Universiti Teknologi MARA

MONKEYPOX DISEASE DETECTION USING CONVOLUTIONAL NEURAL NETWORK (CNN)

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ABSTRACT

Monkeypox is a rare disease caused by the monkeypox virus and is classified as a poxviridae and orthopoxviral virus. It is an important health issue because of the possibility that it will spread quickly and share similarities to other diseases like measles and chickenpox. Despite the name "monkeypox", the disease comes from mice and rats. Detecting monkeypox disease early is challenging due to symptoms like chickenpox and measles, limited skin lesion images, and lack of training examples, requiring CNN integration. Thus, this research project aims to develop a prototype for detecting Monkeypox Disease Detection using Convolutional Neural Network (CNN) and detect monkeypox disease, which can assist in reducing its spread and improve patient outcomes. The project is to study the CNN algorithm and develop a prototype to evaluate the accuracy of monkeypox disease detection using CNN. CNN's two-dimensional internal representation enhances determining shape and size in data structures, particularly with images. CNN performance depends on the quantity and quality of pre-processed datasets for standardized outcomes. The study achieved 93.33% accuracy in monkeypox detection using the CNN algorithm. However, there are some limitations which be limited due to a small dataset. Overfitting and class imbalance are possible problems that need a detailed examination of model complexity and training methods. In conclusion, the prototype's performance supports the project's potential for advances in disease detection technologies and improved patient outcomes, leading the path for more widespread healthcare diagnostics.

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