

Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification

Supplementary Materials

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	All	Female	Male	Darker	Lighter	DF	DM	LF	LM
MSFT									
Error Proportion	-	76.9%	23.1%	93.6%	6.4%	70.5%	23.1%	6.4%	0.0%
Error Count	78	60	18	73	5	55	18	5	0
FACE++									
Error Proportion	-	95.9%	4.1%	74.0%	26.0%	72.4%	1.6%	23.6%	2.4%
Error Count	123	118	5	91	32	89	2	29	3
IBM									
Error Proportion	-	74.7%	25.3%	85.7%	14.3%	61.0%	24.7%	13.6%	0.6%
Error Count	154	115	39	132	22	94	38	21	1

Table 1: The error proportion and count contribution of each subgroup to the overall error rates for the 3 evaluated commercial classifiers.

Classifier	Gender	Skin Type	n	UC	PPV(%)	FPR(%)	TPR(%)	Error Rate(%)
MSFT	Female	I	59	1	100	0.0	98.3	1.7
		II	176	0	100	0.0	98.9	1.1
		III	61	0	100	0.0	96.7	3.3
		IV	36	1	100	0.0	100	0.0
		V	141	3	94.6	4.7	76.8	23.2
		VI	94	2	85.2	8.3	75.0	25.0
	Male	I	54	0	98.2	1.7	100	0.0
		II	263	0	99.2	1.1	100	0.0
		III	68	0	97.1	3.3	100	0.0
		IV	29	0	100	0.0	100	0.0
		V	129	2	79.1	23.2	95.3	4.7
		VI	160	16	85.2	25.0	91.7	8.3
FACE++	Female	I	59	0	96.3	3.7	88.1	11.9
		II	176	0	99.4	0.4	90.3	9.7
		III	61	0	100	0.0	91.8	8.2
		IV	36	0	100	0.0	86.1	13.9
		V	141	5	97.9	1.6	67.6	32.4
		VI	94	8	100	0.0	53.5	46.5
	Male	I	54	0	88.1	11.9	96.3	3.7
		II	263	1	93.9	9.7	99.6	0.4
		III	68	0	93.2	8.2	100	0.0
		IV	29	0	85.3	13.9	100	0.0
		V	129	1	74.1	32.4	98.4	1.6
		VI	160	24	77.3	46.5	100	0.0
IBM	Female	I	59	0	100	0.0	94.9	5.1
		II	176	0	99.4	0.4	92.6	7.4
		III	61	0	100	0.0	91.8	8.2
		IV	36	0	100	0.0	91.7	8.3
		V	141	0	96.9	2.3	66.7	33.3
		VI	94	0	58.8	21.9	53.2	46.8
	Male	I	54	0	94.7	5.1	100	0.0
		II	263	1	95.3	7.4	99.6	0.4
		III	68	0	93.2	8.2	100	0.0
		IV	29	0	90.6	8.3	100	0.0
		V	129	1	72.7	33.3	97.7	2.3
		VI	160	0	74.0	46.8	78.1	21.9

Table 2: Disaggregated Intersectional Performance Results by Gender and Fitzpatrick Skin Type.
UC = Undetected Count, TPR = True Positive Rate, FPR = False Positive Rate, PPV = Positive Predictive Value, Error Rate = 1 - TPR.