

ADVANCED SKIN DISEASES DIAGNOSIS LEVERAGING IMAGE PROCESSING

**SRI CHARAN
VIVEK UPADHYAY
SAHIL GANESHWANI
DEVI VAISHNAVI**



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ABSTRACT

- Skin diseases are increasing due to pollution.
- The project uses image processing for diagnosis.
- Pre-processing includes noise removal and grayscale conversion.
- Image segmentation isolates affected areas for analysis.
- Feature extraction reduces complexity for classification.
- SVM accurately identifies diseases with 89% accuracy.
- System improves efficiency, reduces errors, and costs.

INTRODUCTION

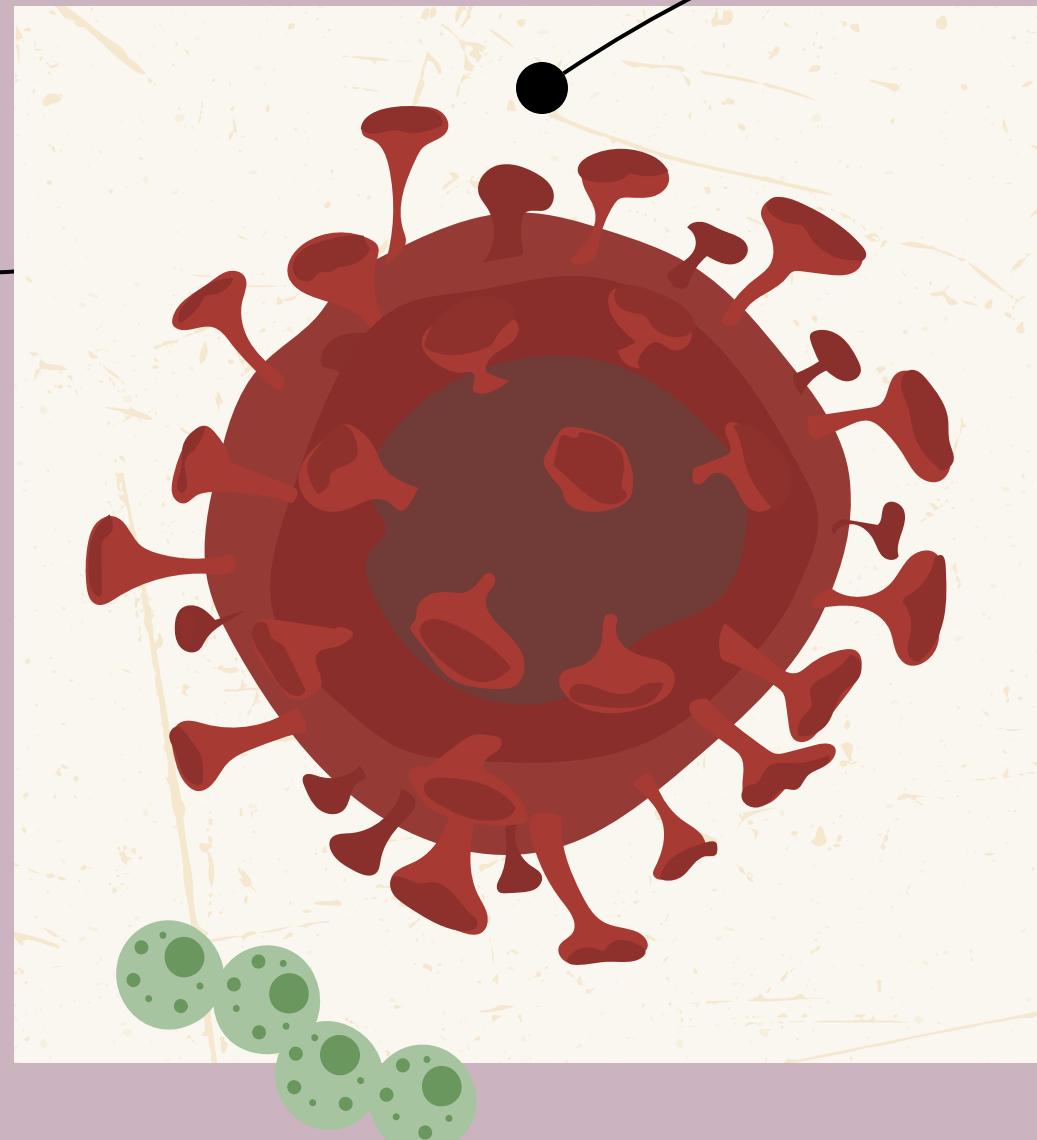
- Skin diseases require accurate, timely diagnosis.
- Manual methods are time-consuming and error-prone.
- This project uses image processing and SVM for automated detection.
- It improves accuracy and accessibility in dermatology.



