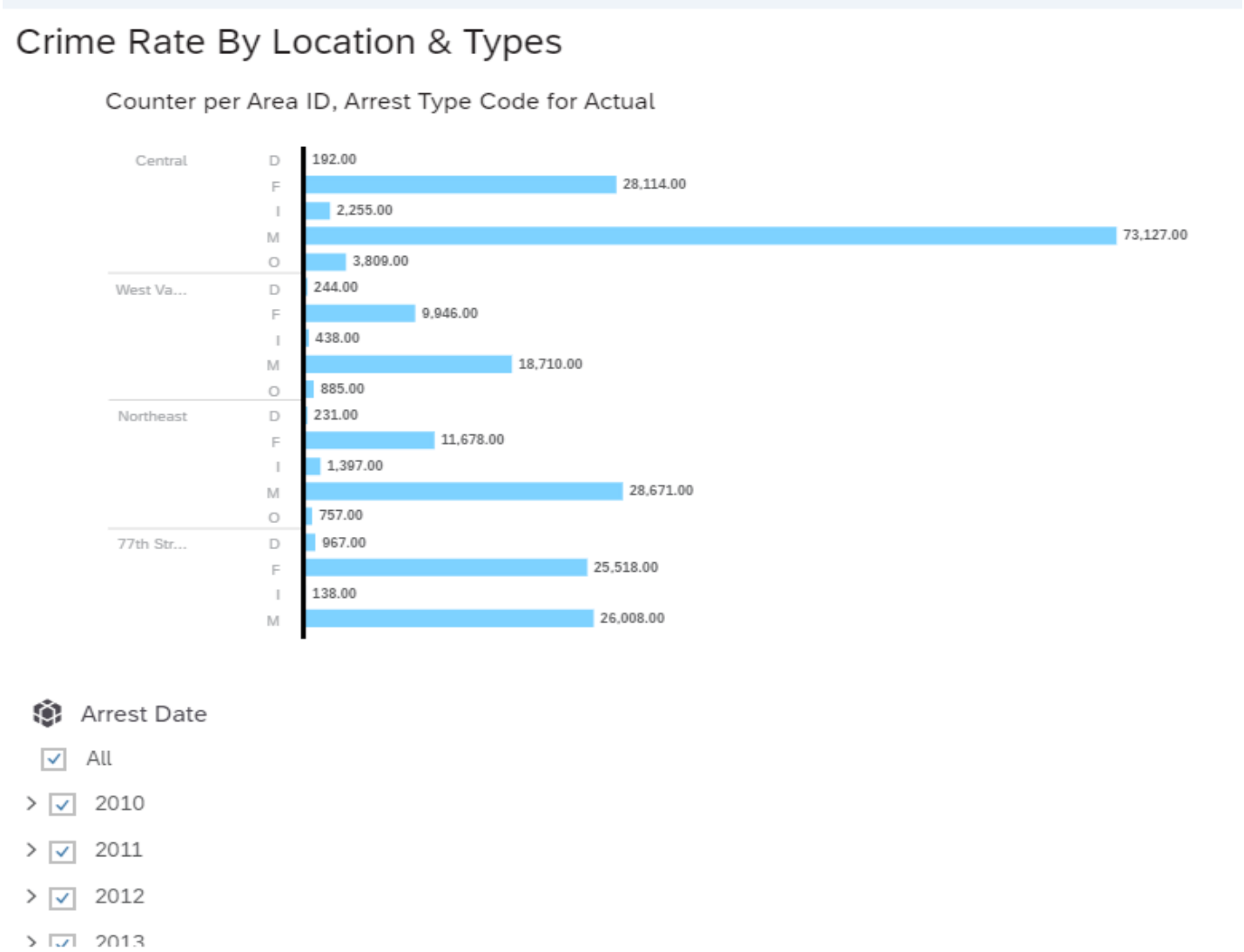


Visualizations : Bar Graph

Arrest Type by Location

- The bar graph shows a decade (2010-2019)

