

Skin Disease Detection using Image Analysis

Neha Bhalerao¹, Diksha Dhoke², Shaikh Mohammed Junaid³, Nayan Sonawane⁴, Prof. A. D. Tawlare⁵

Students, Department of Information Technology^{1,2,3,4}

Professor, Department of Information Technology⁵

Sinhgad College of Engineering, Pune, Maharashtra, India

Savitribai Phule Pune University, Pune, India

Abstract: In today's world, skin diseases are mainly found in humans, animals and plants. Skin disease is one of the most common health problems worldwide. Dermatitis is a specific type of disease caused by bacteria or infection. Diseases such as psoriasis, ringworm, thrush, brown spots, allergies, eczema, etc. have various dangerous effects on the skin and continue to spread over time. It becomes important to identify these diseases at an early stage to prevent their spread.

Keywords: Skin Diseases

I. INTRODUCTION

These diseases are detected using many advanced technologies such as image processing, data mining, Convolutional Neural Networks (CNNs), and more. Image processing has played an important role in this field of research and is widely used to detect skin diseases. Techniques such as filtering, segmentation, feature extraction, image preprocessing, and edge detection are part of image processing and are used to determine the affected area, the shape of the affected area, and the color of the affected area. This project provides an overview of various diagnostic systems for skin disorders using recent imaging techniques. This project conducts a comprehensive study of several systems for diagnosing skin diseases using different methodologies and their characteristics.

1.1 Computer Based Diagnosis of Skin Disease

Recently, with the development of medical technology, the concept of diagnosing skin diseases using a computer has emerged. Computer technology makes it easier to detect disease with just images of infected skin and can help analyze complex information. Artificial intelligence is playing a part in automation in all applications, even in healthcare.

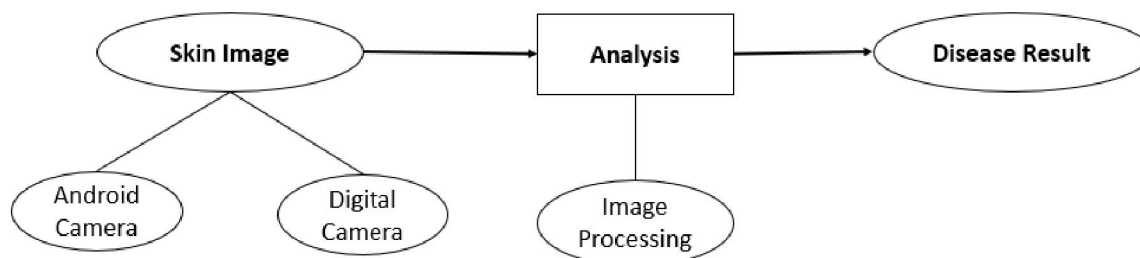
Computers can efficiently and easily interpret many images, but it is difficult for humans to interpret such a large amount of data and learn the details of an image. Thus, computer detection and computer diagnostics have become desirable and are being developed by many research groups. Computer diagnostics have proven to be very useful in diagnosing diseases.

The most common technique used for forecasting is artificial intelligence using machine learning. Artificial intelligence uses learning methods to learn about images to predict diseases based on common patterns. Machines interpret images and their fragments, process them and make predictions.

II. LITERATURE REVIEW

- First, skin diseases are so common and patients present in such large numbers in primary care settings that ignoring them is not a viable option. Children, in particular, tend to be affected, adding to the burden of disease among an already vulnerable group.
- Second, morbidity is significant through disfigurement, disability, or symptoms such as intractable itch, as is the reduction in quality of life. For instance, the morbidity from secondary cellulitis in lymphatic filariasis, which may lead to progressive limb enlargement, is severe, and subsequent immobility contributes to social isolation.
- Third, the relative economic cost to families of treating even trivial skin complaints limits the uptake of therapies. Generally, families must meet such costs from an overstretched household budget, and such expenses in turn reduce the capacity to purchase such items as essential foods.

- Fourth, screening the skin for signs of disease is an important strategy for a wide range of illnesses, such as leprosy, yet a basic knowledge of the simple features of disease whose presenting signs occur in the skin is often lacking at the primary care level.
- A shortage of elementary skills in the management of skin diseases is a further confounding problem. A number of studies assessing success in the management of skin diseases.



III. CONCLUSION

Convolutional Neural Networks (CNNs) have made remarkable progress in various fields, including medical research, and interest in radiology is also growing. Deep learning has become the dominant technique for a variety of complex tasks such as image classification and object detection, but it is not a panacea. A knowledge of the key concepts and benefits of CNNs and the limitations of deep learning is essential for using CNNs in radiology research to improve radiologists' work and ultimately patient care.

In this study, a model for detecting skin diseases is created using image analysis and convolutional neural networks. With the help of convolutional neural networks, we can achieve a higher level of accuracy and predict more diseases than any other model created before. Like previous models created by this application, it can report up to 6 skin conditions with up to 75% accuracy. By implementing a deep learning algorithm, it can predict up to 20 diseases with a high accuracy of 88%. This proves that deep learning algorithms have great potential for diagnosing skin diseases in the real world. Using a much more advanced system with high-performance hardware and software with very large data sets can significantly improve accuracy and the model can be used in clinical trials as it allows for invasive measurements.

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