

Project Initialization and Planning Phase

Date	15 March 2024
Team ID	739877
Project Title	WCE Curated Colon Disease Classification using Deep Learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution)

Project Overview	
Objective	To develop a deep learning model capable of accurately classifying various colon diseases using WCE(Wireless Capsule Endoscopy) and colonoscopy images, aiding in early diagnosis, improving treatment planning, and enhancing patient outcomes.
Scope	The project involves building and training a deep learning model to classify colon diseases from medical images. It includes data preparation, model development, and testing, with the goal of helping doctors diagnose faster and more accurately.
Problem Statement	
Description	Early diagnosis of colon diseases is difficult due to manual image review, causing delays, errors, and increased workload for doctors.
Impact	Solving this problem would enhance diagnostic accuracy, reduce doctors' workload, speed up treatment decisions, leading to earlier intervention and better patient outcomes.
Proposed Solution	
Approach	Develop and train a deep learning model (primarily a CNN) using WCE image datasets. It includes data augmentation, model optimization, performance evaluation and deployment
Key Features	<ul style="list-style-type: none"> - Automated colon disease classification from images - High accuracy and fast predictions - Potential integration with EHR systems - Support for research through large-scale disease pattern analysis

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, TensorFlow
Libraries	Additional libraries	e.g., NumPy, OS
Development Environment	IDE, version control	e.g., Google Colab, VS code
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images