Bias Detection Report

Bias Detection Report for Employment Duration

Bias Type: Distribution

Relevant Feature: Present employment since

Toolset Analysis

1. **Shannon Entropy and Balance Metric**

   - Balance: 0.928

   - Shannon Entropy: 2.155

   - Interpretation: The balance metric suggests a close-to-balanced distribution with some slight skewness.

2. **Max/Min Ratio**

   - Ratio: 5.468

   - Interpretation: This value indicates a moderate level of bias where certain durations are more frequent than others.

3. **Gini Index**

   - Adjusted Gini Index: 0.946

   - Interpretation: A high adjusted Gini Index suggests minimal bias.

4. **Relative Risk**

   - Normalized Bias Score: 5.468

   - Interpretation: This score indicates that the distribution is moderately biased, with some categories being over-represented.

Reference Literature Method

- **Chi-Square Test**

   - Chi-Square Statistic: 213.17

   - P-value: 5.53e-45

   - Interpretation: The Chi-Square test indicates a significant deviation from a uniform distribution, suggesting over-representation of certain durations.