

Development of an AI Based Mobile and Web Application for Psoriasis Detection and Classification

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Background

1. Introduction

Psoriasis: a chronic autoimmune skin condition causing rapid skin cell growth and thick, scaly patches.

Symptoms: includes dry, itchy skin, soreness, and bleeding cracks.

Types: common forms are plaque, guttate, inverse, and pustular psoriasis.

Triggers: stress, infections, and certain medications can worsen symptoms

2. Problem statement

Current diagnostic methods limitations include: Inaccurate result, delayed diagnoses, poor personalized treatment and inefficient disease monitoring

Key Causes:

- Symptom variability
- Limited dermatologist access
- Similarity to other skin conditions
- subjective assessments



Fig. 1 Psoriasis skin image

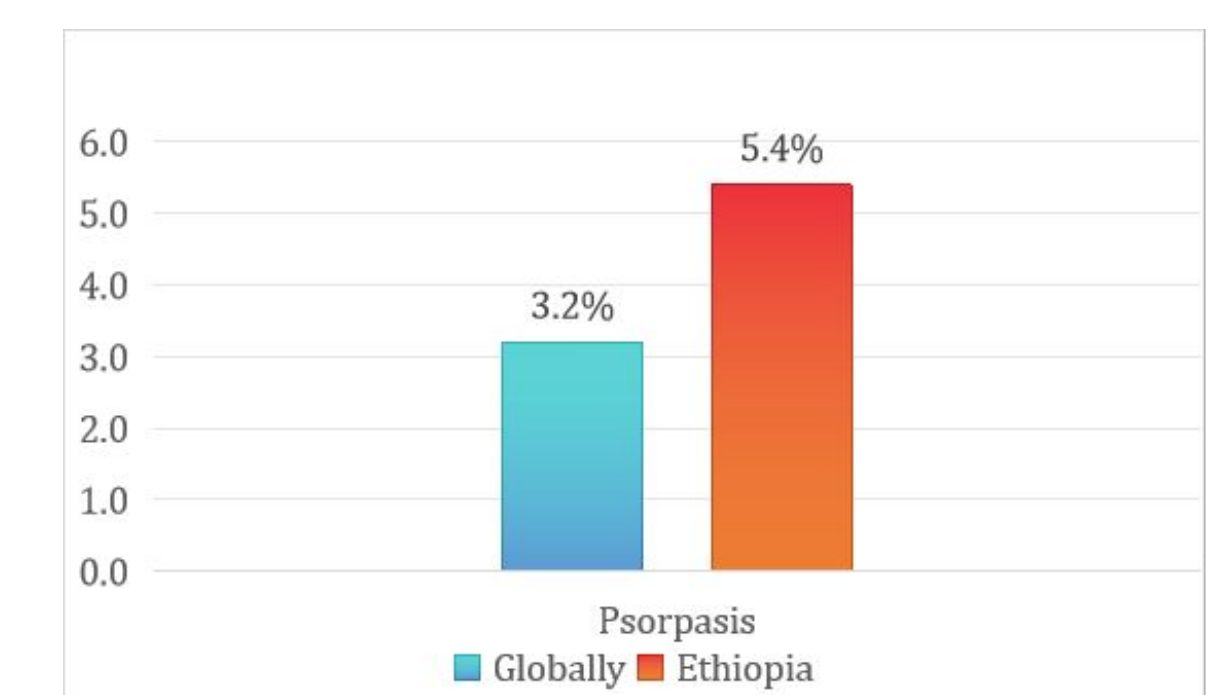


Fig. 2 Psoriasis prevalence

Current Work

1. Objectives

- To gather local and online datasets of psoriatic clinical images.
- To design and implement advanced machine learning algorithms.
- To evaluate the performance of the system.
- To develop user-friendly mobile and web application interface.

