

ABSTRAK

Aksara Lota merupakan salah satu warisan budaya masyarakat Ende yang semakin jarang digunakan sehingga berisiko mengalami kepunahan. Penelitian ini bertujuan mengembangkan sistem identifikasi citra Aksara Lota menggunakan metode *Transfer Learning* dengan arsitektur *MobileNetV2* serta mengevaluasi kinerja model yang dihasilkan. Penelitian menggunakan metode Research and Development (R&D) dengan dataset sebanyak 480 citra huruf Aksara Lota yang diperoleh dari digitalisasi buku dan tulisan tangan responden. Data melalui tahap preprocessing dan augmentasi sebelum digunakan dalam proses pelatihan model. Hasil penelitian menunjukkan bahwa kombinasi parameter terbaik diperoleh menggunakan optimizer Adam, batch size 16, epoch 15, dan learning rate 0,001 dengan validation *accuracy* sebesar 97,22%. Hasil pengujian menggunakan data testing memperoleh *accuracy* sebesar 96%, *precision* sebesar 97%, *recall* sebesar 96%, dan *F1-score* sebesar 96%. Selain itu, hasil *User acceptance* Testing memperoleh nilai rata-rata 4,60 dari skala 5 yang menunjukkan bahwa sistem dapat diterima dengan baik oleh pengguna. Berdasarkan hasil tersebut, *MobileNetV2* terbukti efektif untuk mengidentifikasi citra Aksara Lota dan berpotensi mendukung upaya digitalisasi serta pelestarian budaya lokal.

Kata kunci: Aksara Lota, Identifikasi Citra, Transfer Learning, *MobileNetV2*, Deep Learning.

ABSTRACT

Lota Script is one of the cultural heritages of the Ende community that is increasingly rarely used and is therefore at risk of extinction. This study aims to develop an image identification system for Lota Script using the *Transfer Learning* method with the *MobileNetV2* architecture and to evaluate the performance of the resulting model. The study employed the Research and Development (R&D) method using a dataset of 480 Lota Script character images obtained from book digitization and handwritten samples collected from respondents. The data underwent preprocessing and augmentation before being used for model training.

The results showed that the best parameter combination was achieved using the Adam optimizer, a batch size of 16, 15 epochs, and a learning rate of 0.001, resulting in a validation *accuracy* of 97.22%. Evaluation using testing data achieved an *accuracy* of 96%, *precision* of 97%, *recall* of 96%, and *F1-score* of 96%. In addition, the *User acceptance* Testing obtained an average score of 4.60 out of 5, indicating that the system was well accepted by users. These results demonstrate that *MobileNetV2* is effective for Lota Script image identification and has the potential to support the digitalization and preservation of local cultural heritage.

Keywords: Lota Script, Image Identification, Transfer Learning, *MobileNetV2*, Deep Learning.