

# Bias Detection Report

Bias Detection Report for Dataset 'Adult\_cleaned.csv'

1. Bias Type: Correlation and Distribution

2. Relevant Features: Race, Income

3. Bias Level:

- Correlation Bias Level: Level 2 (Low correlation bias between 'race' and 'income')
- Distribution Bias Level: Level 5 (High distribution bias in the 'race' feature)

4. Explanation of Findings:

- Correlation Analysis: The Cramér's  $V$  value of approximately 0.1008 indicates a low level of correlation bias between 'race' and 'income.' This suggests that while there is some association, it is not strong enough to indicate significant bias in how race influences income levels.

- Distribution Analysis: The Balance metric of approximately 0.344 indicates a high level of distribution bias in the 'race' feature. This suggests that the distribution of race categories is uneven, which could imply potential bias in representation or sampling within the dataset.

5. Overall Bias Level: Level 5

6. Additional Explanation: The high distribution bias in the 'race' feature suggests that certain racial categories may be underrepresented or overrepresented in the dataset. This could lead to skewed perceptions or treatment based on race, as the dataset may not accurately reflect the diversity of the population. It is important to address this bias to ensure fair and equitable analysis and decision-making.