Lab exercises

- Face detection
    - Import the face_recognition api
    - Upload multiple faces photo
    - Load the photo
    - Find the locations of the faces
    - Detect the landmarks of the faces
    - Reading material
        - https://face-recognition.readthedocs.io/en/latest/face_recognition.html
- Face recognition
    - Import the face_recognition api
    - Upload two single face photos
    - Load the photos
    - Compute the face embeddings of the photos
    - Compute the distance between the embeddings and return a True or False whether the faces match
    - Reading material
        - https://www.analyticsvidhya.com/blog/2018/08/a-simple-introduction-to-facial-recognition-with-python-codes/
- Face identification
    - Import the face_recognition api
    - Upload two group photos with the same group of people
    - Load the photos
    - Locate the faces, crop the faces and compute face embeddings for all faces
    - Label the faces with id numbers with same ids for the same persons
- Additional materials
    - Enable GPU: https://medium.com/deep-learning-turkey/google-colab-free-gpu-tutorial-e113627b9f5d

Further exercises

- Using LFW dataset
    - Visualize clusters of the face embeddings
    - Visualize PCA of the face embeddings

    - Visualize manifold of the face embeddings
    - Do classification on the face embeddings
        - Using LDA, SVM, Boosting
- How to load LFW dataset
    - https://jakevdp.github.io/PythonDataScienceHandbook/05.10-manifold-learning.html

Links

https://face-recognition.readthedocs.io/en/latest/face_recognition.html

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