

Model Development Phase Template

Date	20 June 2025
Name	Sakshi Santosh Patil
Project Title	Human-nail-image-processing-using-deep-learning
Maximum Marks	5 Marks

Model Selection Report:

Model	Description
Artificial Neural Network (ANN)	ANNs are foundational deep learning models composed of multiple fully connected layers. They are well-suited for tabular data or feature-engineered inputs, and while they can be adapted for image data, they do not inherently capture spatial relationships.
Convolutional Neural Network (CNN)	CNNs are powerful deep learning models specifically designed for image data. They automatically extract spatial features from images using convolutional layers, allowing effective classification of complex visual patterns. In this project, CNNs are used to classify Boletus, Lactarius, and Russula mushrooms based on their images.
Recurrent Neural Network (RNN)	RNNs are designed to model sequential data by maintaining a hidden state across time steps. While they are powerful for time series and language modeling, their utility in static image classification is limited.
VGG16	VGG16 is a deep convolutional neural network architecture designed for image classification, known for its simplicity and uniform structure. It uses a series of small 3x3 convolutional filters stacked in deep layers to capture features, enabling the model to learn complex patterns effectively. Pre-trained on ImageNet, VGG16 is well-suited for transfer learning, providing high accuracy, though it is computationally more intensive than some newer models. In this project it is used to detect the Nail Disease.

Conclusion:

Model Selected	
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