

ABSTRACT

TESTING THE ACCURACY OF ARTIFICIAL NEURAL NETWORKS MODELS WITH ONE AND TWO HIDDEN LAYERS IN ALPHABET LETTER RECOGNITION

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Artificial Neural Networks (ANN) are the foundational modeling and problem-solving approach in deep learning, including computer vision. Research on ANN continues to advance to deepen researchers' understanding of the properties, characteristics, and accuracy of this model in problem-solving. This study focuses on the accuracy of Artificial Neural Networks models with one and two hidden layers in solving cases. The method used to test the accuracy of the models is comparative experimentation. In this method, the ANN model with one hidden layer and the ANN model with two hidden layers are applied to solve the same case to analyze their accuracy and computational duration. This research provides an overview of the accuracy of ANN models with one and two hidden layers in solving the aforementioned cases. In the case of alphabet letter recognition with hidden neuron counts of 100, 200, 300, and 400, the model with one hidden layer performs better than the model with two hidden layers. This is believed to be because during the training process with one hidden layer, stable weights can be obtained, and if this is followed by further weighting in the second layer, the previously stable weights are recalculated and at risk of becoming less stable.

Keywords: Artificial Neural Networks, deep learning, computer vision, model accuracy, hidden layers, comparative experiment, computing duration.

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