SSE: Group #4
SPOT

Eric Chartier
Yuting Li
Chirayu Patel
Kyle Labatete

Eric Chartier

- Frontend Developer
- Backend Developer
- Frontend-Backend integration
- Database Creation
- User Testing
- Project Documentation
- Usability Testing
- Software Research/ Curation
- Co-Project manager with Yuting Li

Yuting Li

- AI & Medical-Tech Researcher
- AI Developer
- AI Model Tester
- Legal Issues
- Visual Designer
- Software Research/Curation
- Co-project manager with Eric Chartier

Chirayu Patel

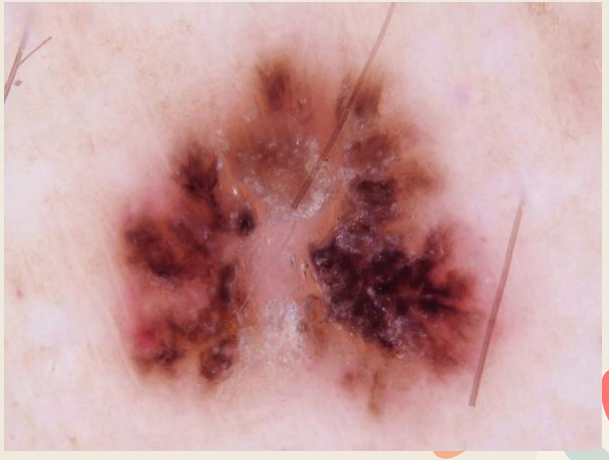
- FrontEnd Developer
- FrontEnd Designer
- Database
- Project Documentation
- Project Timeline Organization with team

Kyle Labatete

- Front end Design
- Project Documentations
- Visual Designer
- Design Testing
- Research

INTRODUCTION

Do you recognize any of these photos?

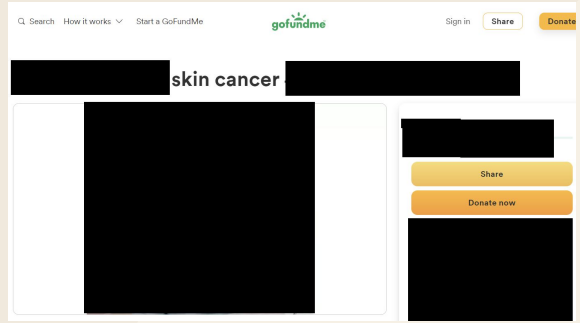


WHY

- Skin diseases affect approximately one in three people globally (World Health Organization, 2021).
- Skin conditions account for 1.79% of all disability-adjusted life years (DALYs) globally (Karimkhani et al., 2017).
- Approximately 15% of dermatology patients are misdiagnosed (Javed et al., 2021).
- In a survey of patients with skin diseases, 92% reported experiencing negative impacts on their quality of life, including emotional distress, social isolation, and reduced productivity (Chren et al., 2001).
- Malignant melanoma accounts for the majority of skin cancer deaths, with an estimated 7,180 deaths in the United States in 2021 (American Cancer Society, 2021).

WHY

- Good Health and Well-Being
- Early Detection and Prevention
- Avoiding Financial Struggles
- Empowering People



This GofundMe campaign was created March 20!

HOW

- Web application
- Artificial Intelligence (AI)
- Acts as a medical diary
- Provide some medical insight/ knowledge to users

DISCLAIMER: This web app is not a replacement for a professional medical advice.

