

Bias Detection Report

Bias Detection Report: Race Distribution

Dataset Analyzed:

- File Path: source_files/MIMIC-IV.csv

Features Examined:

- patient_race

Types of Bias Detected:

- Distribution Bias

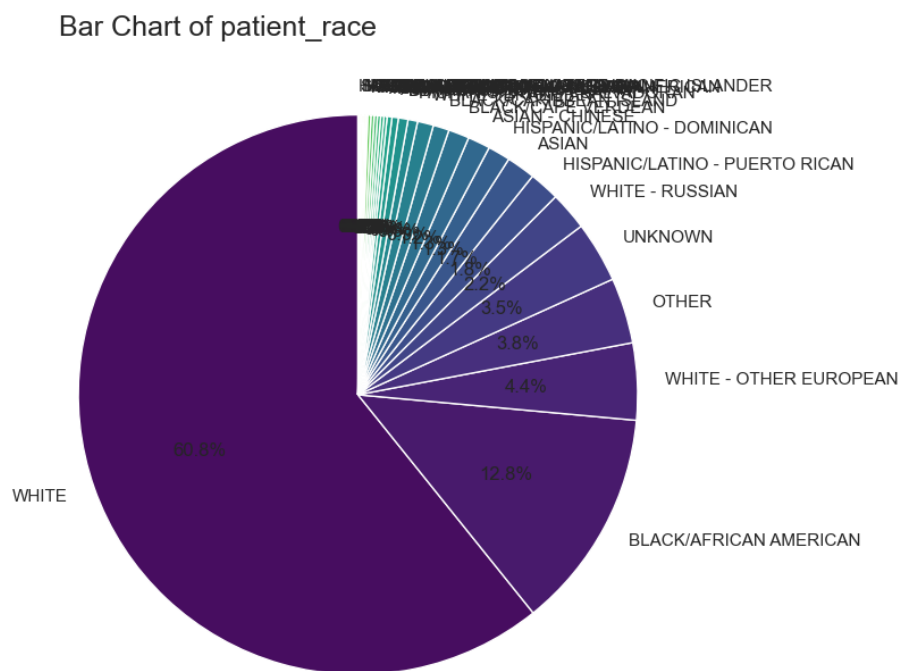
Tools Used:

- Shannon Entropy and Balance Metric
- Max/Min Ratio
- Gini Index
- Relative Risk

Values Obtained and Extent of Bias:

- **Shannon Entropy**: 2.3444
- **Balance Metric**: 0.4826 (Level 4)
- **Max/Min Ratio**: 657.0 (Level 5)
- **Adjusted Gini Index**: 0.6480 (Level 4)
- **Relative Risk**: Highest - 17.6253, Lowest - 0.0268, Normalized Bias Score: 657.0 (Level 5)

Visualizations:



Natural Language Interpretation of the Bias Severity:

The distribution of patient races in the dataset exhibits significant to extreme bias. The analysis shows that one race is vastly overrepresented compared to others, as indicated by the extremely high max/min ratio and relative risk. The Gini Index also reflects significant inequality.

Recommendations:

It is recommended to closely evaluate the implications of this bias before using the dataset for any analysis, as it may impact the reliability of conclusions drawn from the data.