ABSTRACT

The high amount of waste in recent years is a serious problem related to the increasing use of single-use items along with population growth. The accumulation of waste that is not managed properly results in environmental pollution and potential risk of disease. Recycling is considered a solution to reduce the impact of single-use waste, which is one of the main contributors to waste accumulation. In the context of inorganic waste management, determining an accurate classification that facilitates the management and reuse process is important. This research focuses on the application of the Support Vector Machine (SVM) algorithm to classify inorganic waste. Through collecting diverse inorganic waste datasets, the SVM model is trained to identify various types of inorganic waste. Optimization of the SVM model is carried out through a detailed data preprocessing process, utilizing convolutional features and fully connected layers. Experimental results show that the SVM model is able to classify inorganic waste with a high level of accuracy. These results indicate the great potential of SVM in waste management, making a significant contribution to more efficient solutions in dealing with environmental problems.

Keywords: Garbage Classification, Support Vector Machine (SVM), Dataset.