Model Development Phase Template

Date	15 March 2024
Team ID	SWTID1720425899
Project Title	CovidVision: Advanced COVID-19 Detection from Lung X-rays with Deep Learning
Maximum Marks	5 Marks

Model Selection Report

In the model selection report for future deep learning and computer vision projects, various architectures, such as CNNs or RNNs, will be evaluated. Factors such as performance, complexity, and computational requirements will be considered to determine the most suitable model for the task at hand.

Model Selection Report:

Model	Description
Xception	The Xception model, short for Extreme Inception, is a deep convolutional neural network architecture that leverages depthwise separable convolutions. Pretrained on the ImageNet dataset, Xception is known for its efficiency and performance in image classification tasks. For this project, the Xception model is fine-tuned for the task of COVID-19 detection from lung X-rays.
VGG16	Utilizes the VGG16 architecture pretrained on the ImageNet dataset. The model's final layers are fine-tuned for the specific task of COVID-19 detection in lung X-rays. Transfer learning leverages the feature extraction capabilities of VGG16, reducing the need for extensive training data and computational resources while improving model performance and generalization.
Inception V3	The Inception V3 model, part of the Inception family of networks, is

	known for its efficiency and deep architecture. Pretrained on ImageNet, Inception V3 employs inception modules that allow the model to capture multi-scale features effectively. For this project, the Inception V3 model is fine-tuned for the task of COVID-19 detection from lung X-rays.
ResNet50	Employs the ResNet50 architecture pretrained on ImageNet, with the addition of custom dense layers tailored for the COVID-19 detection task. ResNet50's residual blocks help mitigate the vanishing gradient problem, allowing for deeper network training and improved accuracy. Fine-tuning is applied to adapt the model to the lung X-ray dataset.