ABSTRACT

Signatures are a unique form of personal identification, but manual use in the verification process can be inefficient and prone to errors. This research aims to determine the ownership of a person's signature by developing a signature identification system using the PCA (Principal Component Analysis) and K-NN (K-Nearest Neighbor) methods. This research uses a deep learning approach by utilizing the PCA and K-NN architecture. The PCA method is used to reduce the dimensionality of the signature image, thus retaining significant information while reducing data complexity. Afterwards, KNN is used as the classification algorithm to compare the reduced dimensional signature image with the existing training data. This process helps the system in recognizing distinctive patterns in the signature. In this study, the dataset used was 5 classes, where each class amounted to 100 signature images, where the dataset was divided into 2 folders, namely training and testing. For training datasets as much as 80% with a total of 400 images and testing datasets around 20% with a total of 100 images. In the results of this study, the highest average accuracy value was obtained, namely Accuracy 90.5%, Precision 92.94%, and Recall 90.5%.