

Racial Disparities in Arrests: A Visual Analysis

A Data-Driven Perspective on Offense Trends Across Racial Group of 2020

Darius Brown 09May25

Objective

Audience

1. Policy makers,
2. Community leaders
3. law enforcement oversight committees

Analyze

1. Arrest patterns
2. Arrest and judicial Disparities
3. Social Norms

Stereotypes

1. Social norms
2. Promote Evidence-Based Understanding:
3. Protect Affected Communities from Harmful Bias

Common Stereotypes

African American

- More involved in violent offenses than other groups

Indian American

- The primary racial group involved in substance abuse related crimes.

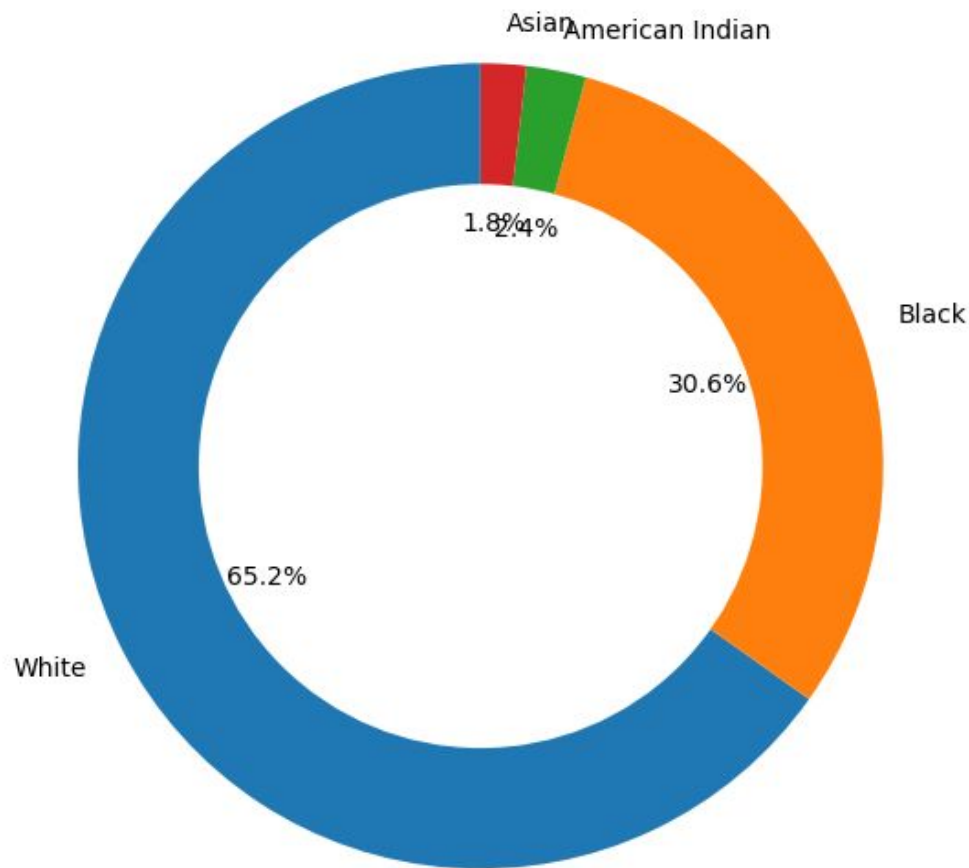
Asian American

- Rarely the offender in a criminal situation

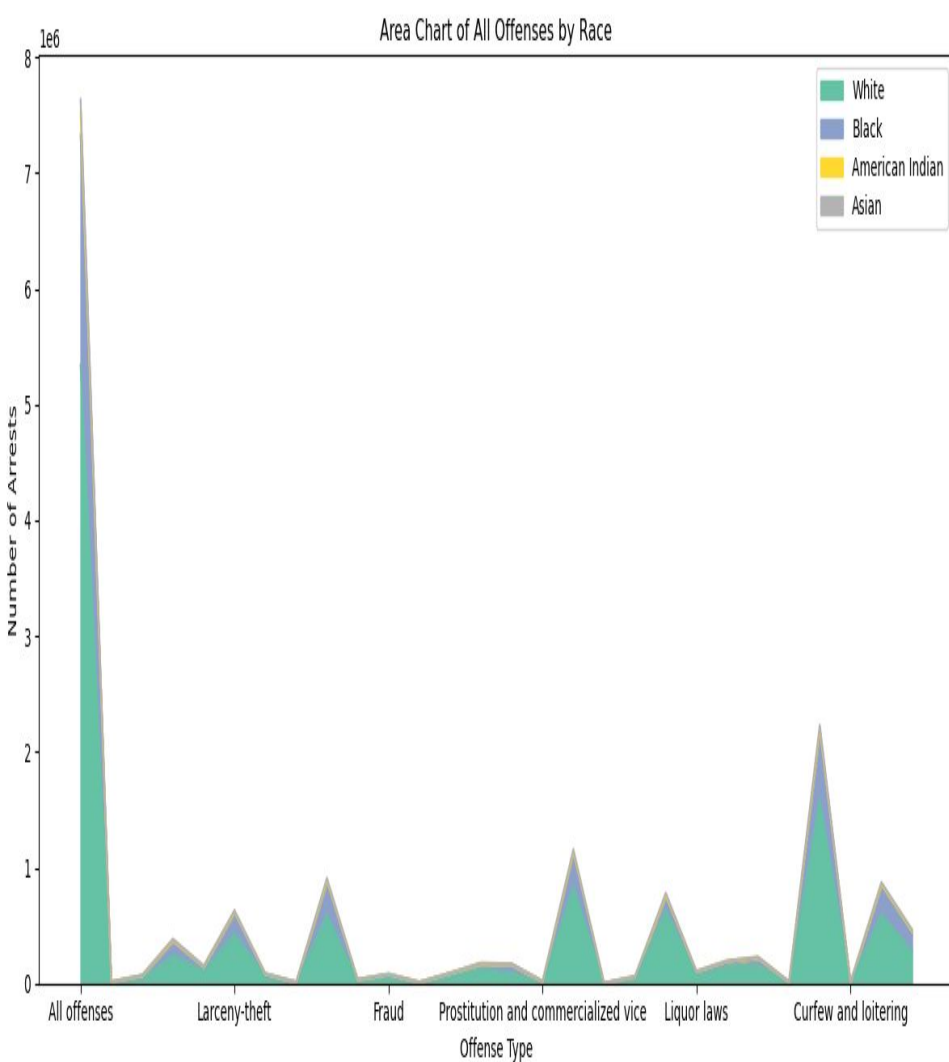
Caucasian

- More involved in crimes against other racial groups

Donut Chart: Simple Assault by Race

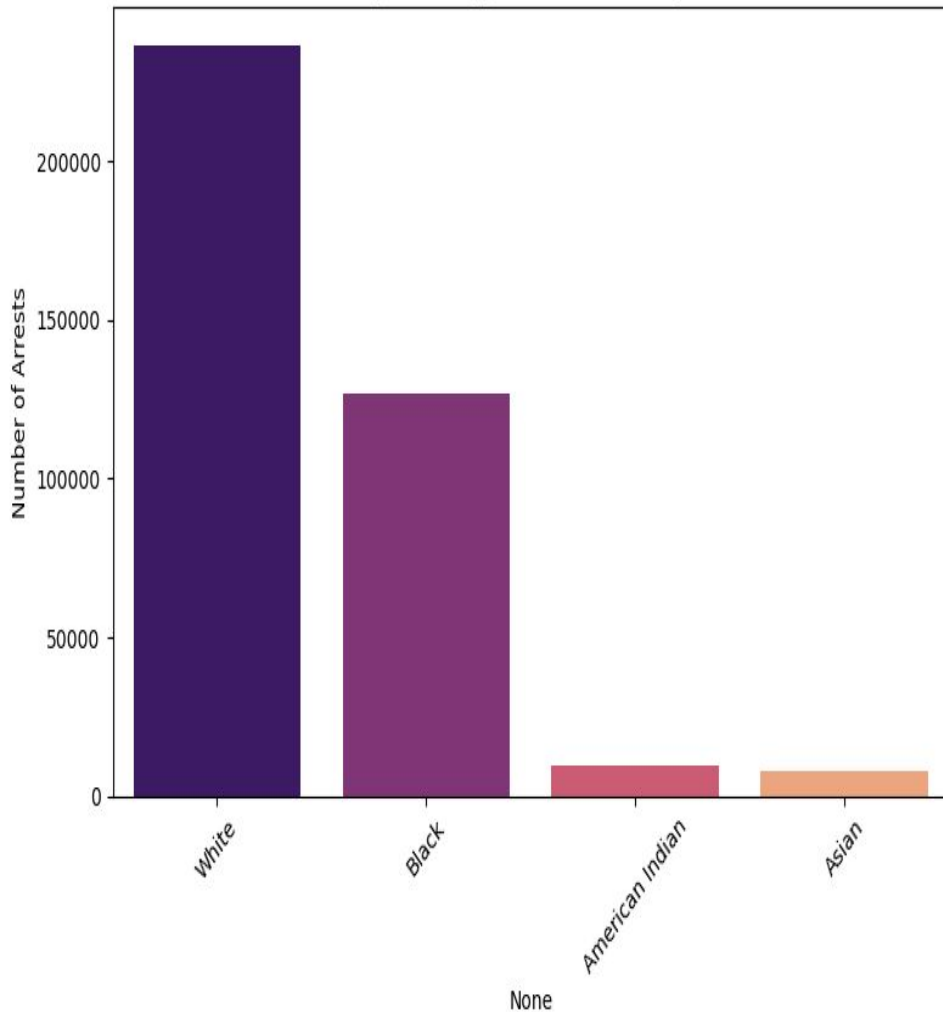


1. White individuals make up over 65% of simple assault arrests.
2. Black individuals represent approximately 30%, a high figure compared to their population size.
3. American Indian and Asian groups each account for under 3% of arrests.
4. The proportional view makes racial gaps more visually obvious than a bar chart.
