

Practical of CV:HCI

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1st Assignment: Color-based skin classifier

- ▶ Idea: Histogramm-based approach
 - ▶ HSV color space
 - ▶ 256×256 bins (H and S, V is omitted)
 - ▶
$$p_{\text{Skin}}(H, V) = \frac{\# \text{ skin pixels in bin } (H, V)}{\# \text{ skin pixels in bin } (H, V) + \# \text{ non-skin pixels in bin } (H, V)}$$
 - ▶ Don't forget to multiply $p_{\text{Skin}}(H, V)$ with 256.
- ⇒ $F_1 = 0.860325$ (# 12)

2nd Assignment: Person detector

- ▶ Idea: Fiddle around with parameters
 - ▶ `hog.blockStride = Size(16, 28)`
 - ▶ `hog.nbins = 20`
 - ▶ `hog.nbins = 200`
 - ▶ `hog.winSigma = 30`
- ⇒ $F_1 = 0.976542$ (# 7), 9.109s (#3)

3rd Assignment: Train a FACE Similitude Measure

- ▶ Idea: PCA + Distance measure
 - ▶ Distance measure
 - ▶ Euclidean distance was good
 - ▶ Cosine distance was worse than Euclidean distance
 - ▶ Preprocessing: Crop image to middle 60%; flatten RGB image
 - ▶ 150 components, only first 200 images because of server speed
 - ▶ Grayscale
- ⇒ $1 - \text{EER} = 0.640878$ (# 6)