SCOPE AND MOTIVATION

SCOPE

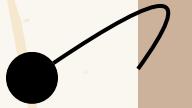
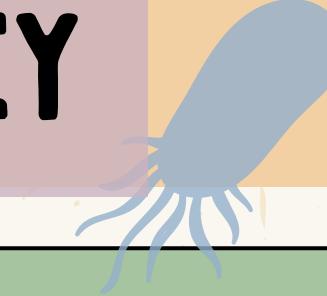
Build an automated system to diagnose skin diseases using image processing and machine learning.



MOTIVATION

Address rising skin disease cases with efficient, accessible, and accurate diagnostic solutions.

LITERATURE SURVEY



Title of the paper	Journal Conferences	Inferences
Skin Disease Detection Using Image Processing and SVM	International Journal of Computer Science	SVM-based classification achieved high accuracy for skin disease diagnosis using feature extraction.
Machine Learning in Dermatological Disease Classification	IEEE Conference on Healthcare AI	ML models improve diagnostic precision, especially for conditions like melanoma and psoriasis.
Image Pre-Processing for Enhanced Diagnosis of Skin Diseases	Journal of Image Processing and AI	Noise removal and segmentation techniques significantly enhance image quality for accurate analysis.
Impact of Air Pollution on Skin Disorders	Environmental Health Perspectives	Air pollution exacerbates skin diseases, emphasizing the need for early detection systems.

OBJECTIVE

- Facilitate Early Diagnosis
- Enhance Diagnostic Efficiency
- Promote Accessibility
- Leverage AI/ML



