

# Bias Detection Report

## Dataset Overview

Dataset Shape: (611, 9)

## Statistical Summary

	count	mean	std	min	25%	50%	75%	max
YearsExperience	611.00	4.50	1.51	2.00	3.00	4.00	6.00	8.00
GapYears	611.00	0.99	1.12	0.00	0.00	1.00	2.00	3.00
shortlisted	611.00	0.57	0.50	0.00	0.00	1.00	1.00	1.00

## Distribution Analysis

### Gender Distribution in Applicants:

Applicants (Male): 49.9%  
Applicants (Female): 49.3%  
Applicants (Non-binary): 0.8%

### Gender Distribution in Initially Shortlisted Candidates:

Shortlisted (Female): 76.5%  
Shortlisted (Male): 22.3%  
Shortlisted (Non-binary): 1.1%

### Percentage of Candidates Shortlisted Within Each Gender Group (Before Bias Filtering):

Female: 88.7% of Female candidates shortlisted  
Male: 25.6% of Male candidates shortlisted  
Non-binary: 80.0% of Non-binary candidates shortlisted

### Gender Distribution in Accepted Candidates (After Bias Filtering):

Accepted (Female): 76.6%  
Accepted (Male): 22.3%  
Accepted (Non-binary): 1.1%

### Percentage of Candidates Accepted Within Each Gender Group (After Bias Filtering):

Female: 44.5% of Female candidates accepted  
Male: 12.8% of Male candidates accepted  
Non-binary: 40.0% of Non-binary candidates accepted

Fairness Metrics

Disparate Impact Ratio (Gender): 0.29 (Threshold: 0.8)  
Note: DIR < 0.8 indicates significant bias (EEOC standard).

Fairness Metrics for Gender

Metric	Value
Demographic Parity Difference	0.631

Feature Contribution Check

Features potentially correlated with Gender (p-value < 0.05):  
- YearsExperience (p-value: 0.000)  
- EducationLevel (p-value: 0.000)  
- University (p-value: 0.000)  
- GapYears (p-value: 0.000)  
Recommendation: These features may act as proxies for gender, contributing to bias.

Privacy Check

- email: Consider removing or anonymizing.

Accepted Candidates Summary

Total Shortlisted Candidates (Before Bias Filtering): 349  
Total Accepted Candidates (After Bias Filtering): 175  
Candidates were filtered based on fairness metrics to reduce bias.

Accepted Candidates:

Bella Carter, Daisy Evans, Fiona Gray, Hazel Ivy, Mason Nolan, Vera Yang, Xena Bloom, Alex Ellis, Casey Grant, Ella Jones, Gia Lane, Kara Pace, Ola Vale, Seth Zane, Adam Judd, Dana Moss, Hana Quinn, Ike Reed, Jill Shaw, Pia Bell, Rex Cole, Sia Dunn, Wyn Iris, Yara Kane, Zed Lane, Ava Moss, Gia Shaw, Hank Tate, Ivy Vale, Mae Bell, Pete Ford, Tina Iris, Vera Kane, Xena Moss, Yuri Nash, Chloe Brooks, Mia Collins, Harper Davis, Lily Ellis, Ella Foster, Lillian Hill, Alexander James, Madison King, Joseph Long, Hazel Morris, Brooklyn Perry, Lydia Ross, Clara Taylor, Aurora Thompson, Violet Walker, ... (and more)