

SISTEM REKOMENDASI PEMILIHAN BUAH ANGGUR BERBASIS ANDROID MENGUNAKAN CONVOLUTIONAL NEURAL NETWORK

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Abstract

Selection of quality grapes worthy of consumption is an important challenge in the agricultural and food processing industries. Manually determining the quality of grapes is often time-consuming, labor-intensive, and subjective. This research aims to develop an Android-based recommendation system that can support selection of quality grapes using Convolutional Neural Network (CNN) with a focus on comparing two CNN architectures, namely VGG16 and ResNet18. Pest attacks on grape plants are a serious problem that can hamper their growth and productivity. hinder its growth and productivity, so plant protection becomes crucial. becomes crucial. This system is expected to improve the efficiency of selecting quality grapes, which is important in the agricultural and food processing industries. industry. The methodology of this research utilizes an experimental approach with dataset consisting of 282 images of green grapes. Analysis results analysis results show that the VGG16 architecture provides an accuracy of 93%, higher than the 82% of the ResNet18 architecture. compared to the ResNet18 architecture which reached 82%, with the same parameters and dataset. parameters and the same dataset. The conclusion of this research shows that CNN VGG16 is a superior architecture in the classification of green grapes compared to ResNet18. compared to ResNet18. This recommendation system can contribute to operational efficiency in the grape selection process and support the concept of smart automation farming in the agricultural industry. support the concept of smart automation farming in the agricultural industry.

Keywords: Convolutional Neural Network, Deep Learning, grape, Android, VGG16, Resnet18