5. Highlights how simple offenses still reflect broader racial patterns in law enforcement data.



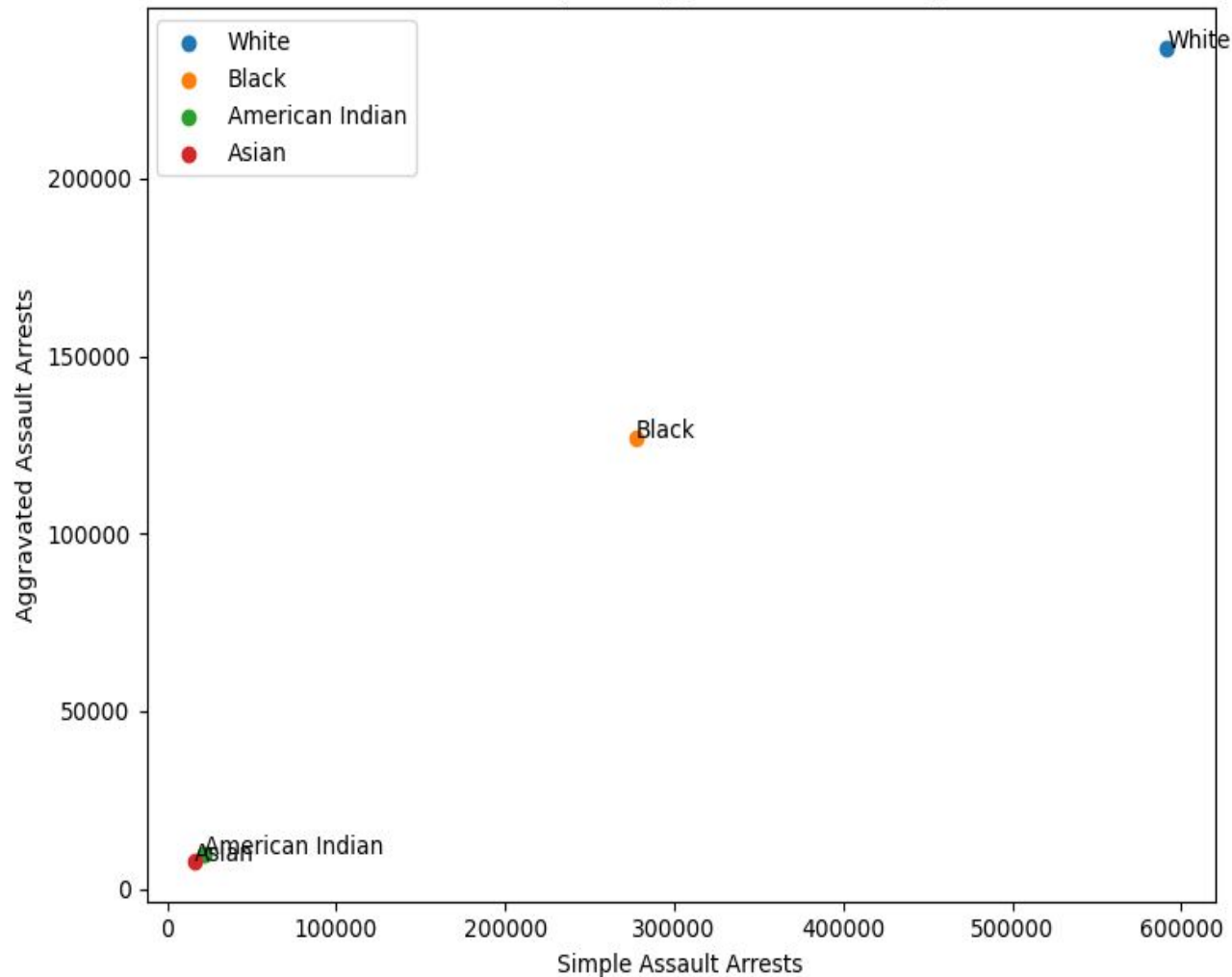
1. White individuals dominate total arrest numbers due to overall population size.
2. Black individuals show consistently high arrest rates across multiple offense types.
3. Arrest counts for Asian and American Indian populations remain relatively low.
4. Certain offenses like "Larceny-theft" and "Liquor laws" show clear racial clustering.
5. The chart highlights systemic disparities across both violent and non-violent crimes.