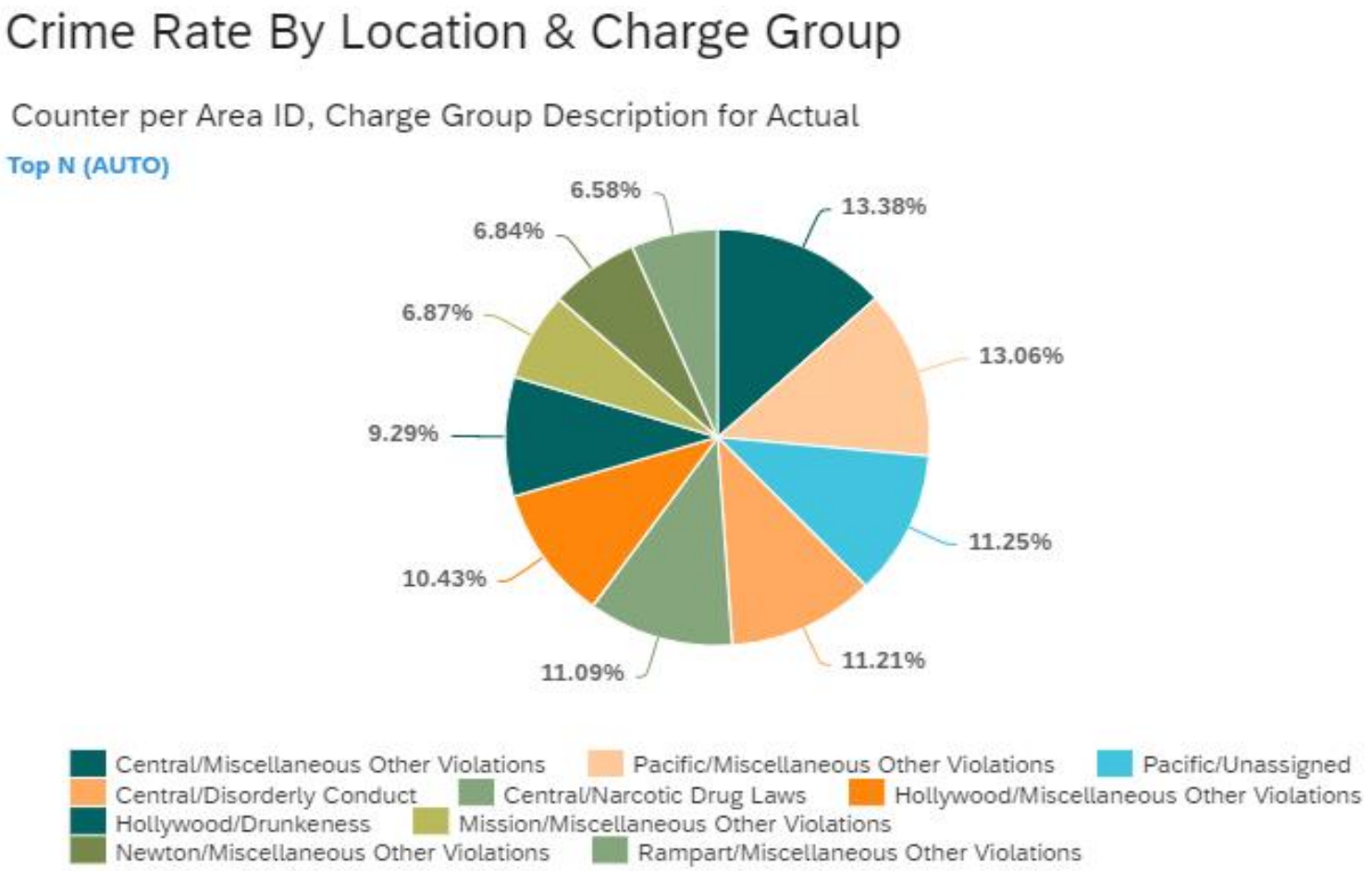
- It displays that most regions have Miscellaneous / Other as the most common Arrest Code