2. Methodology

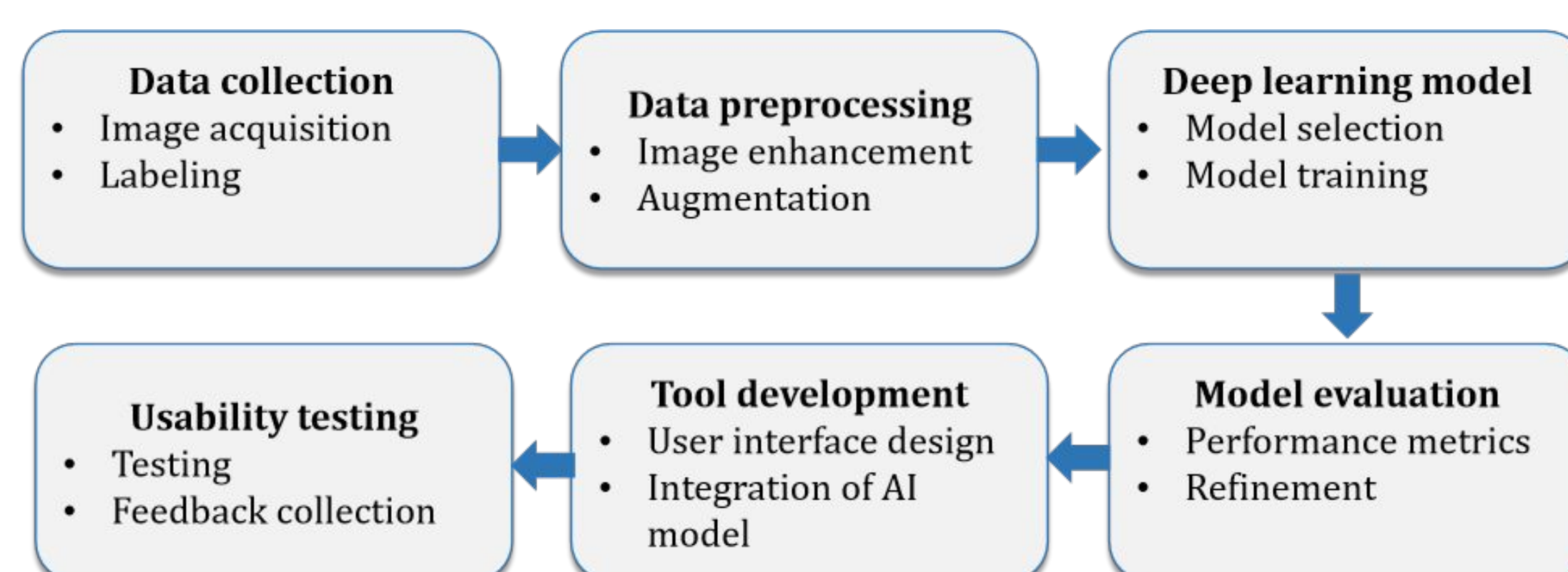


Fig. 3: Methodology block diagram

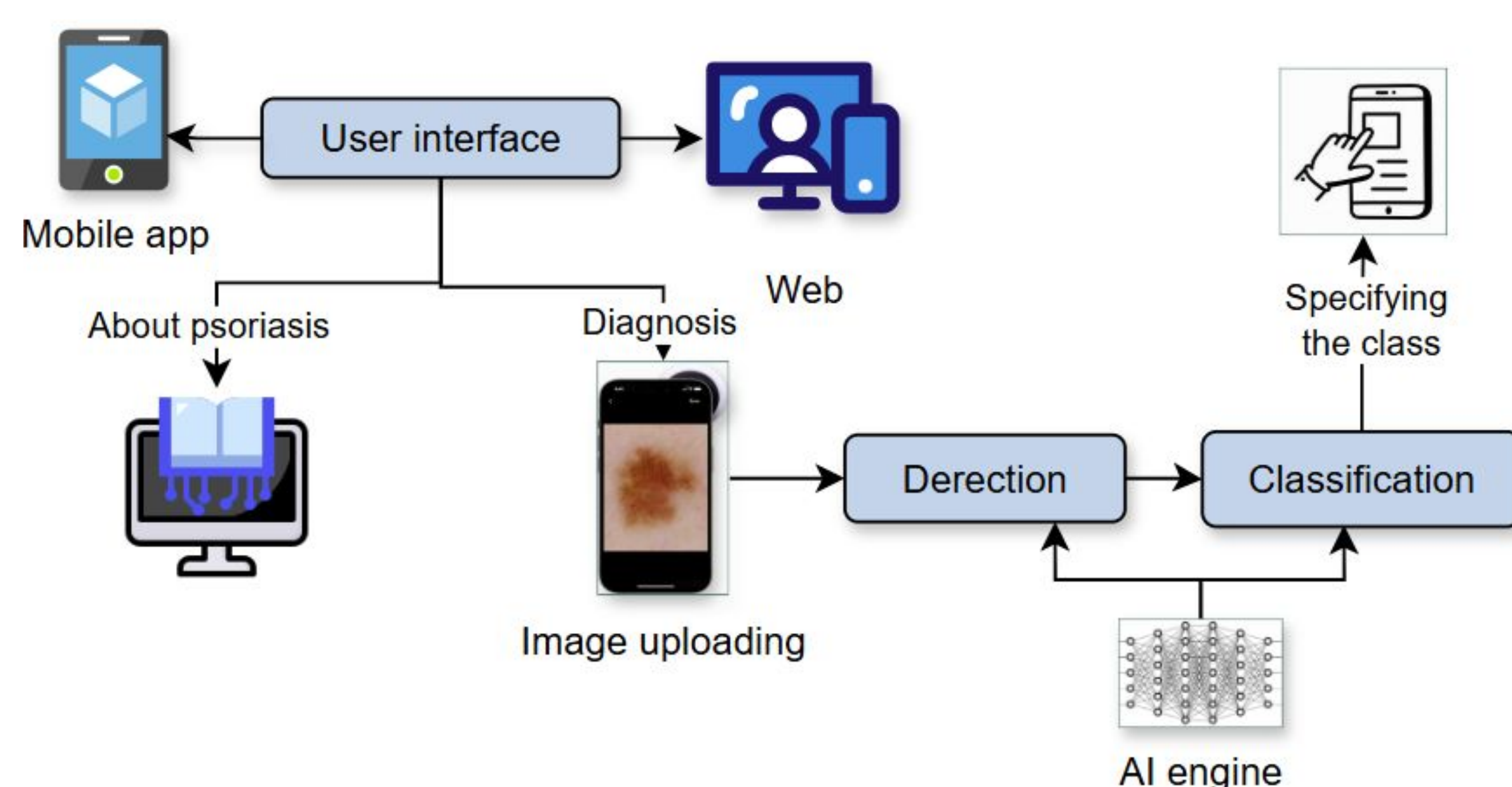


Fig. 4: General framework of proposed solution

3. Preliminary Results

- Review paper publication
- Ongoing local and online data collection.
- Successfully developed a model using online data.

