Basic Details of the Team and Problem Statement

Organization Name : Ministry Of Ayush

PS Code: 1344

Problem Statement Title : Al-based tool for preliminary diagnosis of Dermatological manifestations

Team Name : MASTROS

Team Leader Name: Chenthura Arunesh .B

Institute Code (AISHE): C- 37050

Theme Name: HealthTech

Idea/Approach Details

Effective models in order to predict skin diseases :

- **Data Collection:** Gather skin disease images and label them.

- **Data Prep:** Improve image quality and variety.

- **Model Training:** Use pre-trained deep learning models for accurate predictions.

- **Validation:** Assess model performance using metrics and visualizations.

- **Deployment:** Build a web interface for users to upload images and get predictions securely.

Use Cases :

- Immediate diagnosis and first aid.

- Raising Awareness about Skin Diseases and Their Remedies.

- Early Disease Prediction.

- Improving Access to Medical Care.

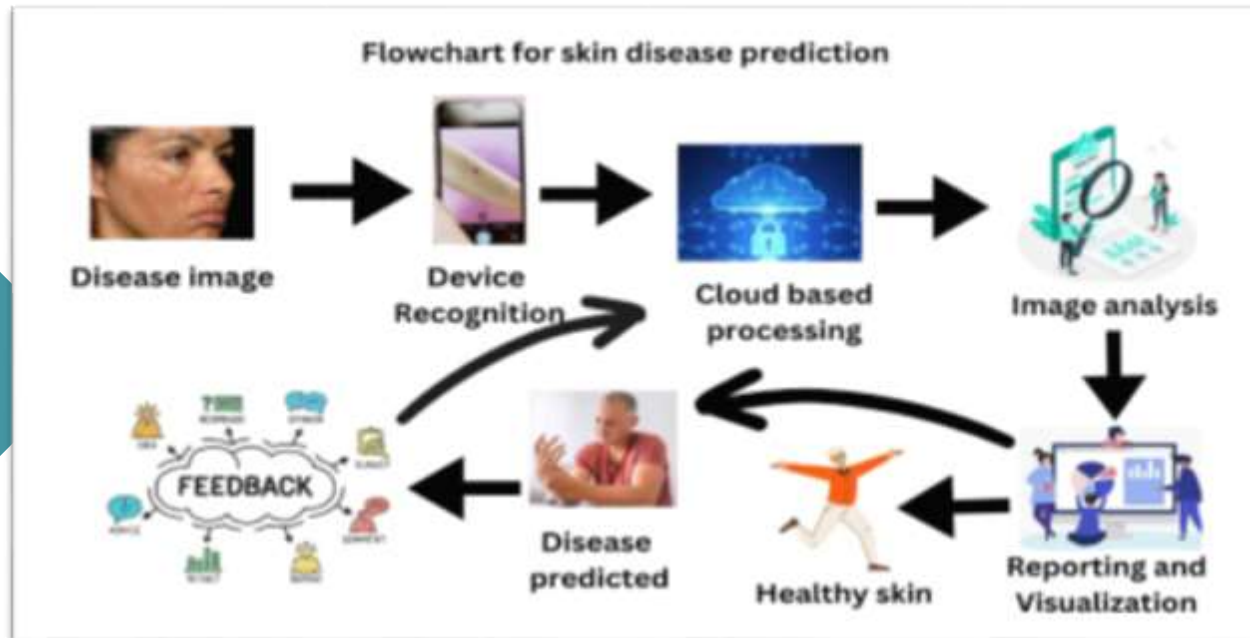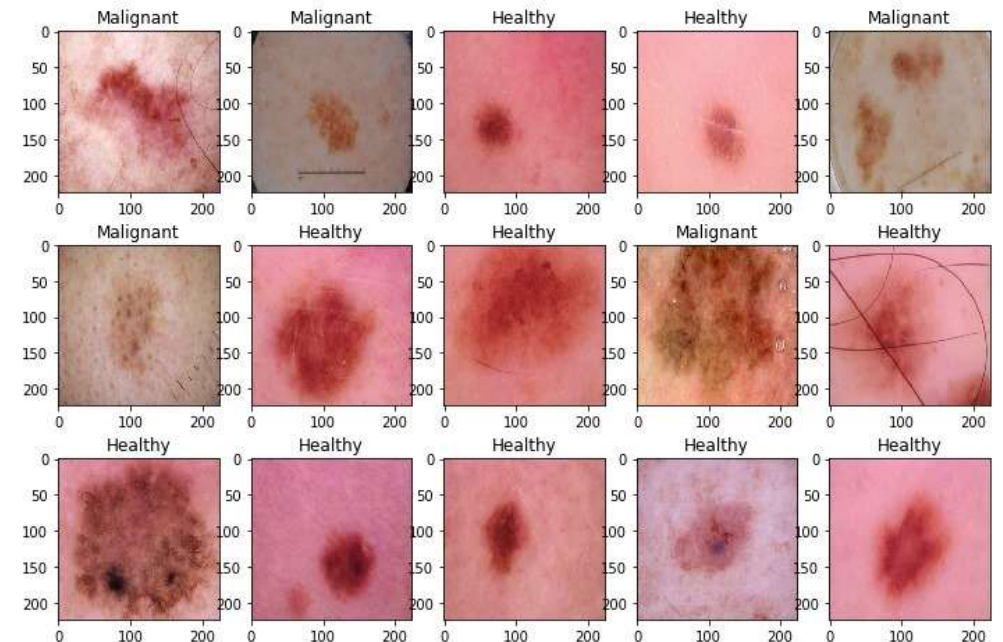- Implementing Preventative Measures.