Histogram of Aggravated Assault by Race



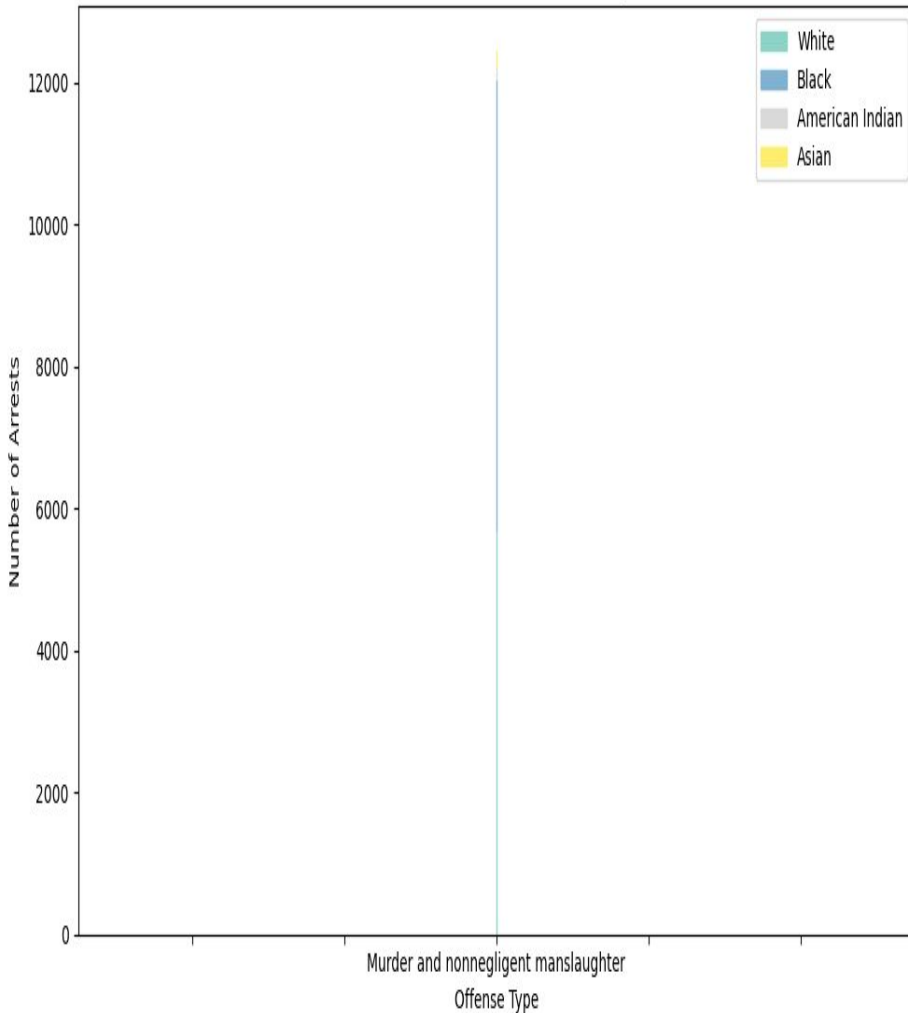
1. White individuals account for the highest number of aggravated assault arrests.
2. Black individuals are the second highest group, with a significant gap from other races.
3. Arrests for Asian and American Indian populations are substantially lower.
4. The disparity raises questions about contributing social, economic, and systemic factors.
5. Visual emphasizes the volume of violent offenses tied to racial demographics.

