

PROPOSAL

Age Estimation from facial parts using compact multi stream Convolutional neural network

by

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INTRODUCTION

- *Age plays a key role in many real-world applications such as preventing purchase of alcohol and tobacco by minors, soft biometrics, electronic customer relationship and as age synthesis in Forensic Art to find lost people*
- Face age estimation is defined as the possibility of “labelling a face image automatically with the exact age (e.g., 30 years) or the age group (e.g., young, adult, 8-13 years old) of the individual face”.
- Our proposed approach uses deep learning for age estimation, adopts facial parts as input and a compact multi stream CNN as architecture.

DATASET

- We evaluated our method using the Adience benchmark, which was designed for age and gender classification for face images
- the entire data set includes 26,580 images of 2,284 subjects, with eight unbalanced age group classes (0-2, 4-6, 8-13, 15-20, 25-32, 38-43, 48-53, 60-above).
- Adience data set consists of images automatically uploaded to Flickr from smartphone devices.
- these images were uploaded without prior manual filtering,

PROCEDURE

1. A single RGB image is input to the system

2. a face detector is applied followed by a 2D facial landmarks estimator.
3. based on the landmark coordinates, the facial parts of interest are preprocessed and cropped.
4. Each facial part feeds a specific stream of CNN, whose outputs are concatenated and processed by a sequence of fully connected layers.
5. Finally, a softmax function returns the probabilities of the person belonging to each age group, such that the estimation will be the highest probability group.

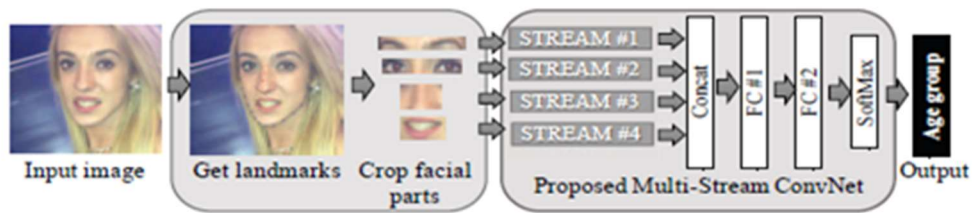


Figure 1. The proposed pipeline has a dedicated and compact stream of convolutional neural networks for each facial part and uses a multilayer perceptron to combine them.

REFERENCES

https://openaccess.thecvf.com/content_ICCVW_2019/papers/CEFRL/Angeloni_Age_Estimation_From_Facial_Parts_Using_Compact_Multi-Stream_Convolutional_Neural_ICCVW_2019_paper.pdf