Face Recognition using Face Images obtained from the Internet

Computer Vision (CS6350) **TPA-2**

1. Problem Statement

In the standard setup of Face Recognition (FR), a model (deep or shallow) [1, 2, 3, 4] is learned using training and validation data. The performance of the model is then assessed using the test data. In this assignment, the students will be expected to train a model using a few labeled data coupled with any standard dataset (either fine-tune model with few labeled data after training with any standard dataset OR augment any standard dataset with the labeled data and train the model). During the test time, given a set of images in the form of a web page, the designed software is expected to parse the web page to extract all the images from the page for recognition.

2. Input

A webpage having a structure similar to

- i. http://www.cse.iitm.ac.in/~vplab/ (On the menu on LHS, go to People -> Current people)
- ii. https://www.cse.iitm.ac.in/listpeople.php?arg=MSQw.

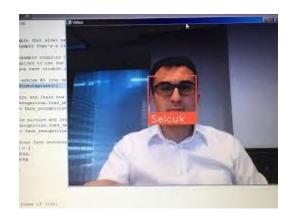
3. Output

- A 3 column table containing the image extracted from the webpage and the corresponding name and confidence score respectively.
- Should work online, given any website link.

4. Datasets

VGG face [3], PIE, LFW datasets.

5. Face Recognition example



6. References

- 1. Zheng et al., \Ring Loss: Convex Feature Normalization for Face Recognition", CVPR 2018.
- Ranjan et al., \HyperFace: A Deep Multi-Task Learning Framework for Face Detection, Landmark Localization, Pose Estimation, and Gender Recognition", TPAMI 2019.

3.

- 4. "Soft-Margin Learning for Multiple Feature-Kernel Combinations With Domain Adaptation, for Recognition in Surveillance Face Dataset", Samik Banerjee and Sukhendu Das; In Workshop on Biometrics, 29th IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops
- 5. Schro et al., \FaceNet: A Uni ed Embedding for Face Recognition and Clustering", CVPR 2015.
- 6. Parkhi et al. \Deep face recognition", BMVC 2015.
- 7. Simonyan et al., \Very Deep Convolutional Networks for Large-Scale Image Recognition", ICLR 2015.
- 8. Richardson, Leonard. "Beautiful soup documentation.", Technical Report, 2007.
- 9. https://www.analyticsvidhya.com/blog/2021/06/learn-how-to-implement-face-recognition-using-opency-with-python/