ABSTRACT

CLASSIFICATION OF YOGA MOVEMENTS WITH CONVOLUTIONAL NEURAL NETWORK MODEL USING STREAMLIT

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Indonesian people are not fit and lack sports activities, therefore one of the alternative sports activities is yoga. Yoga is a type of exercise that has two important components, namely breathing, and movement. Yoga movements also vary and can be distinguished from body curves, but ordinary people may not be familiar with yoga movements. With advances in technology and computer performance intelligence, it is now possible for computers to recognize an image for object recognition, namely detecting yoga movements with the digital image classification method. To make it easier to classify yoga movements, you can use the CNN model. Convolutional Neural Networks (CNN) are a combination of artificial neural networks with deep learning methods. The CNN process will carry out a training and testing process for yoga movements so that an image classification can be determined from the type of yoga movement. The image of the yoga movement is divided into 80% for training and 20% for testing. The training process is carried out using two different scenarios by differentiating the input image size, batch size, and optimizer. The dataset uses 5 yoga movement labels namely goddess, plank, tree, warrior2, and downdog. The highest accuracy results are 94.10% using 170 x 170 image input, batch size 32, and RMSprop optimizer. The results of testing from the confusion matrix are 322 images from 5 labels that can be classified correctly as many as 303. The CNN model is implemented into the website using the streamlit framework.

Keywords*: *Yoga, Convolutional Neural Network, Streamlit, Image Classification, Deep Learning