

## Smart System for Human Nail Disease Diagnosis and Underlying Systemic Disease

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### Abstract

The aim of this research is to develop a smart system for human nail disease diagnosis and predicting underlying systemic disease. Nail disease is a common problem affecting millions of people worldwide, and some nail diseases can be a sign of internal systemic diseases. Diagnosis of nail diseases at an earlier stage could potentially result in improved chances of recovery and extended lifespan. The proposed smart system aims to detect nail disease by examining the colour and shape patterns of the nail, determining the severity of the disease based on the spread area, and analysing the symptoms patient may have by utilizing state-of-the-art technologies such as image recognition, object detection, machine learning, and deep learning. This system could also be integrated with electronic medical records to track patient history and facilitate communication between healthcare providers. According to the performance evaluations, the proposed method for identifying nail diseases, severity level, and internal systemic diseases has produced results with an accuracy ranging from 82% to 98%. Developing a smart system for human nail disease diagnosis and underlying systemic disease can revolutionize how healthcare providers diagnose and treat nail diseases, potentially improving patient outcomes and quality of life.

**Keywords:** *Nail diseases, YOLOV5, CNN, Mask R-CNN, Underlying systemic disease, Image processing*