Visualizations : Pie Chart

Arrest Type by Location and Charge Group

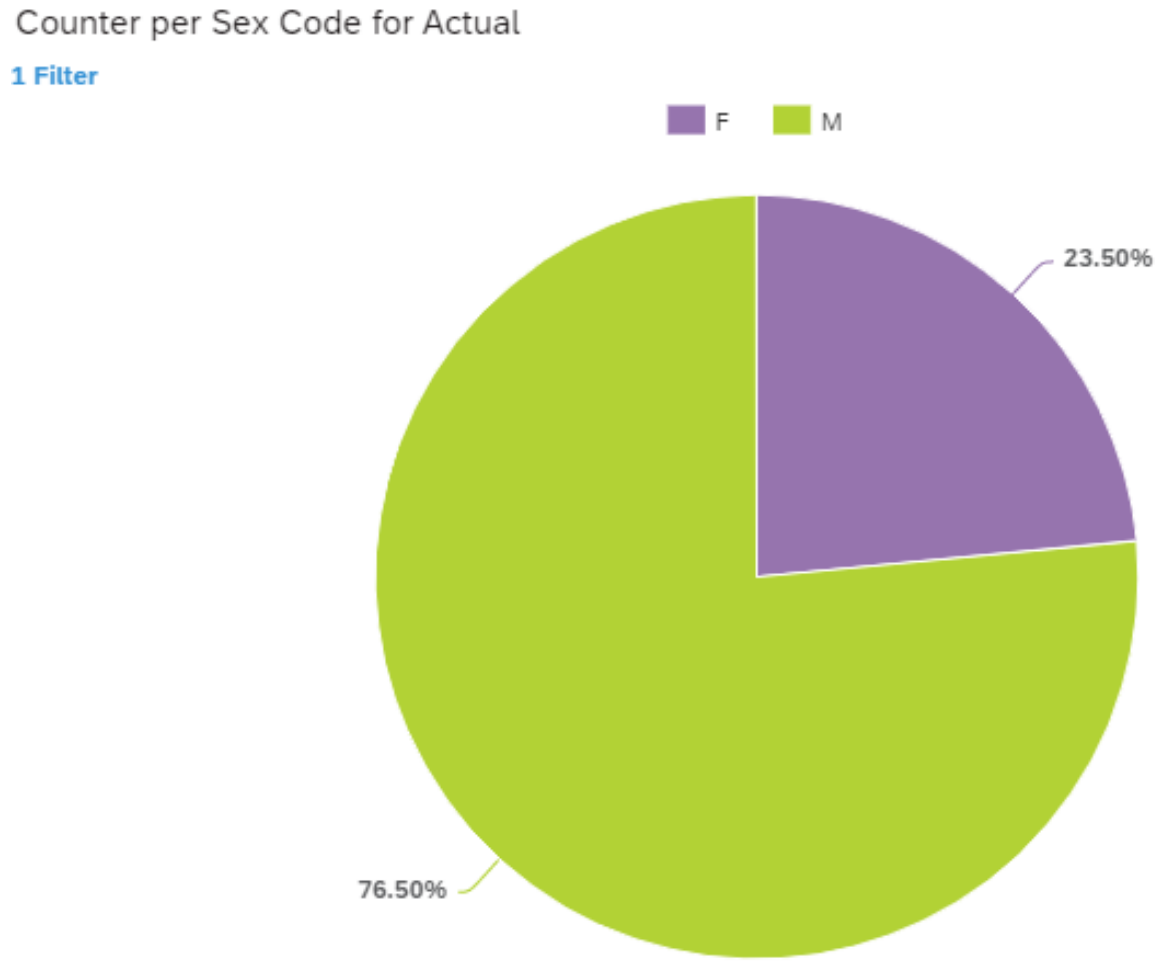
- The pie chart displays the leading cause of arrest for each police district (Area ID)
- Miscellaneous / Other Violations account for the vast majority of arrests



