

A Deep Learning Approach for Recognizing Age, Emotion and Gender in Facial Expressions

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Abstract: *The automatic prediction of emotion, age, and gender from facial images has recently garnered significant attention due to its wide range of applications in various facial analysis problems. This study aims to explore the relationship between personality traits, intelligence, and facial images. Leveraging deep learning based on convolutional neural networks (CNN), the study predicts emotion, gender, and age group of facial images with high accuracy. Deep learning (DL) based detection outperforms traditional methods such as K-Nearest Neighbour (KNN) and Support Vector Machine (SVM) combined with image processing. The model leverages the power of deep learning to accurately predict these attributes from facial images. By training on a large dataset of labelled images, the model learns to recognize patterns and make accurate predictions. This project focuses on the recognition of age, gender, and facial emotions using Convolutional Neural Networks (CNN). The Facial Expression Recognition (FER) dataset is utilized for emotion recognition and pre-trained models are utilized for age and gender recognition. Our proposed model is compared with other existing models and current research, where the proposed model gives better accuracy.*

Keywords: Deep Learning, Convolution Neural Networks (CNN), Support Vector Machine (SVM), K-Nearest Neighbour (KNN), Facial Expression Recognition (FER)

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