PATTERN RECOGNITION OF NGALAGENA SCRIPT BASED ON RARANGKEN SCRIPT IN SUNDANESE SCRIPT USING CONVOLUTIONAL NEURAL NETWORK METHOD

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ABSTRACT

This study aims to apply pattern recognition technology, particularly through the Convolutional Neural Network (CNN) approach, to identify and translate Sundanese script accurately. It focuses on the pattern recognition of the Rarangken script based on the Ngalagena script within the context of Indonesian cultural heritage. The study employs a CNN model based on MobileNetV2 with transfer learning, trained for 50 epochs using the Adam optimizer and a learning rate of 0.0001. This training resulted in a training accuracy of 98.75% and a testing accuracy of 96.95% over 1 hour and 23 minutes. The findings indicate that the simpler CNN architecture, without data augmentation, achieves the highest accuracy of 99.26%, while the CNN model with augmentation reaches an accuracy of 94.42% in 2 hours and 22 minutes. These results facilitate practical applications in the fields of education and cultural preservation, demonstrating how modern technology can effectively contribute to the maintenance of traditional cultural elements in the digital era.

Keywords: CNN, MobileNetV2, Pattern Recognition, Sundanese Script.