

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	27 October 2023
Team ID	Team-592806
Project Name	Early Diagnosis Of Diseases Using Image Processing Of Human Nails
Maximum Marks	4 Marks

Technical Architecture:

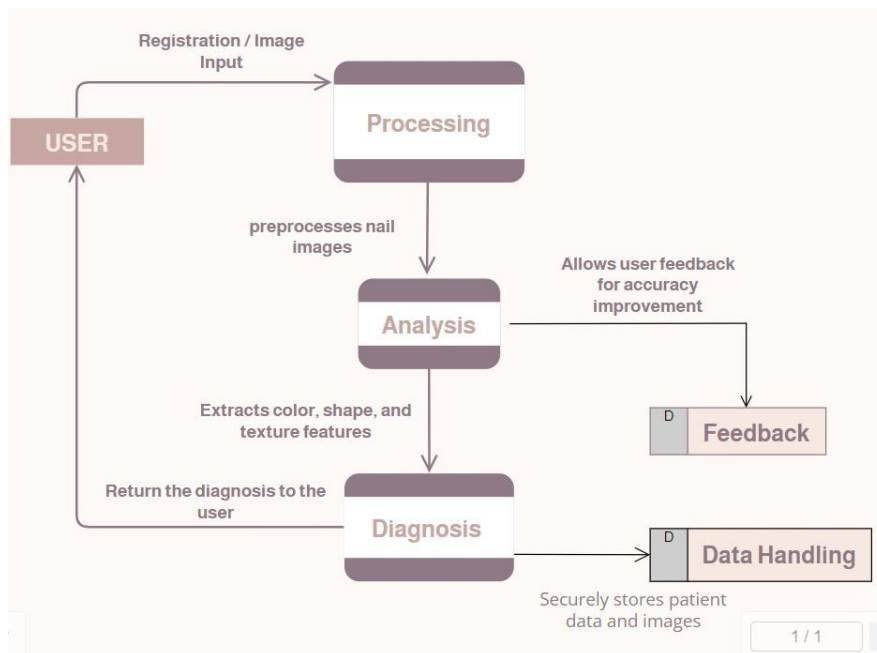


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface/Webiste for deployment	Interface for user interaction the application along with creating an user friendly interface.	Web-based UI(HTML, CSS, JavaScript / Angular Js/r React Js).
2.	Application Logic-1	Core Logic responsible for handling user requests.	Python, Flask, FastAPI or Node.js
3.	Data Collection	Gathering eye disease images data from hospital database.	Web Scraping, Data warehouses, ETL tools.
4.	Data Input	Handling and preprocessing user provided input	Forms, API's or command line input
5.	Model Integration	Interface for integrating deep learning model.	RESTful API endpoints(Flask, FastAPI, JSON,XML)
6.	Deep Learning Model	The predictive model for human nail diseases using human nail images.	Scikit-Learn, TensorFlow, PyTorch, Transfer Learning Techniques like VGG, Inception etc.
7.	Model Deployment	Hosting and Serving the deep learning model.	Flask or Streamlit

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Utilizing open-source frameworks for model development and deployment, ensuring cost-efficiency and flexibility which makes easy for the user to predict the disease at early stage.	Scikit-Learn, TensorFlow, PyTorch for model development. – Streamlit or Flask for API deployment. Google Colab Notebook for model prototyping and development.
2.	User-Friendly Interface	Creating an intuitive and user friendly interface for data input, visualization, and interact.	HTML, CSS, JavaScript for web-based UI. - React or similar frameworks for responsive design. - Data visualization libraries (e.g., D3.js). - User experience (UX) testing and design principles
3.	Accuracy	With sufficient trained and tested data the model is very accurate in detecting the nail disease at very earlier stage by just analyzing the nail image.	VGG16
4.	Scalability	Can take a huge dataset to train to make even more accurate	AI and ML
5.	Integration	Can be easily and accurately integrated into existing systems	Python Virtual Environment, Anaconda Navigator, etc.