

Bias Detection Report

Age Distribution Bias Report

This report analyzes the distribution bias in the 'patient_age' feature of the dataset 'MIMIC-IV.csv'. Various statistical methods were applied to assess the distribution characteristics.

Analysis Summary

- **Bias Type**: Distribution
- **Relevant Feature**: patient_age

Detection Methods and Results

1. **Skewness**:

- **Value**: -0.1917
- **Interpretation**: The age distribution is slightly skewed to the left but is close to symmetric.
- **Bias Level**: No significant bias detected.

2. **Kurtosis**:

- **Value**: -0.8396

- **Interpretation**: The distribution has lighter tails than normal (platykurtic).

- **Bias Level**: No significant bias detected.

3. **Z-score Outlier Detection**:

- **Outlier Percentage**: 0.0%

- **Interpretation**: No significant outliers were identified.

- **Bias Level**: No significant bias detected.

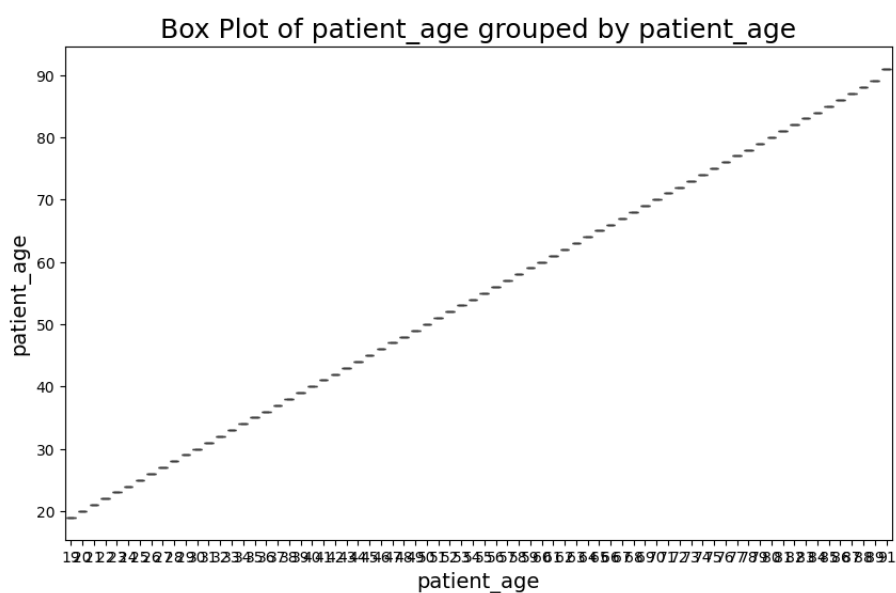
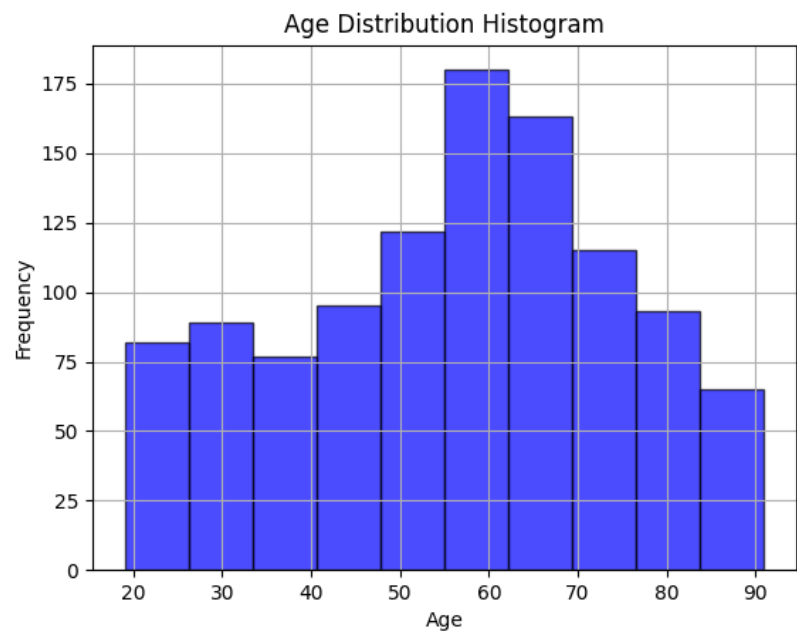
4. **Shannon Entropy Framework**:

- **Calculated Entropy**: 2.2515

- **Maximum Entropy**: 2.3026

- **Interpretation**: Entropy close to maximum suggests a fairly even distribution.

- **Bias Level**: No significant bias detected.



Conclusions and Recommendations

The 'patient_age' feature demonstrates a balanced and symmetric distribution with no significant bias detected across multiple analytical methods. The visualizations further support these findings, indicating an even spread of ages.

You can confidently use this feature for further analysis as the distribution bias is minimal. No adjustments or transformations are required at this stage.