ABSTRACT

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IMPLEMENTASI ALGORITMA CNN (CONVOLUTIONAL NEURAL NETWORK) UNTUK KLASIFIKASI JENIS-JENIS KACANG KEDELAI
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Soybeans are a primary source of plant-based protein and vegetable oil worldwide. Soybeans are a type of plant that is relatively easy to cultivate as they are not dependent on specific climates. Taking into account external factors such as water, minerals, humidity, temperature, and light, soybeans can grow well. Additionally, soybeans offer promising business opportunities with good prospects for becoming a business venture. The CNN algorithm is capable of tasks like image classification. This research aims to implement the CNN algorithm to create a Machine Learning model for classifying different types of soybeans. The dataset used is obtained from the website https://kaggle.com. The dataset comprises 5513 images divided into 5 classes: Broken, Immature, Intact, Skin-damaged, and Spotted Soybean. The model was trained in 3 different dataset division scenarios. The best evaluation results were achieved in the first and third scenarios, where the model produced evaluation metrics with an Accuracy value of 83%, F1-Score value of 83%, Recall value of 83%, and Precision value of 84%. Based on these evaluation results, it is evident that the model possesses a sufficiently good ability to detect images of different types of soybeans, achieving a relatively high level of accuracy.

Daftar Pustaka (2018-2022)