Visualizations : Pie Chart

Arrest by Gender

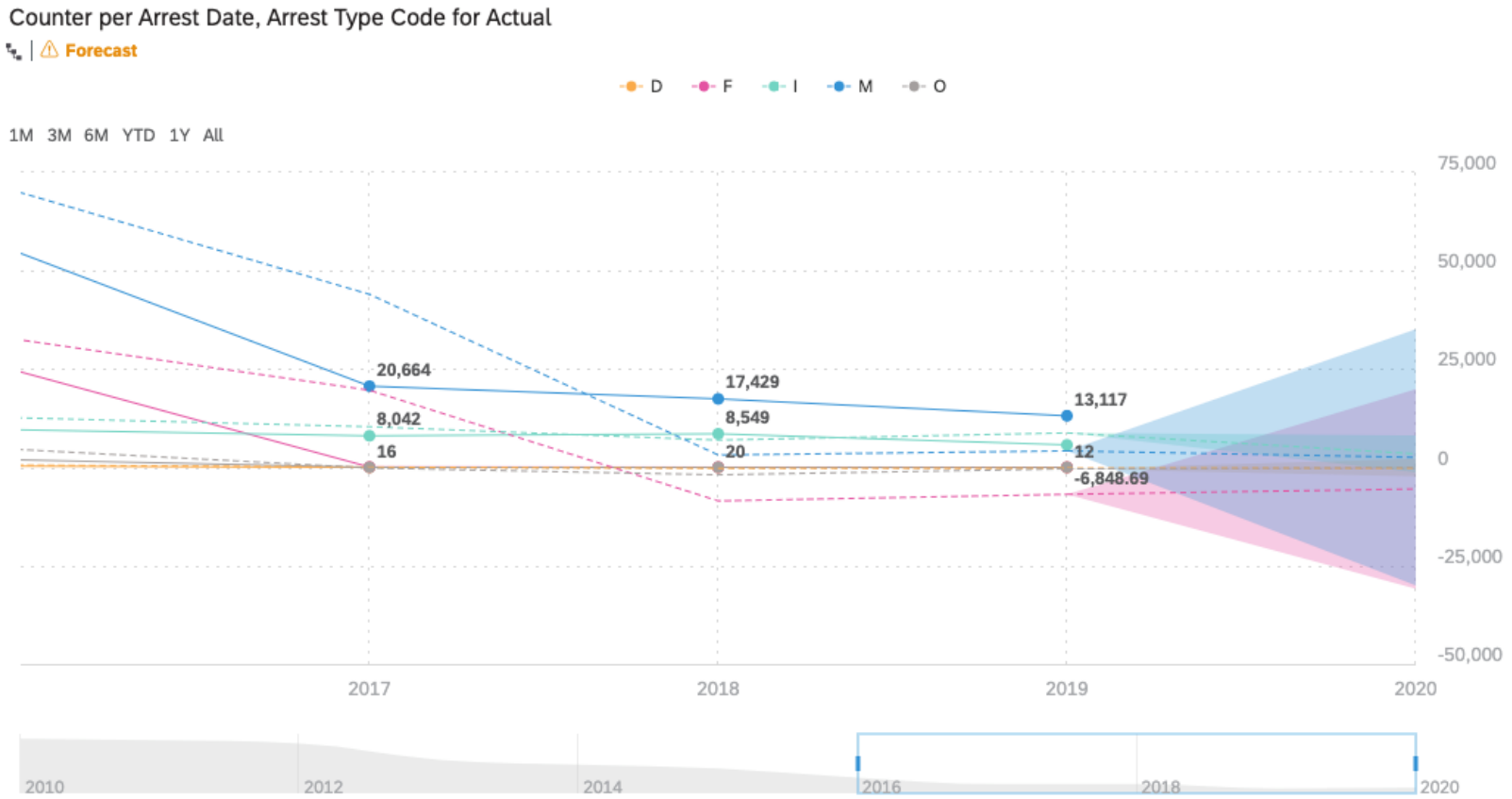
- This pie chart shows that more men are arrested than women
- Only 23.5% of arrests were women



Visualizations : Time Series

Arrest by Year and Date

- Forecasting for Arrest Type Code was strongest (4/5) in infractions, which are common traffic violations
- The forecast projects arrests continuing to drop



