

## ABSTRACT

Melanoma is a serious form of skin cancer that can be fatal if not detected early. With the increasing availability of digital imaging technology, Machine learning and Deep learning algorithms have been developed to assist in the early detection of melanoma. Due to the costs for dermatologists to screen every patient, there is a need for an automated system to assess a patient's risk of melanoma using images of their skin lesions captured using a standard digital image. ML algorithms, such as feedforward backpropagation neural network(FFBNN), support vector machines (SVM), random forests, and k-nearest neighbors (KNN), have been used for melanoma detection with good results. DL algorithms, such as convolutional neural networks (CNN), U-Net, and Mask R-CNN, have shown even better performance, achieving state-of-the-art results in some cases. These algorithms have shown promise in improving the accuracy and speed of melanoma diagnosis, which can lead to earlier detection and better treatment outcomes.