

# Bias Detection Report

## Bias Detection Report

**Dataset Analyzed:** Adult.csv

**Features Examined:** 'race', 'income', 'occupation'

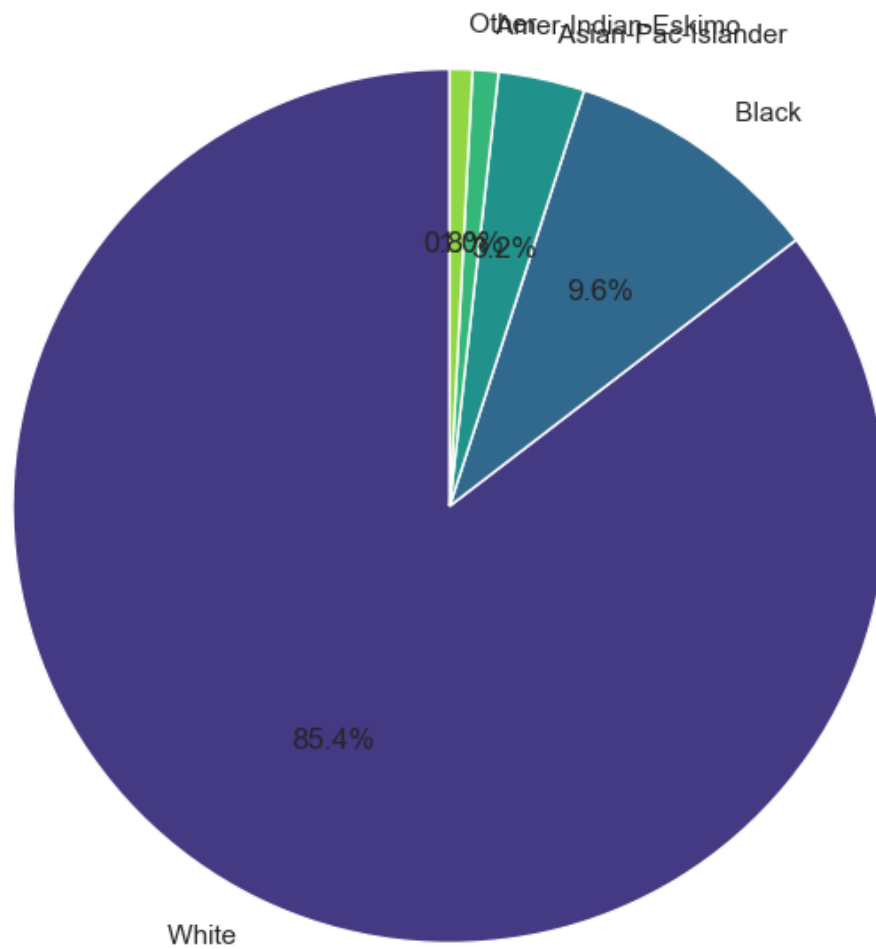
**Bias Type:** Both Distribution and Correlation

**Relevant Features:** 'race', 'income', 'occupation'

### Distribution Bias Analysis

- Shannon Entropy and Balance Metric: Balance = 0.3439, indicating significant imbalance.
- Max/Min Ratio: 102.64, reflecting extreme bias in distribution.
- Jensen-Shannon Divergence: 0.3758, moderate divergence from uniform distribution.

Pie Chart of race



### Correlation Bias Analysis

- 'race' and 'income': Cramér's V = 0.1008, Elift = 1.1957, indicating minimal bias.
- 'race' and 'occupation': Cramér's V = 0.0808, Elift = 11.6331, indicating significant bias.

## **Summary and Recommendations**

- The 'race' feature exhibits significant distribution bias.
- There is minimal correlation bias between 'race' and 'income'.
- A significant correlation bias exists between 'race' and 'occupation'.
- Proceed with caution when analyzing data related to racial perceptions or treatments. Consider adjusting the dataset or employing bias mitigation strategies.