Visualizations : Regression

Arrest by Age

- Regression to predict age
- Confidence (99.22%)
- RMSE (10.83)
- Influencers
  - Decent (17.4%)
  - Disposition (16.78%)
  - Charge (11.75%)
  - Charge Group (11.13%
  - Time (9.06%)

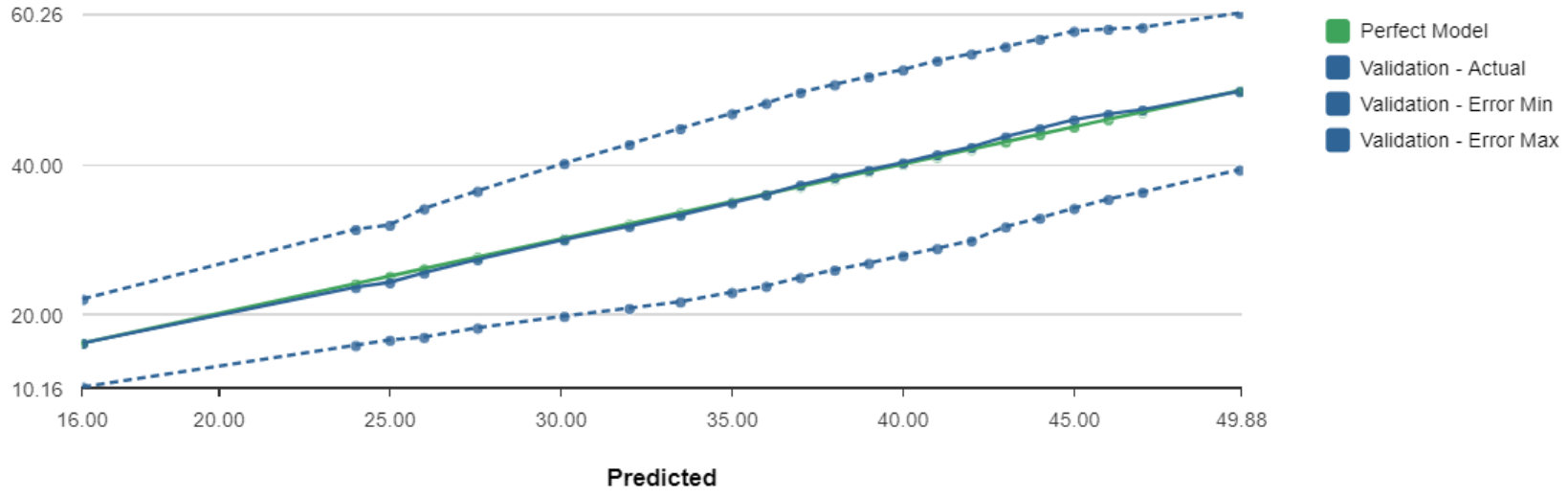
Global Performance Indicators

Root Mean Square Error (RMSE)	Prediction Confidence
10.83	99.22%

Target Statistics

Data Partition	Minimum	Maximum	Mean	Standard Deviation
Training	0	96	34.34	13.87
Validation	0	97	34.32	13.85

Predicted vs. Actual



Conclusion

Based on our analysis, we have concluded:

- Misdemeanor/ miscellaneous arrest charges were most common
- Men get arrested more than women
- Arrests in Los Angeles have been declining and are projected to continue to do so

HEY!
COME ON!

References

[1] Queally, J., Mather, K., & Chang, C. (2017, April 1). Police arrests are plummeting across California, fueling alarm and questions. Retrieved March 21, 2021, from https://www.latimes.com/local/lanow/la-ln-police-slowdown-20170401-story.html

[2] O'Toole and Neusteter, R. (2019) Arrest Trends. Retrieved From https://www.vera.org/downloads/publications/Arrest-Trends-Data-and-Methodology.pdf

[3] Cung, B. (2013). Crime and Demographics: An Analysis of LAPD Crime Data. UCLA. ProQuest ID: Cung_ucla_0031N_11420. Merritt ID: ark:/13030/m52b99n3. Retrieved from https://escholarship.org/uc/item/2v76v571