

# Skin Sight Pro: Multi-Species Dermatology Assistant

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**Abstract-** *The number of skin ailments faced by humans and animals is rising rapidly, indicating that there is an urgent need for intelligent, accessible diagnostic systems. Expert consultation is required to perform dermatological diagnoses through traditional means; however, they are often not available in many regions, causing delays to begin treatment. As a solution, Skin Sight Pro will serve as a multi-species dermatology assistant for real-time skin disease diagnosis using imaging techniques and deep learning thus allowing for diagnosis from images. Processing of input images will occur using computer vision and convolutional neural networks to derive accurate classifications of skin disease type and location. The system allows skin analysis for both humans and animals and has the capability to support both automatic subject identification (for example) through use of a dual-mode detection system that allows the user to choose between two different methods for identification (e.g., manual selection or automatic subject identification). The application of image processing techniques (e.g., resizing, normalizing and enhancing) will enhance the accuracy of classification results. Once the system has diagnosed an organism based on skin type, it will generate a complete prescription that includes both the medications prescribed, the amount to use per dose and any precautions that may be necessary, as well as follow-up recommendations. In addition to prescriptions, user authentication and history tracking are built-in features of the platform, which will assist with maintaining patient records more efficiently. As such, the implementation of this proposed solution will provide benefits including greater reduction in the amount of time between the onset of skin disease diagnosis and treatment, improved access to dermatological care, as well as an intelligent support system for both medical and veterinary uses.*

**Index Terms-** *Multi-Species Dermatology, Image Processing, Computer Vision, Skin Disease Detection, Deep Learning, CNN, Prescription Generation, Healthcare AI, Veterinary AI, Web-Based Application*

## I. INTRODUCTION

Skin diseases are becoming increasingly common in humans and animals, and identifying these diseases early and accurately is a significant healthcare problem. Expert examination has traditionally been

the method of diagnosing dermatological disorders, but it is time-consuming and subjective. In addition, expert examination may not be available in all locations, particularly remote areas, which leads to delayed treatment and increased cost of care. Existing diagnostic systems require specialized equipment and trained personnel and are therefore impractical for widespread use. The issue of skin disease diagnosis in veterinary dermatology is compounded by differences in the way skin diseases are expressed among species, indicating there is a need for a comprehensive, intelligent, and easily accessible diagnostic system. Skin Sight Pro is a web-based, multi-species dermatologic assistant for identifying skin diseases through the use of image processing and deep learning (CNN) image processing techniques. This system provides two modes of detection: human skin disease and animal skin disease. Skin Sight Pro utilizes preprocessing methods to increase the accuracy of the detections. The Skin Sight Pro system generates medication prescriptions and patient/animal specific precautions, allows for user authentication and provides an ongoing history of the patient/animal through the system. Skin Sight Pro makes healthcare delivery more efficient by utilizing common equipment (smartphone) to create a cost-effective, scalable solution for both human and veterinary applications for the early and accurate identification and treatment of skin diseases across multiple species.

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Heading Level	Heading Example	Font Size and Style
Title	Skin Sight Pro: Multi-Species Dermatology Assistant	14 pt, Bold
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2nd-level heading	2.1 Proposed System	10 pt, Bold
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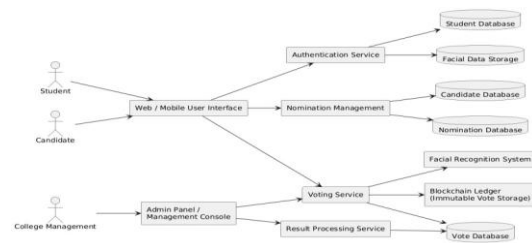


Fig. 1. System Architecture of the Real-Time Emergency Detection System

### Using Image Processing

The diagram depicts the overall system architecture of the proposed Skin Sight Pro solution, including how the user provides input to the system; central processing modules that receive the skin images for processing; and the interface through which results are provided to the user. The skin images will be processed using preprocessing methods before being analyzed by deep learning models to identify any skin diseases within the images. Once an output has been generated, the user will receive the prescription, while data will be securely held for future use and analysis.

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#### APPENDIX

The appendix, if included, is located just before the References section. The numbering of figures, tables, and equations will be continuous from the main body of the text to the appendix. Additional implementation details, dataset descriptions, and model configurations associated with the Skin Sight Pro system can be found in this section for future reference.

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