SPOT

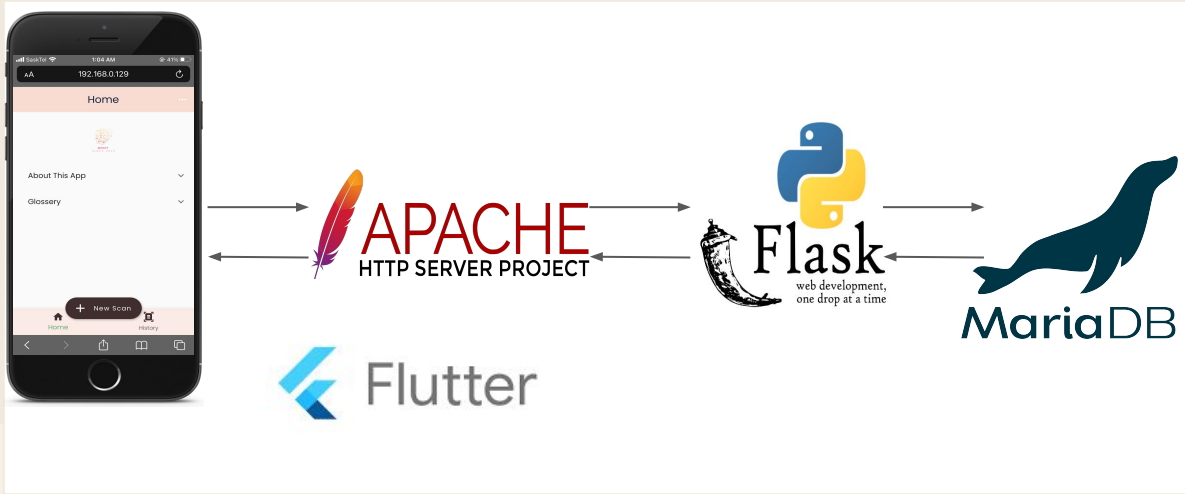
SINCE 2023

App Development

- major focus on user Privacy and Safety of their information

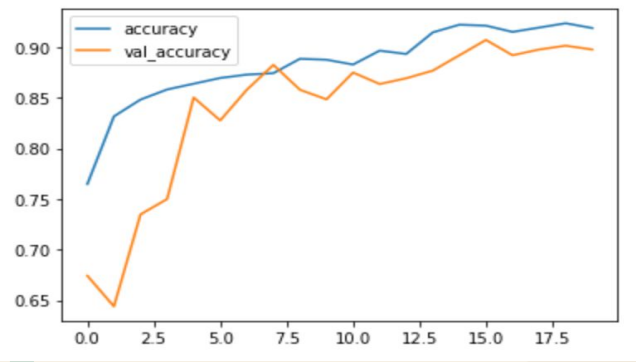
  especially when pictures of users are concerned

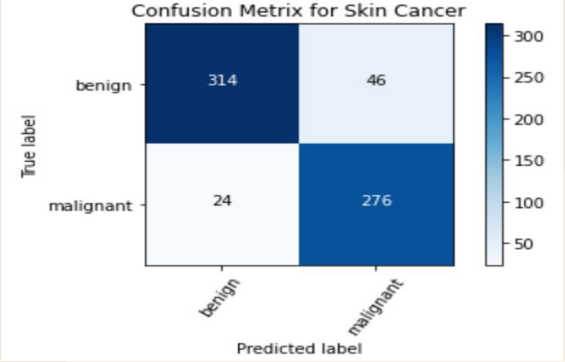
- We also have extensibility into existing server ecosystems



Melanoma Model

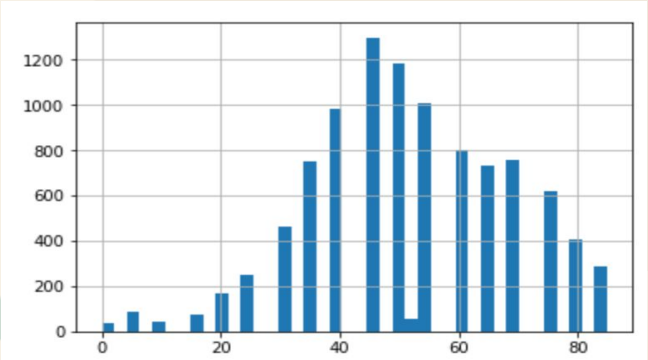
- Specialized in Benign/Malignant melanoma classification
- Trained with ResNet 50
- High Accuracy Rate of 92%

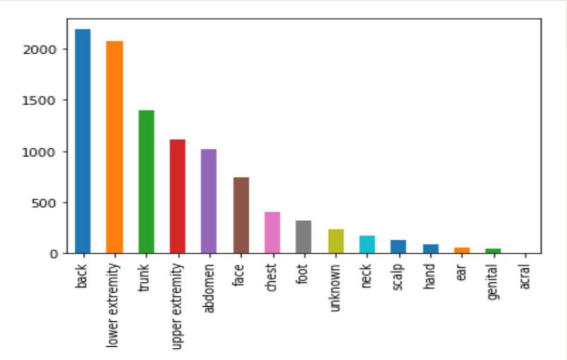




Generalized Model

- For general detection purpose
- Trained using diversified datasets
  - Skin tones, parts of the body, gender, age group and etc.
- Lower accuracy rate around 85%

