

Model Development Phase Template

Date	20-06-2025
Team ID	SWDTID1749906902
Project Title	Early Stage Disease Diagnosis System Using Human Nail Image Processing
Maximum Marks	5 Marks

Feature Selection Report Template

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

Feature	Description	Selected (Yes/No)	Reasoning
Image Pixels (Raw)	Raw pixel values of the nail image.	Yes	Fundamental for image processing and feature extraction.
Color Histograms	Distribution of color intensities (e.g., RGB, HSV) across the nail image.	Yes	Provides information about nail discoloration, which can indicate various diseases.
Texture Features	Statistical measures describing texture patterns (e.g., contrast, homogeneity,	Yes	Texture changes in nails can be indicative of underlying medical conditions.

	energy) in the nail image.		
Shape Features	Characteristics of the nail's shape (e.g., curvature, aspect ratio, regularity of the nail plate).	Yes	Nail shape abnormalities are often associated with certain diseases.
Nail Bed Visibility	Extent to which the nail bed is visible and its characteristics.	Yes	Changes in nail bed appearance can be a symptom of systemic diseases.
Lunula Presence/Size	Presence and size of the lunula (the crescent-shaped white area at the base of the nail).	Yes	Variations in lunula size or absence can be linked to health issues.
Cuticle Condition	State of the cuticle (e.g., inflamed, detached, healthy).	Yes	Cuticle abnormalities can suggest autoimmune diseases or infections.
Nail Plate Thickness	Thickness of the nail plate.	Yes	Changes in nail thickness can indicate fungal infections or other medical conditions.
Presence of Ridges/Grooves	Observation of horizontal or vertical ridges/grooves on the	Yes	Ridges and grooves can be indicators of nutrient deficiencies or systemic illnesses.

	nail surface.		
Medical History (if available)	Relevant patient medical history data.	Yes	Provides crucial contextual information for diagnosis and can improve model accuracy.
Patient Age	Age of the patient.	Yes	Age can influence nail characteristics and disease prevalence.
Diagnosis Label	The confirmed diagnosis for the nail image.	Yes	The target variable for predictive modeling – essential for the project's goal.