Practical of CV:HCI

WS 2016 / 2017 # 4 (2.477745)

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16. January 2017

1st Assignment: Color-based skin classifier

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

$\Rightarrow$ $F_1 = 0.860325$ (# 12)

2nd Assignment: Person detector

- Idea: Fiddle around with parameters
- `hog.blockStride = Size(16, 28)`
- `hog.nbins = 20`
- `hog.winSigma = 30`
- polynomial svm kernel with margin

$\Rightarrow$ $F_1 = 0.976542$ (# 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: Grayscale + Crop image to middle 60%;
- 150 components, only first 200 images because of server speed

$\Rightarrow$ $1 - \text{EER} = 0.640878$ (# 6)