Flowchart for skin disease prediction
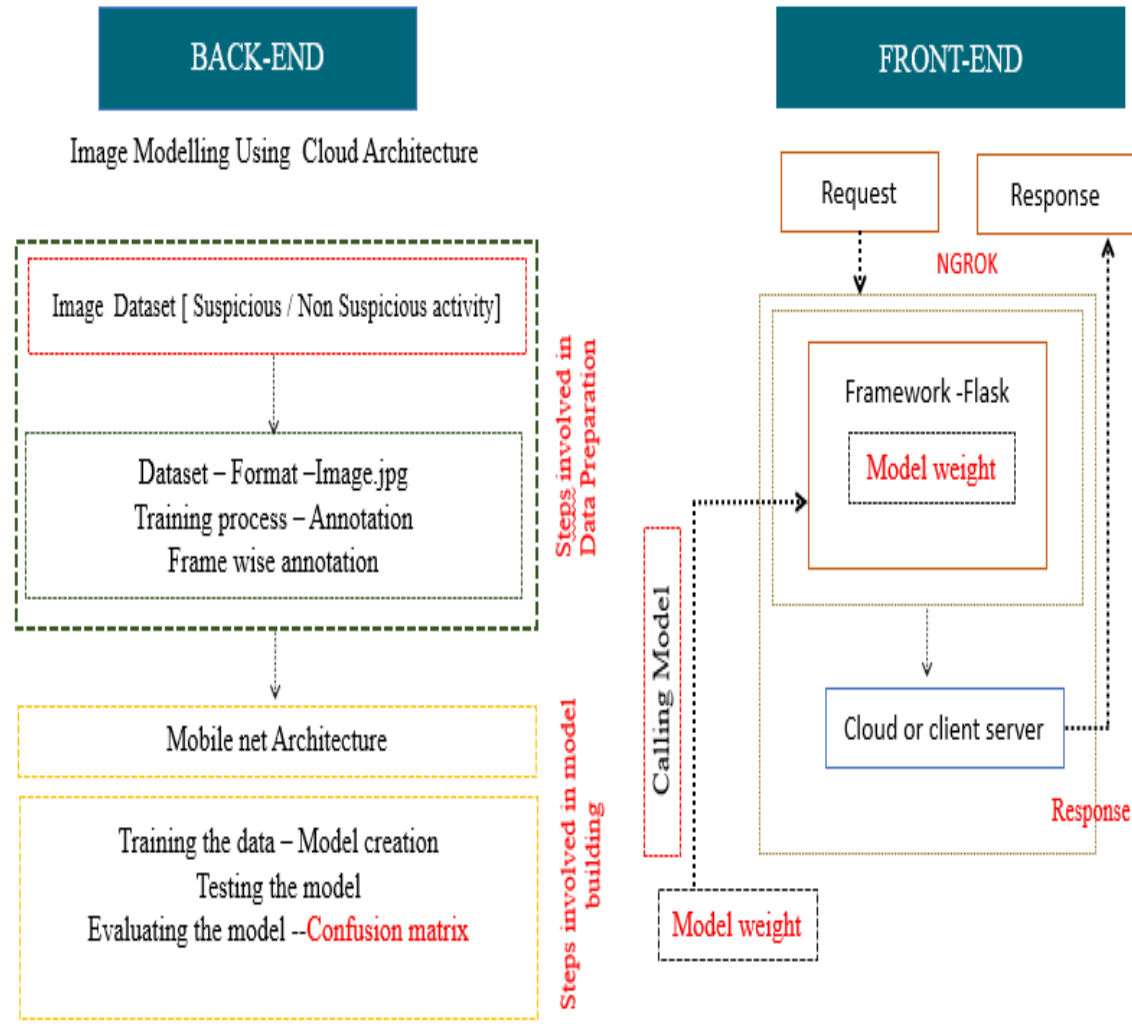
Image Dataset:
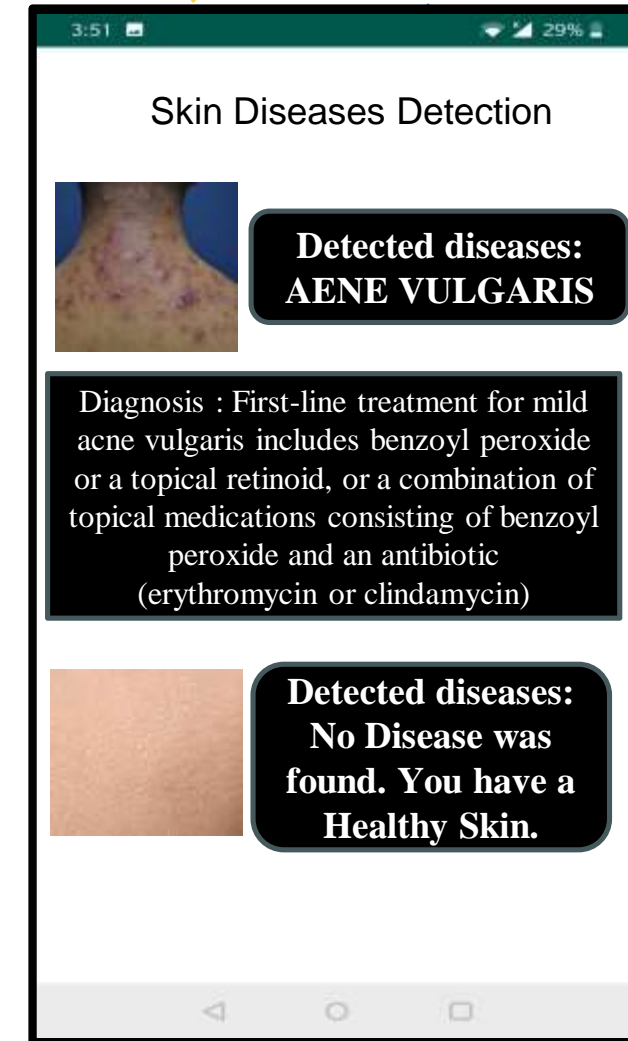
Idea/Approach Details