EXISTING SYSTEM

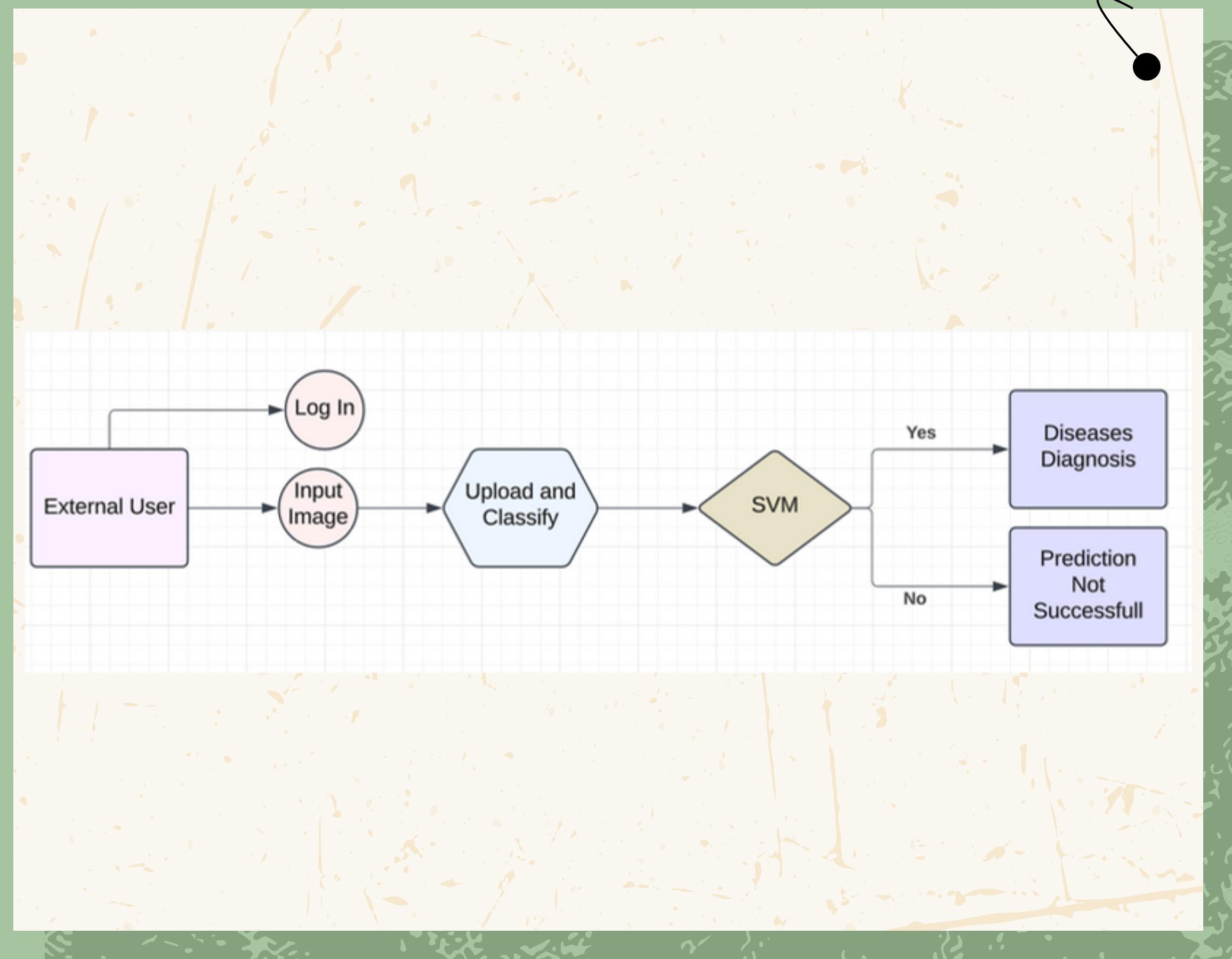
- Dermatologists rely on subjective, time-consuming visual exams.
- Traditional image processing methods focus on basic segmentation but lack classification accuracy.
- Older models like k-NN and basic CNNs have limited accuracy and scalability.
- These systems face challenges with small datasets, inconsistent preprocessing, and lack real-time capabilities.

PROPOSED WORK

- Collect and preprocess a diverse dataset with noise removal, grayscale conversion, and augmentation.
- Train an optimized SVM classifier for precise disease classification.
- Integrate the model into a real-time pipeline and compare its performance with other classifiers for improved accuracy.

