

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 web page with few face images within it, 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>.

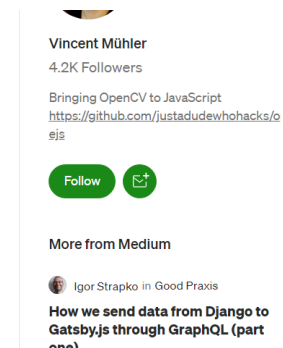
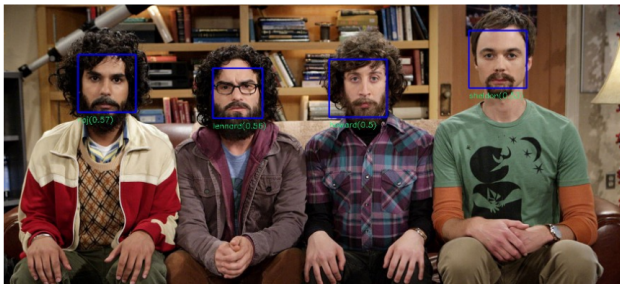
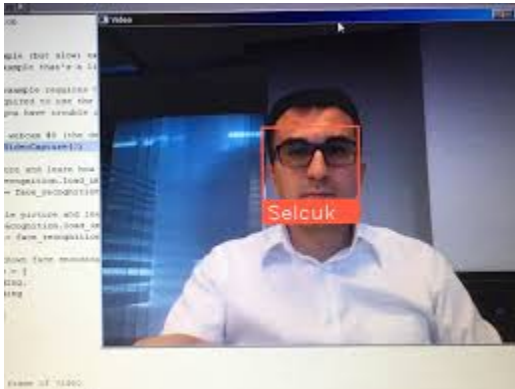
3. Output

- 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 on web pages examples



6. References

1. Zheng et al., "Ring Loss: Convex Feature Normalization for Face Recognition", CVPR 2018.
2. 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 Unified 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. <https://www.analyticsvidhya.com/blog/2021/06/learn-how-to-implement-face-recognition-using-opencv-with-python/>

9. Meng, Qiang, et al. "Magface: A universal representation for face recognition and quality assessment." *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2021.
10. Deng, Jiankang, et al. "Masked face recognition challenge: The insightface track report." *Proceedings of the IEEE/CVF International Conference on Computer Vision*. 2021.
11. Zhu, Zheng, et al. "Webface260m: A benchmark unveiling the power of million-scale deep face recognition." *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2021.

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