

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

Info	Column "income" has no missing values
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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	103.8303	431.145
occupation	Adm-clerical	0.1155	10.0686	87.1899
workclass	Self-emp-not-inc	0.078	5.2509	67.3109
occupation	Exec-managerial	0.1245	3.7935	30.4601
fnlwgt	(18826.999, 140854.0]	0.3333	7.4395	22.3228

Fairness (No Influence)

Sensitive Feature	DPD	DPD Fair	EOD	EOD Fair	PPV Diff	PPV Fair
age	0.5	False	1.0	False	0.6667	False
marital.status	0.3707	False	0.7778	False	0.2636	False
occupation	0.5182	False	0.8095	False	0.2824	False
race	0.2427	False	0.6607	False	0.0833	True
sex	0.1663	False	0.0644	True	0.116	False
native.country	0.5238	False	1.0	False	0.5	False

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	False	False
occupation	Adm-clerical	-0.00000258	0.00000030	-0.00000289	False	True
workclass	Self-emp-not-inc	-0.00000200	0.00000014	-0.00000213	False	True

occupation	Exec-managerial	-0.00000090	0.00000009	-0.00000100	False	True
fnlwgt	(18826.999, 140854.0]	-0.00000067	0.00000029	-0.00000096	False	True