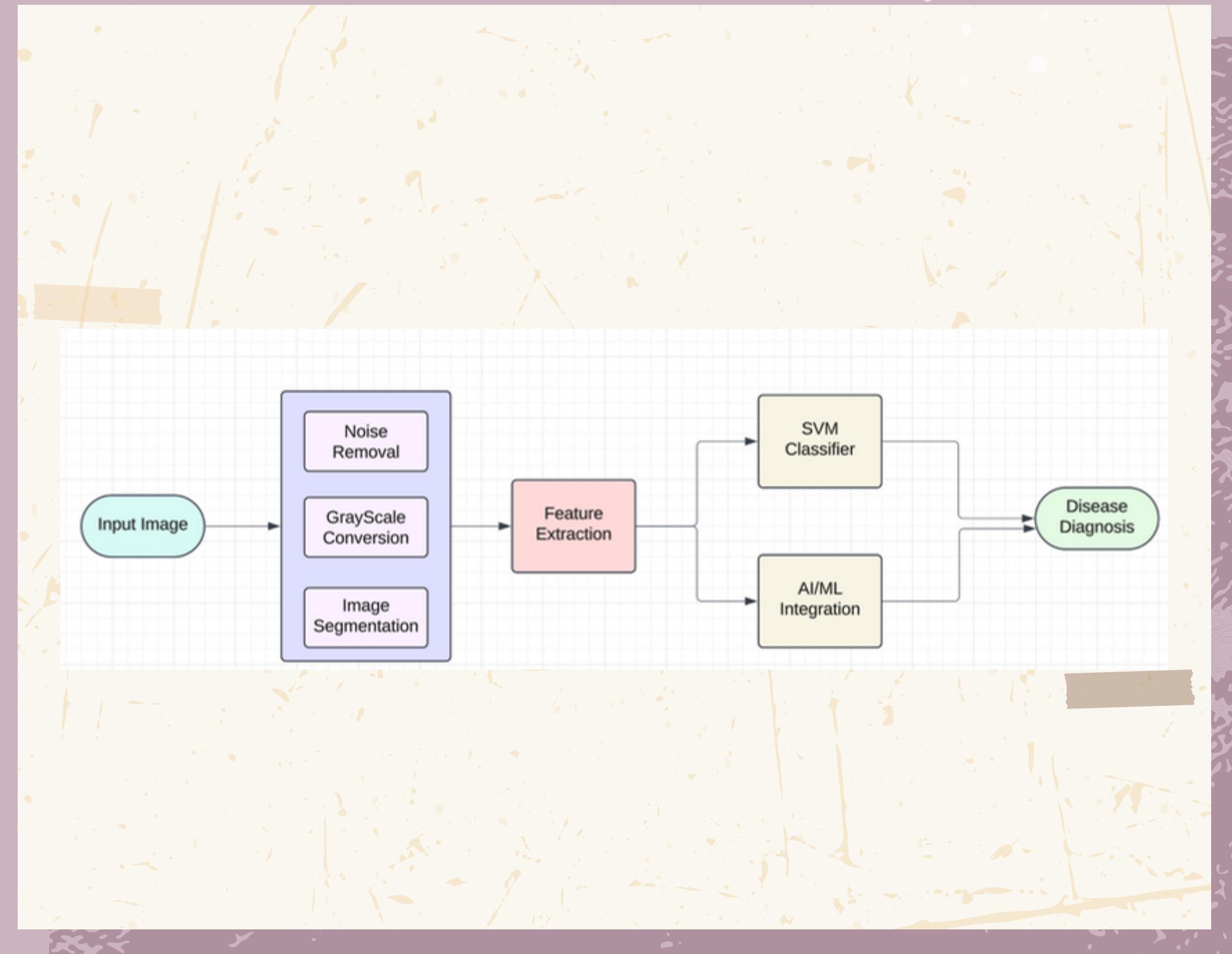
DATA FLOW DIAGRAM

The data flow starts with a user logging in and uploading an image. The system processes the image, classifies it using an SVM model, and displays the result in the Disease Diagnosis block. If classification fails, it moves to the Prediction Not Successful block.