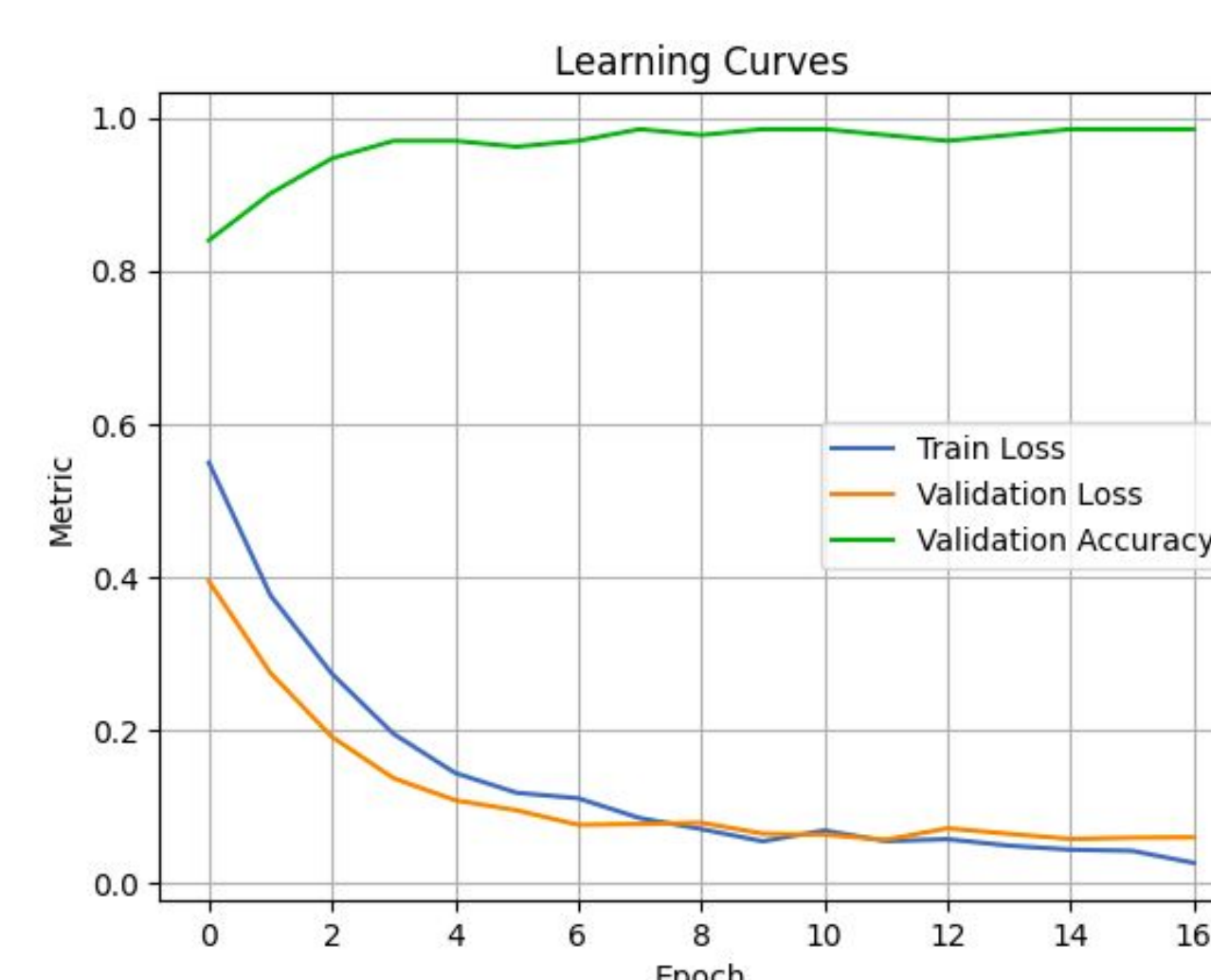


Fig. 5: Learning curve

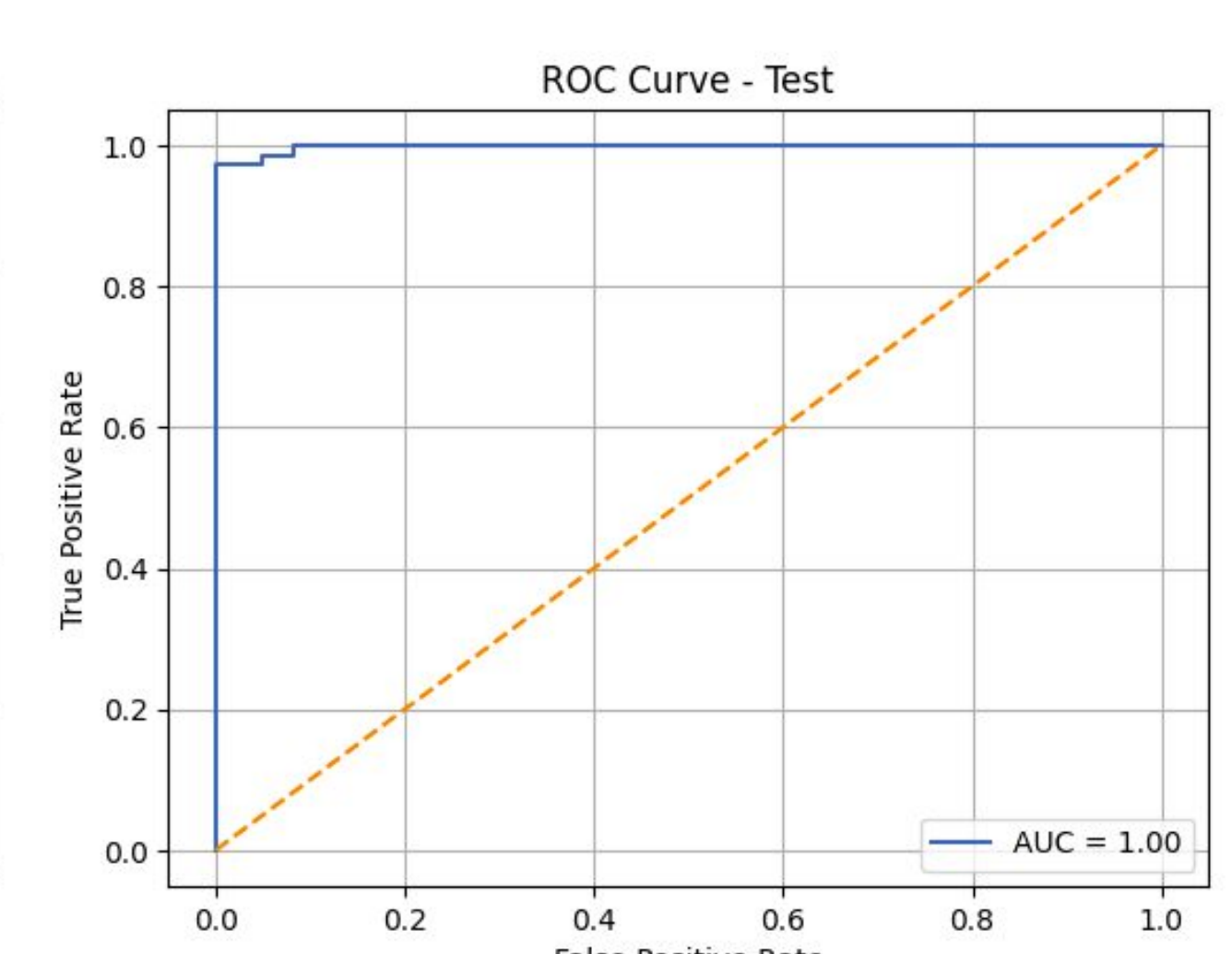


Fig. 6: Area under curve

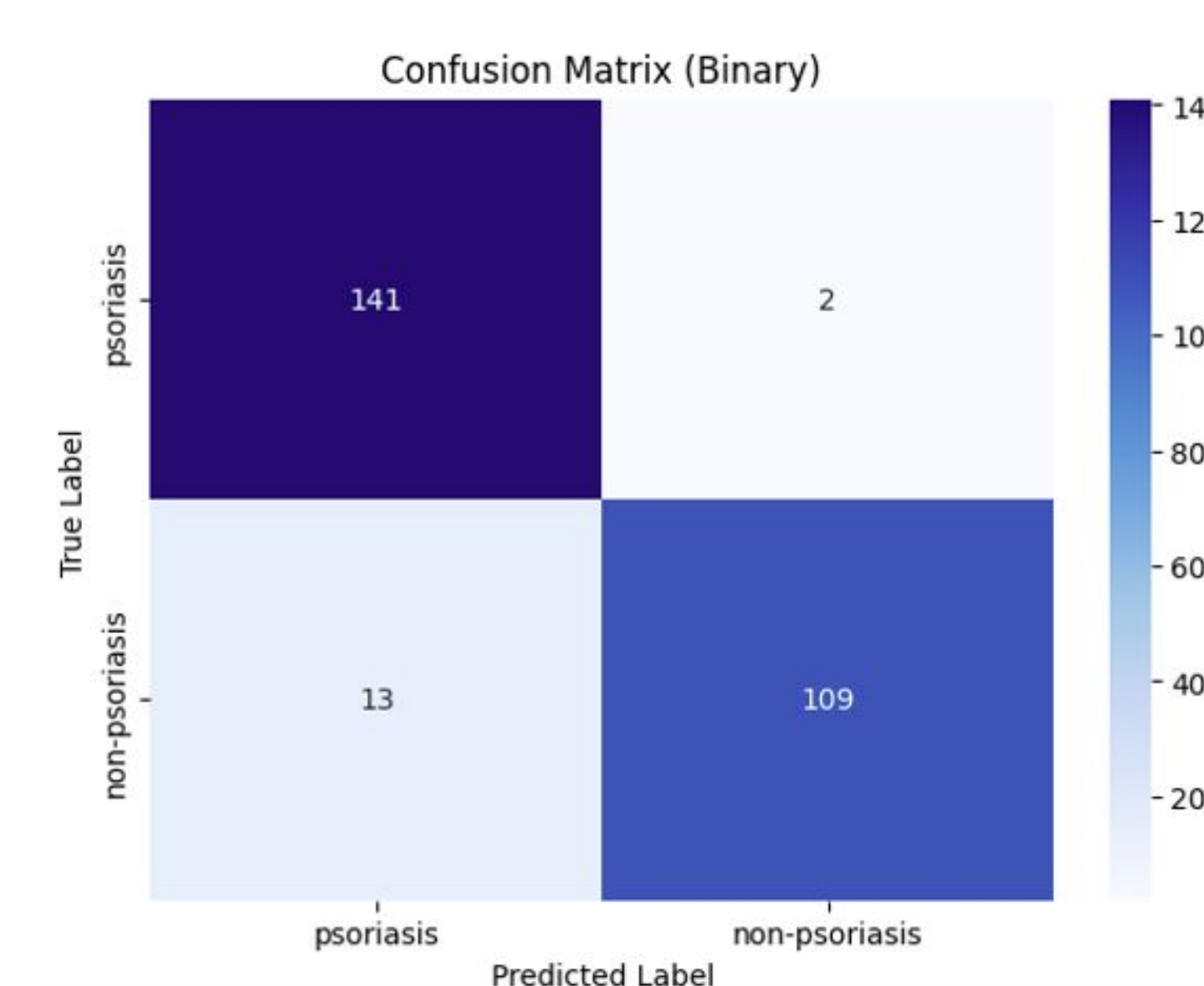


Fig. 7: Confusion matrix for psoriasis detection model

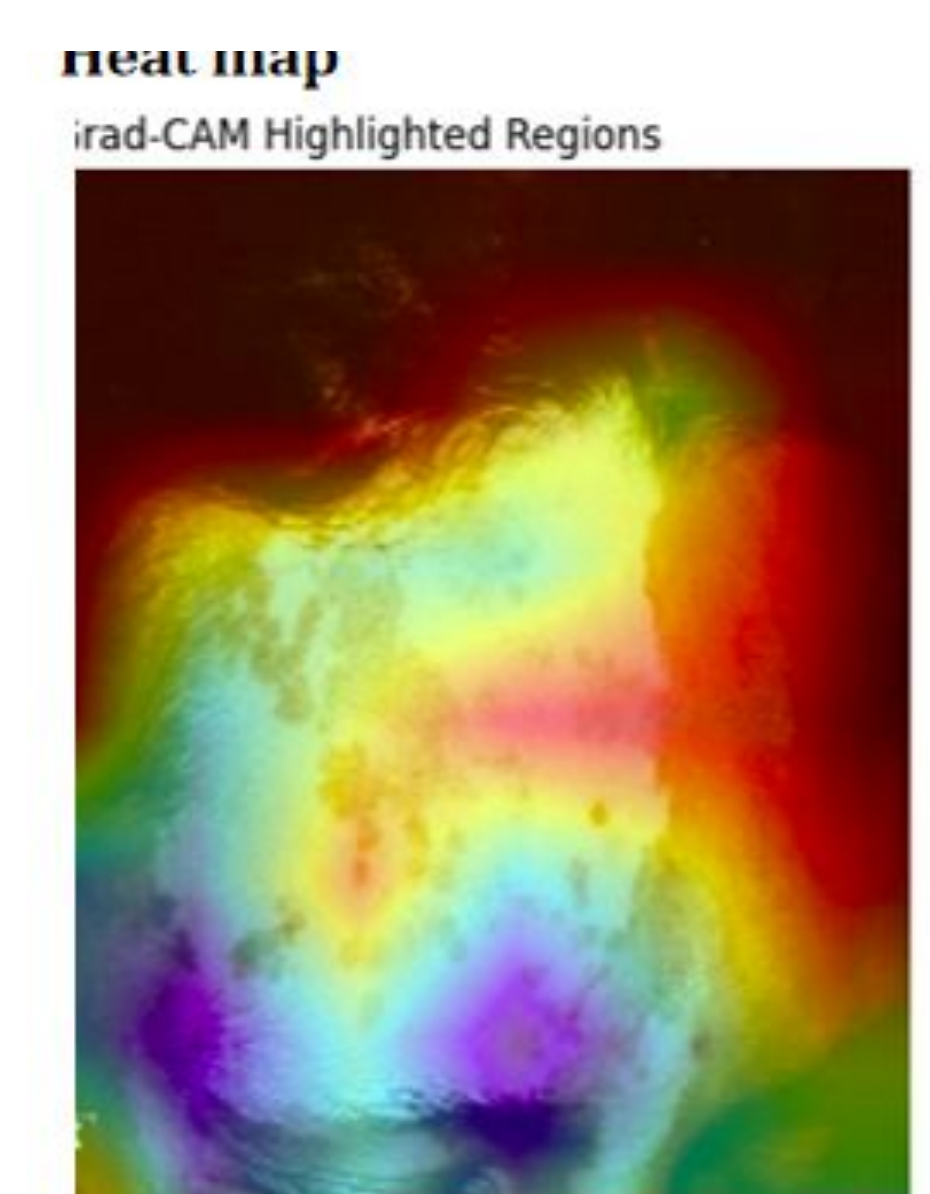


Fig. 8: Grad-CAM

Conclusion & Expectations

- **Findings:** AI tools show promise in improving psoriasis diagnosis.
- **Impact:** greater accuracy(0.96%) leads to better patient outcomes.
- **Future work:** Ongoing data collection and model refinement needed.
- **Goals:** Aim for clinical implementation to enhance patient care.
- **Action:** Collaborate with healthcare professionals for practical application.



Fig. 9: Model testing result

References & Acknowledgment (if needed)



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