Scatter Plot: Simple vs Aggravated Assault by Race

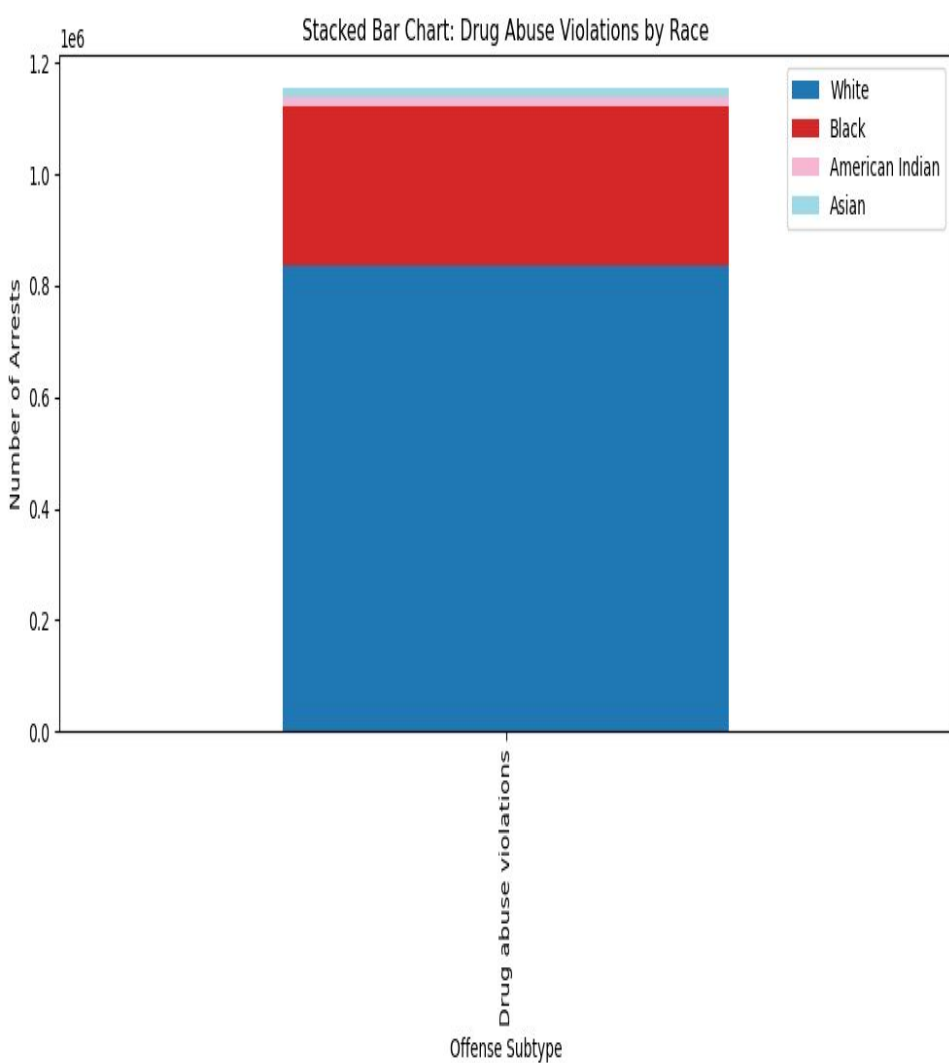


1. White and Black individuals cluster in the upper-right, indicating high arrest counts in both assault types.
2. American Indian and Asian groups are clustered near the origin, showing low rates.
3. Positive linear trend suggests that racial patterns in assault types are parallel.
4. Disparities are not limited to one offense severity—multiple dimensions are impacted.
5. Visual comparison reveals potential law enforcement bias or structural inequality.

Stacked Area Chart: Murder Offenses by Race



1. Black individuals make up a disproportionately large share of murder-related arrests.
2. White individuals also contribute a significant portion but at a slightly lower rate.
3. Asian and American Indian representation is minimal but consistent.
4. The chart emphasizes racial disproportionality in the most serious violent crimes.
5. Arrest trends are consistent across time or categories (if multi-time-point data is used).