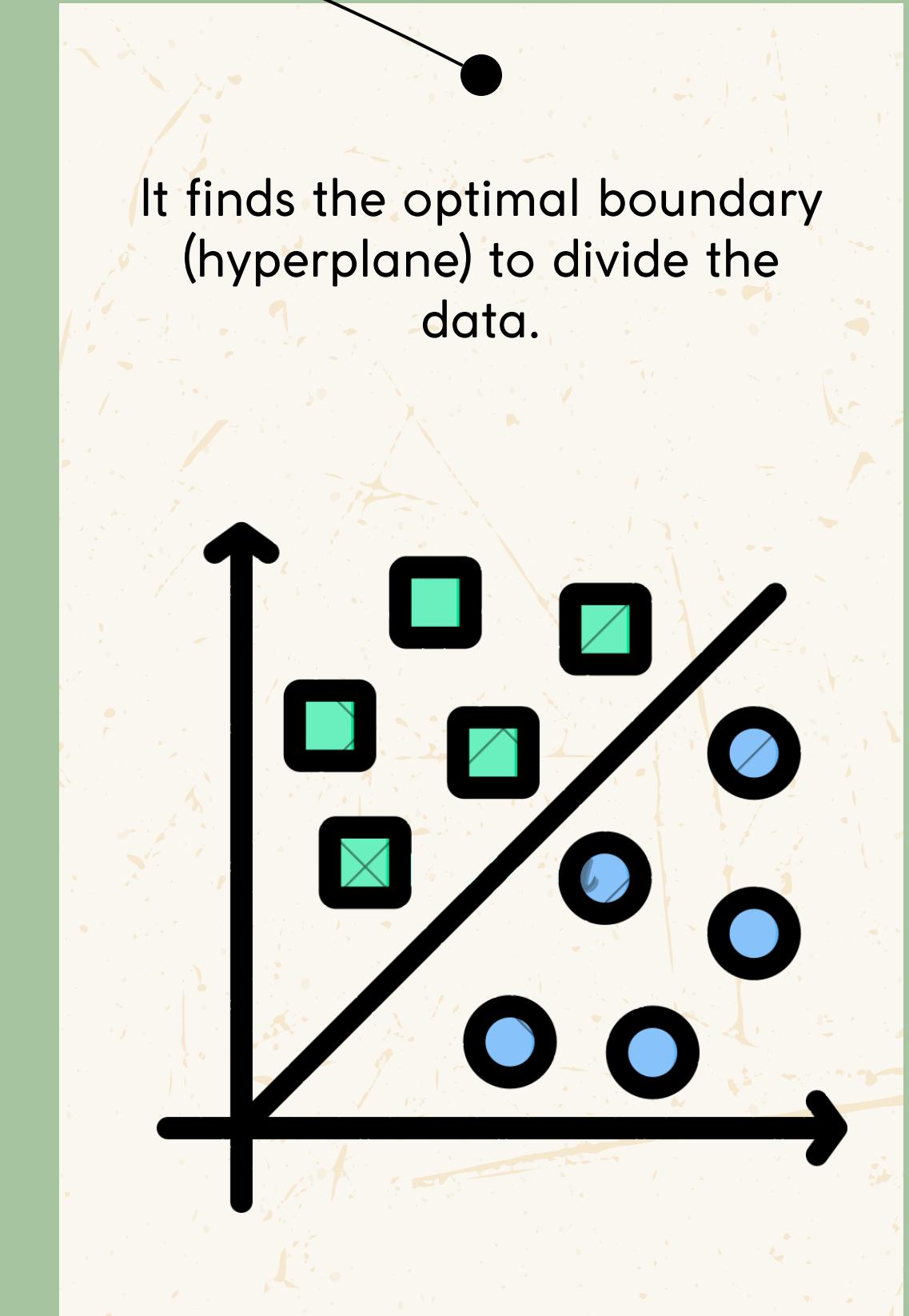
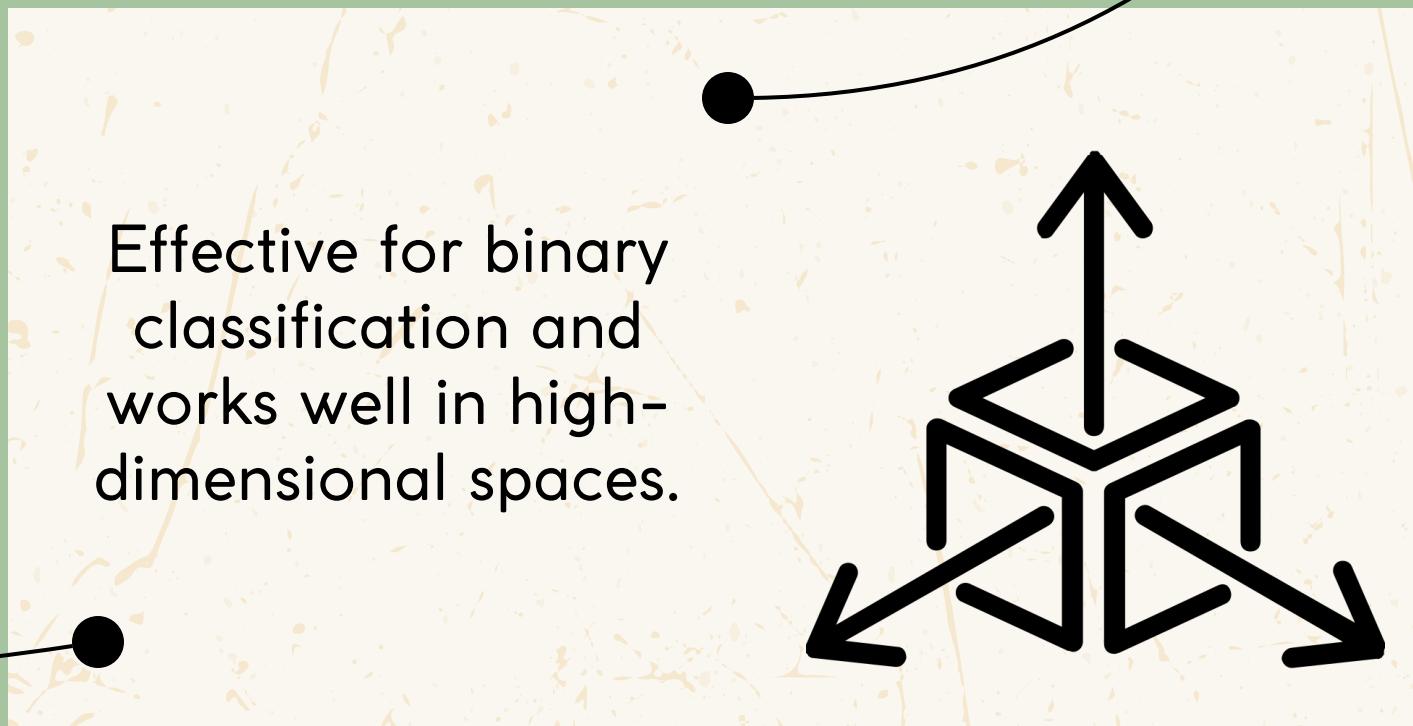
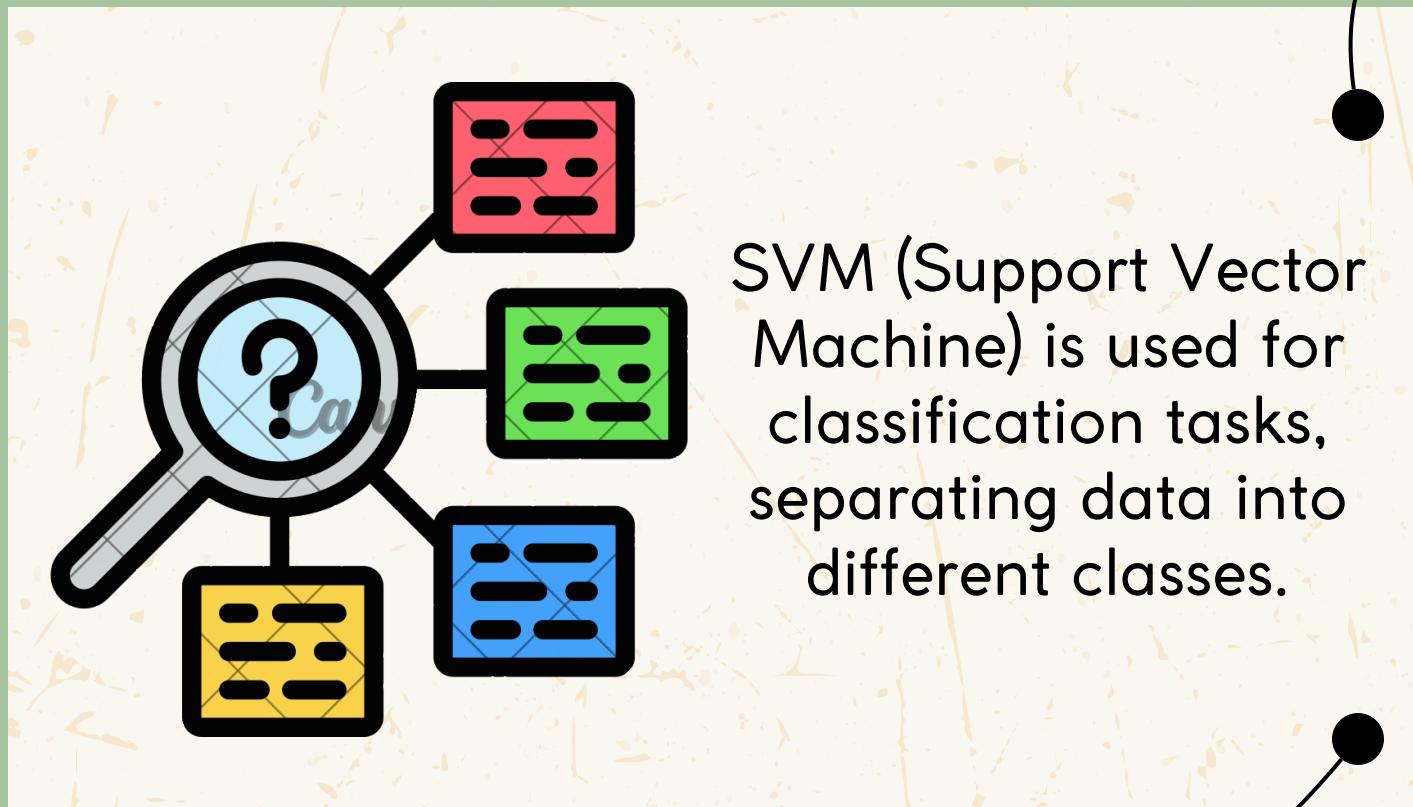
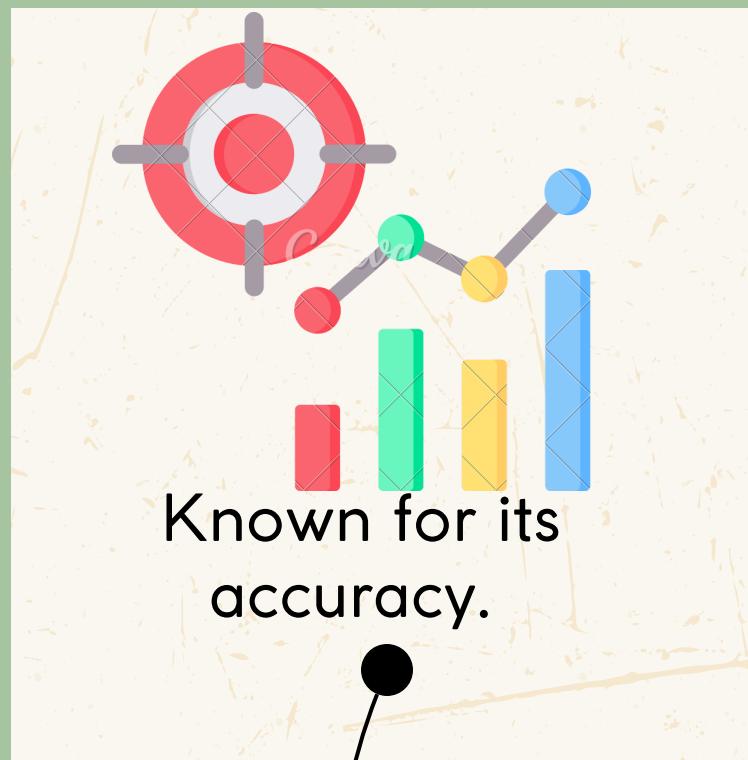


ARCHITECTURE DIAGRAM

The "Advanced Skin Diseases Diagnosis" project processes skin images through stages: uploading, pre-processing, feature extraction, and analysis with an SVM Classifier. It diagnoses conditions like melanoma and acne with 89% accuracy.



ALGORITHM



PROS AND CONS

PROS	CONS
<ul style="list-style-type: none">• Improved accuracy• Automates diagnostics• Scalable• Cost-effective	<ul style="list-style-type: none">• Large dataset• High development costs• SVM limitations• Ethical concerns

RESULT



CONCLUSION

- SVM is used for accurate skin disease classification based on extracted features.
- It efficiently separates skin conditions, ensuring high accuracy.
- Provides reliable diagnoses for automated dermatological analysis.
- Future enhancements: expand dataset, fine-tune SVM, improve scalability.

REFERENCES

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A collage of various microorganisms and a person with a mask.

THANK YOU