Model Development Phase Template

Date	15 March 2024
Team ID	SWTID1720440447
Project Title	Covid Vision: Advanced COVID-19 Detection from Lung X-rays with Deep Learning
Maximum Marks	5 Marks

Model Selection Report:

Model	Description
VGG16	VGG16 is a deep convolutional neural network model designed by the Visual Graphics Group at Oxford. It consists of 16 layers, including 13 convolutional layers and 3 fully connected layers. The model is known for its simplicity and depth, making it effective for image classification tasks. Its architecture includes small 3x3 convolution filters and 2x2 max-pooling layers, which aid in extracting hierarchical features.
RESNET50	ResNet50 is a deep residual network that introduces residual learning to alleviate the vanishing gradient problem in very deep networks. It features 50 layers with residual blocks, each comprising a shortcut connection that bypasses one or more layers. This architecture allows gradients to flow through the network more effectively, facilitating the training of very deep networks with improved accuracy and reduced risk of overfitting. ResNet50 is ideal for complex image recognition tasks.
XCEPTION	Xception, short for Extreme Inception, extends the Inception model by applying depthwise separable convolutions. This approach enhances computational efficiency and reduces the number of parameters while maintaining high performance. The architecture uses depthwise separable

	convolutions that apply a single filter per input channel, resulting in state-of-the-art performance on several benchmarks.
INCEPTION	InceptionV3 is an advanced version of the Inception model, known for its novel architecture that includes multiple filter sizes in parallel at each convolutional layer. This design captures a wide range of spatial features with fewer parameters by using factorization and auxiliary classifiers to improve training speed and accuracy. InceptionV3 is highly effective for image recognition, object detection, and tasks requiring fine-grained feature extraction.