EARLY DISEASE DETECTION USING NAIL IMAGE PROCESSING

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INTRODUCTION

- Nails indicate health and diagnose various diseases.
- Nail colour and shape reveal overall well-being and identify disorders, including anaemia, liver dysfunction, fungal infections, and oxygen deficiency.
- Developing a model for diagnosing and treating nail disorders at early stages

OBJECTIVES

- Non-invasive, low-cost, and accessible method for early disease detection
- Improved accuracy of disease detection
- Provide a low-cost alternative

SAMPLE DATASET

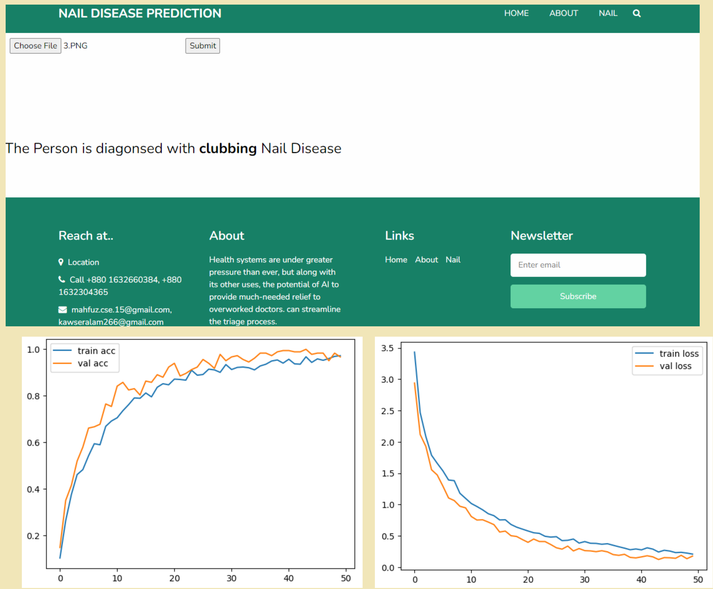
ALGORITHM

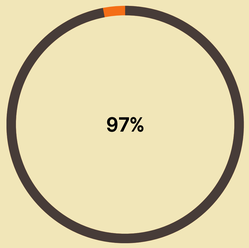
- CNN-BASED VGG-16 MODEL IS USED
- INPUT SIZE IS 224 BY 224 PIXELS

LITERATURE REVIEW AND CONTRIBUTION

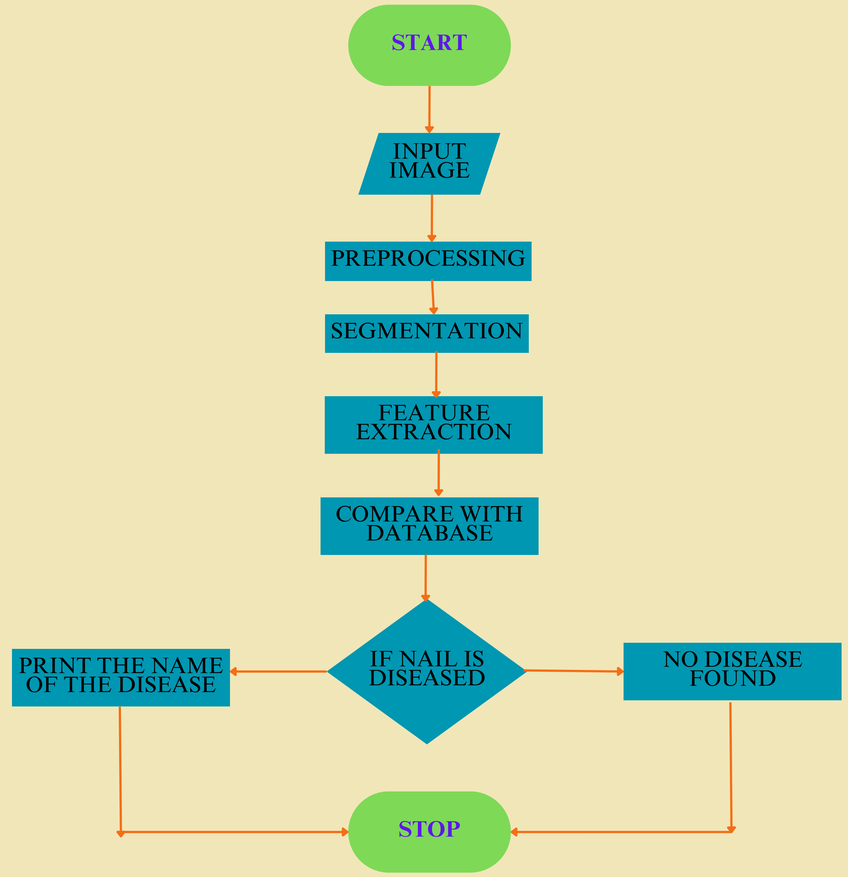
- A proposed system using nail colour changes for disease diagnosis achieved 65% accuracy on seven types of nails [1].
- Segment the nail image using Watershed, Thresholding, and K-means segmentation techniques in [2].
- The system analyzes image features and predicts diseases using medical palmistry, but analyzing nails will take more time due to time-consuming image enhancement methods[3].
- Our system uses nail color and shape changes to diagnose nail conditions with 97% accuracy, making it easy to extract nail features.

RESULTS





PROPOSED METHOD



CONCLUSION

The study uses a CNN-based Vgg16 model for early-stage illness detection in humans, achieving high accuracy in predicting various disorders based on nail color changes. The model outperforms the human visual system due to low resolution power and subjective evaluation. The findings may have clinical applications, and deep neural networks may be used in the future to identify more health problems in people.

REFERENCES:

[1] Indi, T. S., & Gunge, Y. A. (2016). Early stage disease diagnosis system using human nail image processing. *IJ Information Technology and Computer Science*, *7*, 30-35.
[2] Saranya, V., & Ranichitra, A. (2017). Image segmentation techniques to detect nail abnormalities. Scholar, 2(1).
[3] Hardik Pandit, & D M Shah (2011). Application of Digital Image Processing and Analysis in Healthcare Based on Medical Palmistry. IJCA Special Issue on Intelligent Systems and Data Processing (ICISD), 56-59.