

Performance Evaluation of MobileNetV2 CNN Architecture in Localized Datasets

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Abstract: Facial features of humans are part of physiological characteristics that are the basis for identity verification. Face Recognition technology has expanded into a more thorough process to increase the accuracy rate in recognizing individuals. This paper assessed the performance of face recognition in Deep Convolutional Neural Networks with the application of localized datasets. Five (5) people were used as a class, with thirty (30) images per person. A total of 150 images were gathered from photo albums and collections. The images were preprocessed with some of the basic image processing techniques, including histogram equalization cropping, and resizing, before training using MobileNetv2 Pre-trained CNN architecture. Earlier layers of this architecture were used as feature extractors. The final 2-3 layers were fine-tuned following the number of classes. During the training, images were divided into 80% for training datasets, and 20% for testing and validation datasets. The graphical illustration showed an accuracy rate of 90% as well as the generation of a confusion matrix. The results indicate that MobileNetV2 is a promising CNN architecture that can be used in Face Recognition Technology with localized datasets

Keywords: Face Recognition, Deep Learning, Image Processing, MobileNetV2

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