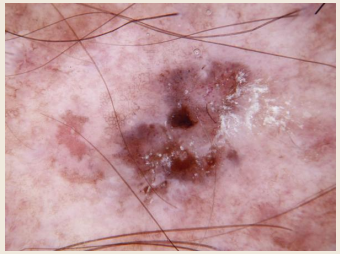




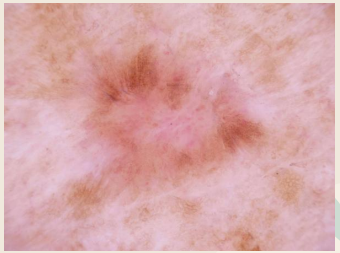
Prelabeled Images

Melanoma - Malignant

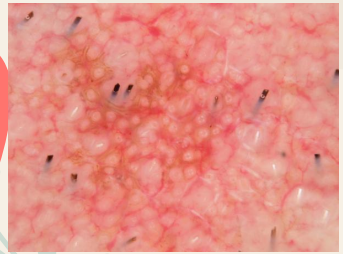
Vascular Lesion



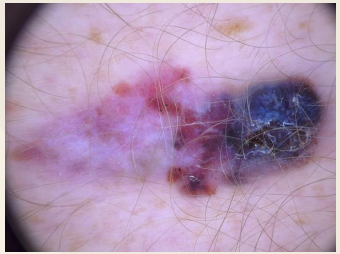
Vascular Lesion



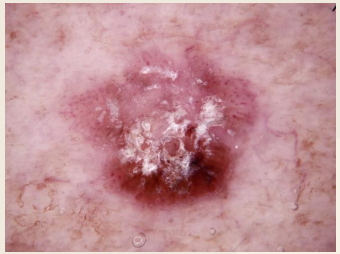
Melanocytic nevi



Vascular Lesion



Basal cell carcinoma



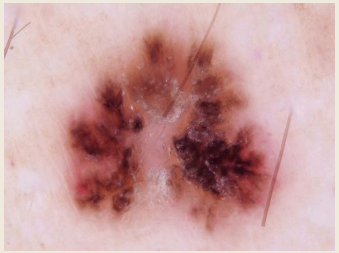
Basal cell carcinoma

Dermatofibroma

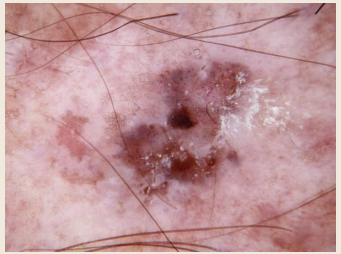
DEMO

What our models say

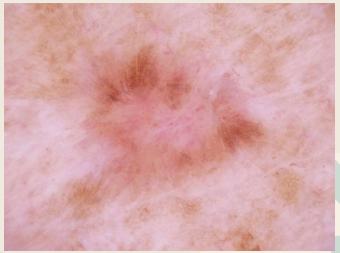
Melanoma - Malignant



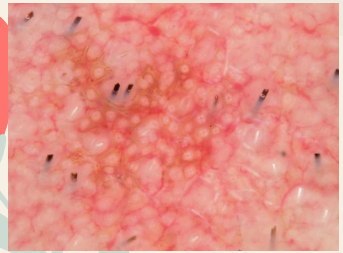
Vascular Lesion



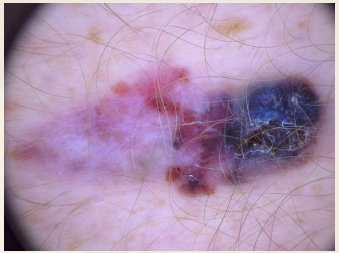
Vascular Lesion (50%)



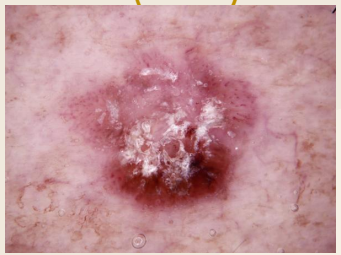
Melanocytic nevi



Melanocytic nevi (wrong)



Basal cell carcinoma



Basal cell carcinoma

Dermatofibroma

Advantages

- Convenient
- Affordable
- Accessible
- Empowering
- Confidential

QUESTIONS?

THANKS!

DO YOU HAVE ANY QUESTIONS?

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Citations

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