THE IMPLEMENTATION OF ELECTRONIC COMPONENT IMAGE CLASSIFICATION USING CNN ALGORITHM

MUHAMMAD ZYDANE ARROSYID
Informatics Study Program, Faculty of Science and Technology, University of Technology Yogyakarta
Jl. Ringroad Utara, Jombor, Sleman, Yogyakarta, E-mail: zydanesolo@gmail.com

ABSTRACT

Electronic devices consist of a series of electronic components mounted on circuit boards such as PCBs, CCBs, protoboards, or veroboards. Over time, these components may become damaged due to usage or external factors beyond their intended functions, requiring replacement. The vast variety of electronic components and potential damages makes it challenging to identify which components need to be replaced. Convolutional Neural Network (CNN) is a Deep Learning algorithm designed to build image-based classification models. This machine learning method aids in identifying various types of electronic components, thereby simplifying the process of recognizing required components and retrieving their specific details. The system is implemented through a user-friendly web-based interface. The trained CNN model achieved an accuracy of 92.27% with a loss of 0.2036 during training and a validation accuracy of 91.03% with a loss of 0.3383.

***Keywords**: Convolutional Neural Network, website, electronic components, electronics, classification, deep learning, accuracy*