1. White individuals account for the majority of drug-related arrests.
2. Black individuals are the second largest group, echoing national debates on racial bias in drug policing.
3. American Indian and Asian groups show minor representation but are still tracked.
4. The visual underscores how drug enforcement efforts disproportionately affect specific communities.
5. Despite similar drug usage rates by race (according to national surveys), arrest disparities remain.

Implementation

26.1%

African Americans

More involved in violent offenses than other groups



Disapproves

- Poverty, not race, is the strongest predictor of violent crime
- crime is often intra-racial (same race), not inter-racial

69.9%

Caucasian

More involved in crimes against other racial groups



Disapproves

- most violent crimes are intra-racial: 80%
- Inter-racial crimes are relatively rare considering population size

2.4%

American Indians

The primary racial group involved in substance abuse related crimes



Disapproves

- have low arrest and substance abuse rates nationally
- lower-than-average rates of drug-related arrests

1.6%

American Asians

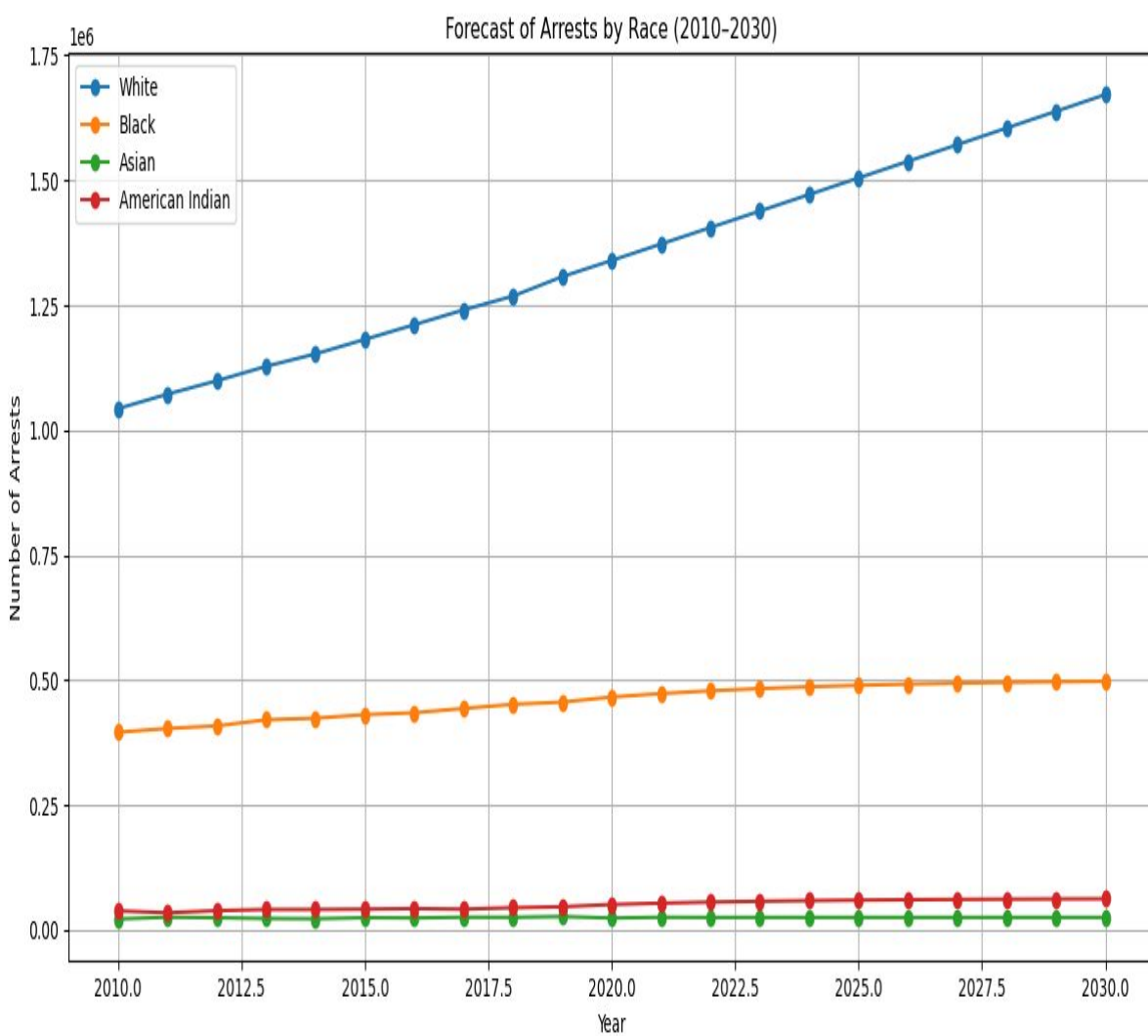
Rarely the offender in a criminal situation



