

ABSTRACT

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PROTOTYPE OF AUTOMATIC DRUG DETECTION APPLICATION IN PHARMACY USING CONVOLUTIONAL NEURAL NETWORK (CNN) ALGORITHM AND DEEP LEARNING USING TEACHABLE MACHINE

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(xiii + 86 + Appendices)

A pharmacy is an institution that provides medicines, pharmaceutical products and related health services. Pharmacies are not only places to get medicine, but they are also an important source of health information. This research aims to develop an automatic drug detection system in pharmacies using the Convolutional Neural Network (CNN) algorithm approach and Deep Learning on the Teachable Machine platform, with the integration of OpenCV, TensorFlow, and the Python library. This system aims to increase efficiency and accuracy in the drug identification process in pharmacies, by combining the advantages of machine learning and computer vision technology. This research methodology involves several stages, including collecting drug image data, model training using Teachable Machine, model integration with OpenCV and TensorFlow, as well as overall system performance testing and evaluation. Drug image data is obtained from various sources covering various types of drugs that are generally available in pharmacies. This research includes data collection, data preprocessing, data training, program creation, and results analysis. The research results show that the prototype of the automatic drug detection application developed is able to recognize various types of drugs with an overall accuracy rate of 97.82%. The use of the CNN algorithm in Teachable Machine allows the system to learn and differentiate various drug features, while integration with OpenCV and TensorFlow facilitates image processing and visual analysis. This research makes an important contribution to the development of automation systems in pharmacy environments, which can increase efficiency and accuracy in handling medicines.

Bibliography (2016 – 2024)