

The effect of color on the accuracy of the palmprint recognition network

Abstract

Palmprint recognition has become increasingly sophisticated in recent years as a contactless biometric identification method. Currently, a number of methods and datasets for palmprint recognition are available, including the XJTU-UP dataset developed by Shao et al. (2021). This dataset comprises over 20,000 images collected by five brands of smartphones in an unconstrained manner and has already proven its ability to represent real-life scenarios while achieving high accuracy in many palmprint recognition works (Wan et al., 2022). Our plan is to research the influence of color on palmprint recognition by using the same encoder network and loss function to train the model on both RGB and black and white images. We will modify only the color of the dataset and input it into ResNet or VGG16 to extract features and then make final predictions. Finally, we will evaluate the contribution of color to the model's accuracy. Knowing this can help us reduce the size of the dataset to one-third of its original size if we find that color does not affect the overall model performance

KEY WORDS: Palmprint recognition; deep learning; computer vision

Reference:

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