Bias Detection Report

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Dataset Analyzed

The dataset analyzed is from the file source_files/Statlog.csv.

Feature Examined

- Job

Type of Bias Detected

- Distribution Bias

Tools Used and Results

1. **Shannon Entropy and Balance Metric**:

   - Shannon Entropy: 1.41

   - Balance Metric: 0.71

   - **Bias Level**: Moderate bias

2. **Max/Min Ratio**:

   - Ratio: 28.64

   - **Bias Level**: Significant bias

3. **Entropy and Normalized Entropy**:

   - Entropy: 1.41

   - Normalized Entropy: 0.71

   - **Bias Level**: Moderate bias

4. **Gini Index**:

   - Corrected Gini Index: 0.54

   - Adjusted Gini Index: 0.72

   - **Bias Level**: Moderate bias

5. **Relative Risk**:

   - Relative Risks:

     - Skilled employee: 2.52

- Unskilled - resident: 0.8

- Management / self-employed: 0.592

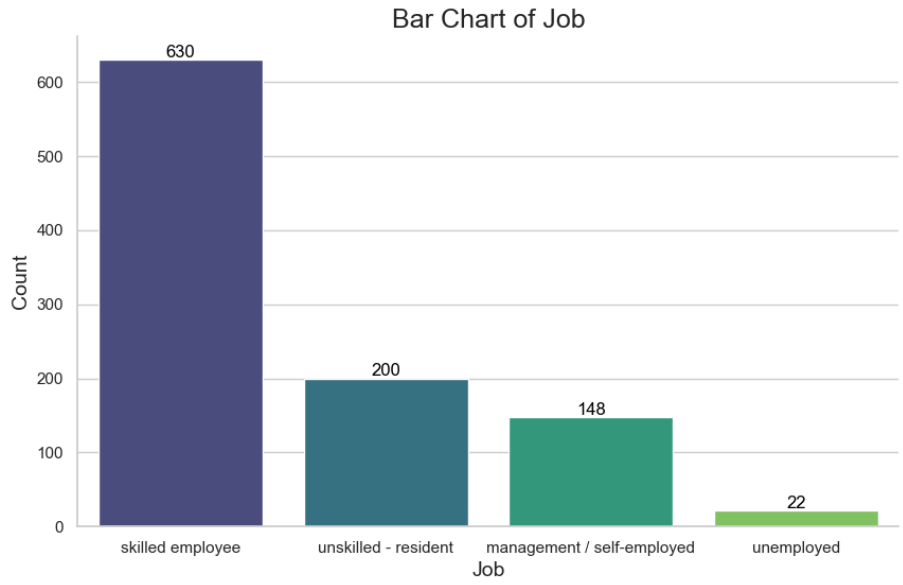
- Unemployed: 0.088

- Normalized Bias Score: 28.64

- **Bias Level**: Significant bias

Visualizations

- A bar chart of the 'Job' distribution has been created for visual inspection.



Interpretation of Bias Severity

The 'Job' feature shows moderate to significant distribution bias. The unevenness in job category representation could affect analyses that depend on job distribution. The results indicate that certain job categories are more prevalent, which may require careful consideration in decision-making.

Recommendations

Consider the potential effects of this distribution bias in your analysis, especially if job distribution is a critical factor. Adjustments or additional analyses may be needed to mitigate the impact of this bias.