Partially supports

- consistently have one of the lowest arrest rates
- communities emphasize lawfulness and family honor

Total arrests in 2020 All races): 7,632,470



1. **Caucasian** individuals are projected to have ~42,047 arrests annually through 2030, maintaining the highest arrest count of all groups.
2. African American individuals are forecasted to average ~24,000 arrests/year, despite representing a smaller portion of the population.
3. American Indian arrests remain low, averaging ~2,800 per year, showing minimal projected growth.
4. American Asian arrests are projected to stay around ~1,900 annually, with no significant upward trend.
5. Arrest disparities are expected to continue, with **Caucasian** arrests projected to be 22× higher than Asian arrests by 2030.

Predict total arrests per offense based on offense type

Linear Regression

Method: Offense type
(encoded numerically)

RMSE: 2,882,332 arrests

→ On average, predictions deviate by ~2.88 million arrests.

R² Score: -0.0831

→ Model performs **worse than simply predicting the mean** — indicates poor fit.

Future Work: Enhancing Data Depth and Predictive Power

Random Forest

Method: 100 estimators,
default depth, random seed
for reproducibility.

RMSE: 2,817,198 arrests

→ Slightly lower error — more capable of capturing non-linearity.

R² Score: -0.0347

→ Slightly better, but still a **very weak model** — model can't explain variance in arrests.

Confronting Misconceptions with Data

- Racial disparities in arrest data reflect **systemic conditions**, not inherent criminal convictions
- **Black and White individuals** account for most arrests—but context (like poverty and policing patterns) matters.
- Common stereotypes about Indian and Asian Americans are often **misinformed or based on confusion**.
- Arrests are largely **intra-racial**, challenging the idea that specific races disproportionately target others.
- Data and social context must be combined to build **fair, informed public narratives**.



What Should We Do With This Information?

Educate: Use data to challenge racial myths in schools, communities, and public policy.

Reform: Advocate for justice system changes—equitable policing, sentencing reform, and transparency.

Dialogue: Create space for honest conversations rooted in facts, not fear or assumptions.

Empower: Support organizations working to dismantle racial bias in the legal system.

Stay Informed: Keep questioning and contextualizing data—because numbers without narrative can mislead.



Citations

1. Hinton, Elizabeth, et al. *An Unjust Burden: The Disparate Treatment of Black Americans in the Criminal Justice System*. Vera Institute of Justice, 2018, www.vera.org/downloads/publications/for-the-record-unjust-burden-racial-disparities.pdf.
2. Bureau of Justice Statistics. *Criminal Victimization, 2020*. U.S. Department of Justice, Office of Justice Programs, 2021, www.bjs.gov/content/pub/pdf/cv20.pdf.
3. Substance Abuse and Mental Health Services Administration (SAMHSA). *National Survey on Drug Use and Health: 2020 Detailed Tables*. U.S. Department of Health and Human Services, 2021, www.samhsa.gov/data/report/2020-nsduh-detailed-tables.
4. 5. Pew Research Center. *Asian Americans: Diverse Outcomes, Few Arrests*. 2022, www.pewresearch.org/fact-tank/2022/05/10/asian-americans-diverse-outcomes/.
5. 7. Federal Bureau of Investigation. *Crime in the United States, 2022: Arrests by Race*. U.S. Department of Justice, 2023, <https://ucr.fbi.gov>.
6. 8. Le, C. N. *Asian-Nation: The Landscape of Asian America*. 2002, www.asian-nation.org.
7. 10. Bureau of Justice Statistics. *Race and Hispanic Origin of Victims and Offenders, 2012–2015*. U.S. Department of Justice, 2017, www.bjs.gov/content/pub/pdf/rhovo1215.pdf.
8. 11. Pew Research Center. *Race and Crime in America*. 2021, www.pewresearch.org