

Abstract

Balinese script is a Balinese cultural heritage which must be maintained and preserved. However, at this time the Balinese script is rarely used, which causes many people to be unable to write and read Balinese script properly and correctly. With the rapid development of technology, the Balinese handwriting classification system can assist in recognizing and reading Balinese handwritten characters. Therefore, in this final project research, an Android-based mobile application is developed that can classify Balinese script handwritten images. The classification model used in this research is a convolutional neural network (CNN) with MobileNetV3-Large and EfficientNet-B0 architectures. Applications are integrated with models using two architectures, namely applications using existing models on the server and applications using existing models on mobile devices. The results of model testing show that EfficientNet-B0 is the most optimal model with accuracy performance and f1-scores of 0,9905 and 0,9905 on the test data. Furthermore, the results of application testing show that applications using the MobileNetV3-Large model on mobile devices have the lowest average end-to-end classification time, which is 61,9465ms.

Keywords: balinese script, classification, convolutional neural network, mobile application