

INTISARI

PENGENALAN AKSARA LONTARA MENGGUNAKAN CONVOLUTIONAL NEURAL NETWORK

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Aksara Lontara merupakan aksara tradisional masyarakat Bugis-Makassar. Saat ini aksara Lontara perlu mendapat perhatian karena telah jarang digunakan. Minimnya penggunaan aksara Lontara mengakibatkan timbulnya kecenderungan seseorang mengalami kesulitan dalam mengenali tulisan aksara Lontara. Penelitian mengenai pengenalan aksara Lontara sudah pernah dilakukan sebelumnya. Proses pengenalan aksara Lontara menggunakan jaringan syaraf tiruan *backpropagation*. Hasil percobaan untuk mengenali aksara Lontara mencapai akurasi hingga 95,2%.

Penelitian ini dilakukan untuk meningkatkan jumlah pengenalan aksara lontara. Terdapat 138 kelas aksara Lontara yang akan diidentifikasi. *Convolutional neural network* (CNN) merupakan salah satu metode yang efektif digunakan dalam proses identifikasi. Arsitektur CNN terdiri dari 3 lapisan konvolusi dan 2 lapisan *fully connected* digunakan dengan harapan dapat meningkatkan akurasi pengenalan aksara Lontara.

Hasil penelitian dengan menggunakan model CNN output 138 kelas serta model evaluasi *10-fold* menunjukkan nilai rata-rata akurasi mencapai 98,63%. Parameter yang digunakan yaitu ukuran *filter* 3x3, *learning rate* 0.001, *batch size* 64 dan *epoch* 90. Penerapan teknik *dropout* pada lapisan *fully connected* berhasil meningkatkan nilai rata-rata akurasi mencapai 99,25%.

Kata kunci: Aksara Lontara, *convolutional neural network*, CNN, pengenalan pola, *dropout*

ABSTRACT

LONTARA CHARACTER RECOGNITION USING CONVOLUTIONAL NEURAL NETWORK

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Lontara script is a traditional script of the Bugis-Makassarese people. At present, the Lontara script needs attention because it has rarely been used. The lack of use of the Lontara script resulted in a tendency for someone to have difficulty recognizing the Lontara script. Research on Lontara recognition has been done before. The Lontara alphabet recognition process uses backpropagation neural networks. The results of experiments to recognize the Lontara script reached an accuracy of up to 95.2%.

This research was conducted to increase the number of Lontara scripts. There are 138 Lontara script classes to be identified. A convolutional neural network (CNN) is one of the effective methods used in the identification process. The CNN architecture consists of 3 convolution layers and 2 fully connected layers used in hopes of increasing the accuracy of Lontara script recognition.

The results of the study using 138 CNN model output class and 10 times the evaluation model the average value of accuracy reached 98.63%. The parameters used are filter size 3x3, learning rate 0.001, batch size 64 and age 90. The application of the dropout technique on fully connected layers succeeded in increasing the average completion rate to 99.25%.

Keywords: Lontara character, *convolutional neural network*, CNN, pattern recognition, *dropout*