Show stopper

- Ethical and Privacy Concerns
- Misdiagnosis Risk
- Bias and Fairness
- Lack of Explainability
- Scalability and Performance
- Continual Learning and Maintenance

Technology stack:

- **Python**: The main programming language.
- **OpenCV (cv2)**: An open-source computer vision library.
- **Algorithm** : Inception,Resnet,Mobilenet,VGG
- **Jupyter Notebook**: An interactive coding environment for Python.
- **Flask :**For app development

BACK-END

Image Modelling Using Cloud Architecture

Image Dataset [Suspicious / Non Suspicious activity]

Dataset – Format –Image.jpg
Training process – Annotation
Frame wise annotation

Steps involved in Data Preparation

Mobile net Architecture

Training the data – Model creation
Testing the model
Evaluating the model --Confusion matrix

Steps involved in model building

FRONT-END

Request   Response

NGROK

Framework -Flask

Model weight

Cloud or client server

Calling Model

Response

Model weight

Skin Diseases Detection

Detected diseases: AENE VULGARIS

Diagnosis : First-line treatment for mild acne vulgaris includes benzoyl peroxide or a topical retinoid, or a combination of topical medications consisting of benzoyl peroxide and an antibiotic (erythromycin or clindamycin)

Detected diseases: No Disease was found. You have a Healthy Skin.

3

Team Member Details

Team Leader Name: **Chenthura Arunesh B**

Branch (Btech)   Stream (AI&DS)   Year (III)

Team Member 1 Name: **Nirmal R**

Branch (Btech)   Stream (AI&DS):   Year (III)

Team Member 2 Name: **Rahul Kannan P**

Branch (Btech)   Stream (AI&DS)   Year (III)

Team Member 3 Name: **Dhivya R G**

Branch (Btech)   Stream (AI&DS)   Year (III)

Team Member 4 Name: **Kowshika G**

Branch (Btech)   Stream (AI&DS)   Year (III)

Team Member 5 Name: **Bhavana S**

Branch (Btech)   Stream (AI&DS)   Year (III)

Team Mentor 1 Name: **Dr.N.SubaRani ,Associate Professor**

Category : Academic   Expertise (AI)   Domain Experience (in years):   15

Team Mentor 2 Name: **Aiyaz M ,CV Data Quality Analyst**

Category : Industry   Expertise (AI)   Domain Experience (in years):   15