AGE AND GENDER CLASSIFICATION USING CNN

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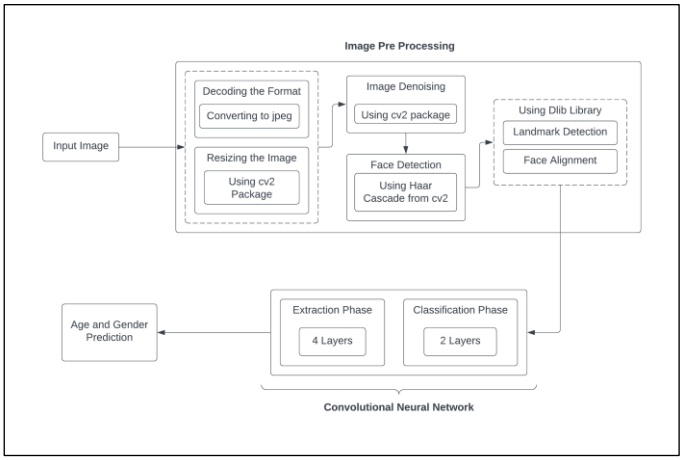
Abstract

The classification of age and gender has drawn increased attention recently because of its significance in creating user-friendly intelligent systems. Age estimation from a single facial image has been a key task in the fields of image processing and computer vision. Convolutional Neural Network (CNN) based techniques have been frequently adopted for the classification problem in the recent past because of their precise results in facial analysis. This study presents an end-to-end CNN approach for obtaining accurate gender and age group classification of real-world faces. The complete feature extraction and classification processes are included in the two-level CNN architecture. The feature extraction task pulls features that are related to gender and age while the classification assigns the facial photographs to the proper gender and age group. The experiment results appear to support the claim that our model may perform better in gender and age group categorization when analysed for classification accuracy using the equivalent Adience benchmark. Technically speaking, our network will be trained and tested on both Adience (original) and IMDB-WIKI dataset

Architecture Diagram



Significance of the Project

The process of age and gender classification is a crucial stage for many applications such as face verification, aging analysis, ad targeting and targeting of interest groups.

Conclusion

In this work, we tackled the problem of age group and gender classification of unfiltered real-world facial images. The gender identification and age estimation tasks were posed as a binary and a multi-class classification problem respectively. A six layer CNN architecture has been proposed and implemented for the same. Our proposed model is originally trained on the Adience dataset. It has achieved a gender accuracy of 84.68% and an accuracy of 40.29% for the age metrics. Haar Cascades has been employed to improve the results in the aspect of face detection.

Conference/Journal Publication Details (If Any)

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