Bias Detection Report

Distribution Bias Analysis Report

Dataset Analyzed:

- **Dataset Path**: source_files/Student Performance.csv

- **Analyzed Feature**: 'paid' (indicating attendance in extra paid classes)

Analysis Summary:

The analysis focused on examining the distribution of the 'paid' feature to determine if there is a disproportionate number of students attending extra paid classes.

Bias Type: Distribution

Relevant Feature: 'paid'

Bias Level and Findings:

- **Max/Min Ratio**: The calculated max/min ratio was 1.18, indicating Level 1 (No Bias).

- **Entropy and Normalized Entropy**: Both were calculated to be approximately 0.995, indicating Level 1 (No Bias).

- **Gini Index**: The calculated Adjusted Gini Index was approximately 0.991, indicating Level 1 (No Bias).

- **Chi-Square Test**: The Chi-Square value was found to be 2.76, which is below the critical value of 3.84, indicating no significant deviation from the expected distribution.

Conclusion:

The analysis indicates that the 'paid' feature in this dataset shows no significant bias. All calculated metrics suggest metrics close to the ideal state, supporting the finding of no bias.

Recommendations:

The dataset can be confidently used without concerns of bias in the 'paid' feature.

Bar Chart of paid