

Project Initialization and Planning Phase

Date	21 august 2024
Team ID	166
Project Title	Deep learning techniques for breast cancer prediction
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	The objective of this project is to develop an efficient and accurate breast cancer detection system using deep learning techniques, specifically the EfficientNetB3 model, to classify medical images into benign and malignant categories.
Scope	It involves the collection and preprocessing of a dataset sourced from Kaggle, specifically focusing on images labeled as benign or malignant. The project will explore various data augmentation techniques to enhance the training dataset and improve model performance.
Problem Statement	
Description	Breast cancer remains one of the leading causes of cancer-related mortality among women, highlighting the urgent need for early and accurate detection methods
Impact	Traditional diagnostic techniques can be time-consuming and may lead to misdiagnosis, which delays treatment and negatively impacts patient outcomes.
Proposed Solution	
Approach	Rising Incidence Rates Impact on Patient Lives Limitations of Traditional Methods

Key Features	benign and malignant images
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Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	e.g., 2 x NVIDIA V100 GPUs
Memory	RAM specifications	e.g., 8 GB
Storage	Disk space for data, models, and logs	e.g., 1 TB SSD
Software		
Frameworks	Python frameworks	e.g., Flask
Libraries	Additional libraries	e.g., tensorflow
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images