Project Initialization and Planning Phase

Date	2 Dec 2024
Team ID	TMID739650
Project Title	ADVANCED COVID-19 DETECTION USING LUNG X-RAYS BY DEEP LEARNING
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	To develop an advanced deep learning-based system for automatic detection of COVID-19 from lung X-ray images to aid healthcare professionals in timely diagnosis.
Scope	The project will focus on developing a model that can process and analyze lung X-ray images to detect COVID-19. The system will be tested on various datasets but will not include integration with real-world hospital systems or mobile applications.
Problem Statement	
Description	Manual interpretation of lung X-ray images for COVID-19 detection is slow and prone to error, which delays diagnosis and treatment, especially in areas with limited healthcare resources.
Impact	Solving this problem will enable faster, more accurate diagnosis of COVID-19, reducing strain on healthcare systems and improving patient outcomes.
Proposed Solution	
Approach	The solution involves using Convolutional Neural Networks (CNNs) and transfer learning to build a model that can classify lung X-rays as COVID-19 positive or negative. The system will be trained on a diverse dataset to ensure robustness.
Key Features	- Automatic COVID-19 detection from lung X-ray images. - High accuracy using deep learning models. - Fast processing for real-time results. - Scalable for deployment in healthcare settings.

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