Bias Detection Report

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This report analyzes the distribution bias in the 'Credit history' feature of the dataset located at 'source_files/Statlog.csv'. The analysis aims to identify any systemic bias in prior credit opportunities based on historical credit records.

Dataset Analyzed:

- **Path:** source_files/Statlog.csv

- **Feature Analyzed:** Credit history

Bias Type:

- **Type:** Distribution

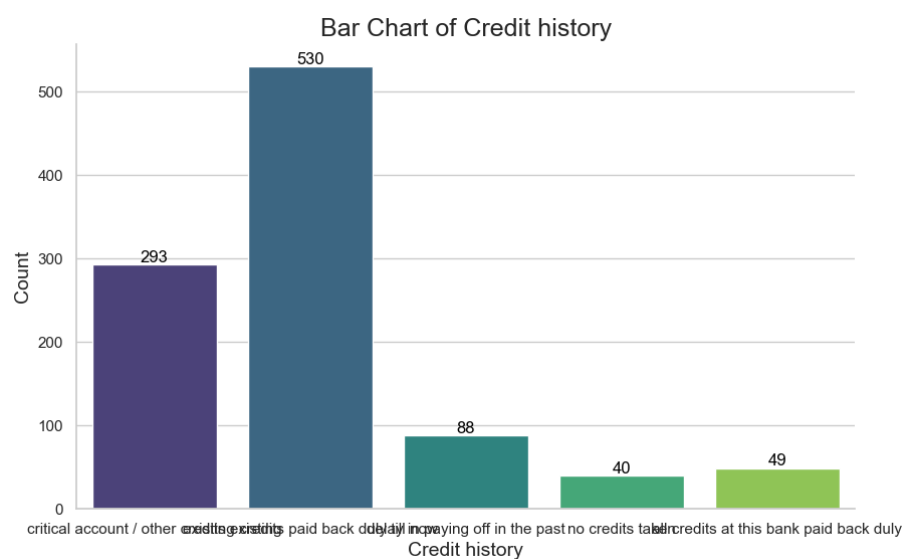- **Relevant Feature:** Credit history

Analysis Methods Used:

- **Jensen-Shannon Divergence:** Measures divergence from uniform distribution.

- **Z-Score Analysis:** Evaluates category frequency deviations from the mean.

Results:

- **Jensen-Shannon Divergence:** 0.3946 (Moderate Bias)

- **Z-Score Analysis:**

- Existing credits paid back duly till now: 1.562

- Critical account / other credits existing: 0.440

- Delay in paying off in the past: -0.530

- All credits at this bank paid back duly: -0.715

- No credits taken: -0.757

Bar Chart of Credit history

Conclusion:

The analysis indicates a moderate level of distribution bias in the 'Credit history' feature. The category 'existing credits paid back duly till now' is overrepresented, suggesting potential systemic biases in historical credit opportunities.

Recommendations:

- Review the credit allocation processes to ensure equitable opportunities.

- Consider additional data collection or preprocessing to address identified biases.