

عنوان مقاله:

Facial Expression Detection using Convolution Neural Network and Data Transformation

محل انتشار:

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خلاصه مقاله:

Facial expression detection has received significant attention from researchers and the industry due to its potential in the entertainment industry and human-computer interaction. In this task, each image is assigned to an emotion category based on its content. Facial expression detection is considered a challenging task, owing to various alternative expressions for a single category and the low quality of images. It is critical to extract important characteristics and have enough data for better classification. As a result, in this research, a convolutional neural network-based model is proposed to extract spatial features and improve the final classification accuracy with assists of data augmentation. Further, the impact of various optimization algorithms on the proposed customized convolution neural network performance is evaluated and compared. According to obtained accuracy, precision, recall, and f1-score, the suggested method improved facial emotion recognition by about 5% compared to earlier transfer learning-based methods and about 7% compared to the hybrid CNN-SVM model.

کلمات کلیدی:

Facial Expression detection, Convolution Neural Network, Data Augmentation, Optimization Algorithm

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