

Image Processing and Computer Vision - Lab 7



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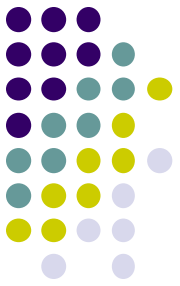


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Face Detection and Tracking

- Today
 - 1,5 hours
- Text of the exercises/tasks
 - on the Teaching Portal
- You need a webcam (and a face)
 - alternatively, you can use still images or a video
- Goal
 - Experiment with two pre-trained classifiers, by detecting some faces



Face Detection and Tracking

- Three exercises:
 1. Face detection with a Haar-like classifier
 2. Face detection with an LBP classifier
 3. Detection of eyes, nose, etc. with Haar-like classifiers



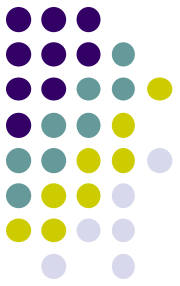
Face Detection in OpenCV

- OpenCV provides pre-trained model for classifying faces
 - as XML files in the “data” folder (OpenCV source)
 - we can skip the training phase!
 - it provides methods to train a new classifier, if needed
- We will use a Cascade Classifier with
 - Viola-Jones detector with Haar-like features
 - Local Binary Patterns (LBP)

Cascade Classifier in OpenCV



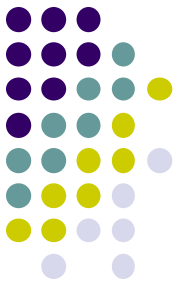
- We need to:
 1. load the XML trained model (one for each classifier)
 - `cv2.CascadeClassifier()`
 - in opencv-python, XML models are available in, e.g.,
`cv2.data.harcascades + 'haarcascade_frontalface_default.xml'`
 2. detect the face position in the image
 - `detectMultiScale()` method, of the object built before
 3. draw a contour (e.g., a rectangle) around the face, by using the coordinates from the previous step
 - for example, with the `rectangle()` method



Face Detection and Tracking

- Hints, insights, links, etc. are in the text of the exercises
 - I am here for you...
 - ... please ask if you need any help or clarification

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