Project Initialization and Planning Phase

Date	12 July 2024
Team ID	SWTID1720351492
Project Title	CovidVision: Advanced COVID-19 Detection from Lung X-Rays with 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	The primary aim of the "Covid-19 Detection from Lung X-rays" project is to use deep learning algorithms to analyse lung X-ray images for signs of Covid-19 infection, providing accurate and rapid diagnosis to aid in early detection and containment of the virus.
Scope	The scope of the "Covid-19 Detection from Lung X-rays" project includes developing and deploying an AI system to detect Covid-19 from lung X-rays. The system will be integrated with hospital systems for expedited diagnosis, deployed in rural clinics for enhanced screening, and utilized by public health authorities to monitor trends and allocate resources for targeted interventions.
Problem Statement	
Description	The problem is the need for rapid, accurate Covid-19 diagnosis, especially in overwhelmed hospitals and rural areas with limited access to expert radiologists.
Impact	Solving this problem will lead to faster diagnosis, improved patient management, containment of the virus in underserved areas, and informed public health interventions.
Proposed Solution	

Approach	Utilize deep learning algorithms and vast datasets to analyze lung X-ray images for signs of Covid-19 infection. Implement the system in hospitals, rural clinics, and public health monitoring.
Key Features	**Key Features** • Rapid and correct analysis of lung X-rays. • Integration with existing hospital systems for efficient triage. • Accessibility for rural clinics with limited radiology ability. • Real-time data analysis for public health monitoring and resource allocation.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	GPU T4 x 2
Memory	RAM specifications	Max 30 GB
Storage	Disk space for data, models, and logs	Max 57.6 GB
Software		
Frameworks	Python frameworks	Flask, Gradio
Libraries	Additional libraries	TensorFlow, Sklearn, OpenCV, PIL
Development Environment	IDE, version control	Kaggle Jupyter Notebook, Git,
Data		
Data	Source, size, format	Kaggle dataset, Total - 13808 images, 7232 (Training)