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| **Facial Features Based Human Age, Gender And Ethnicity Identification System** | | | | | |
| **UG Project work (EC18811) : 2021-2022** | | | | | |
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| **ABSTRACT** | | | | | |
| Since the rise of social platforms and social media, automatic age, ethnicity, and gender classification have been relevant to a growing number of applications. Nevertheless, the performance of existing methods on real-world images is still significantly lacking, especially when compared to the tremendous leaps in performance recently reported for the related task of face recognition. As a result, we show that learning representations using deep-convolution neural networks (CNN) can result in a considerable improvement in performance on these tasks. To this end, we propose a simple convolutional net design that can be employed even when there is a small amount of learning data. For image-based gender, age, and ethnicity estimates, deep neural networks with pre-trained weights are used. VGG is used to investigate transfer learning. To increase prediction accuracy, examination on the effects of modifications in various design schemes and training settings on pre-trained models is done. Finally, a hierarchy of deep CNNs is explored, which first classifies participants by gender and then predicts age and ethnicity using separate models.  Key Terms - Deep Learning, Convolution Neural Network, Deep Transfer Learning, VGG-16, RESNET-50 | | | | | |
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