Fairfluence Report

The dataset used to create this report:
https://huggingface.co/datasets/scikit-learn/adult-census-income

Dataset Summary

Metric	Value
Number of Columns	15
Number of Records	32561
Total Cells	488415
Missing Cells	0
Missing Percentage	0.00%
Duplicate Records	24
Duplicate Percentage	0.07%
Memory Usage	18070.45 KB
Average Record Size	568.29 Bytes

Column Type Summary

Column Type	Count
Categorical Columns	10
Numeric Columns	5
Text Columns	0

Alerts

Level	Message
Info	Column "age" has no missing values
Info	Column "workclass" has no missing values
Info	Column "fnlwgt" has no missing values
Info	Column "education" has no missing values
Info	Column "education.num" has no missing values
Info	Column "marital.status" has no missing values
Info	Column "occupation" has no missing values
Info	Column "relationship" has no missing values
Info	Column "race" has no missing values
Info	Column "sex" has no missing values
Info	Column "capital.gain" has no missing values
Info	Column "capital.loss" has no missing values
Info	Column "hours.per.week" has no missing values
Info	Column "native.country" has no missing values

Quality Results

F1 Score Report

F1 Score (Original)	F1 Score (Statistic)	F1 Score (Influence)
0.8741	0.8765	0.8742

Outlier Summary

Influence Outliers (Count)	Influence Outliers (%)	Mahalanobis Outliers (Count)	Mahalanobis Outliers (%)	Overlap (Count)
486	1.4926	2031	6.2375	33

Fairness Results

Top Patterns

Pattern Column 1	Pattern Value 1	Support	Responsibility	Interestingness
income	>50K	0.2408	103.8325	431.154
occupation	Adm-clerical	0.1155	10.0688	87.1918
workclass	Self-emp-not-inc	0.078	5.251	67.3124
occupation	Exec-managerial	0.1245	3.7936	30.4608
fnlwgt	(18826.999, 140854.0]	0.3333	7.4396	22.3232

Fairness (No Influence)

Sensitive Feature	DPD	DPD Fair	EOD	EOD Fair	PPV Diff	PPV Fair
age	0.5	No	1.0	No	0.6667	No
marital.status	0.3707	No	0.7778	No	0.2636	No
occupation	0.5182	No	0.8095	No	0.2824	No
race	0.2427	No	0.6607	No	0.0833	Yes
sex	0.1663	No	0.0644	Yes	0.116	No
native.country	0.5238	No	1.0	No	0.5	No

Fairness (With Influence)

Influence Group	Positive Group	Mean (Positive)	Mean (Other)	Mean Difference	Influence Fair	Cohen Fair
income	>50K	-0.00001278	0.00000402	-0.00001680	No	No
occupation	Adm-clerical	-0.00000258	0.00000030	-0.00000289	No	Yes
workclass	Self-emp-not-inc	-0.00000200	0.00000014	-0.00000213	No	Yes

| occupation | Exec-managerial | -0.00000090 | 0.00000009 | -0.00000100 | No | Yes |
| fnlwgt | (18826.999, 140854.0] | -0.00000067 | 0.00000029 | -0.00000096 | No | Yes |