Model Development Phase Template

Date	4 July 2024
Team ID	SWTID1720097611
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
VGG 16	VGG16 is a deep convolutional neural network with 16 layers, using small (3x3) convolution filters. It is simple yet effective for image classification tasks. It provides good accuracy but is computationally intensive due to the high number of parameters. Simple architecture with deep layers. High memory and computation cost.
ResNet50	ResNet50, a 50-layer deep network, employs residual connections to allow training of very deep networks by addressing the vanishing gradient problem. It has good accuracy and robustness for image classification and object detection tasks. It is complex due to residual connections but highly effective. Moderate to high, with efficient memory usage.

Inception	Inception uses parallel convolutions with different filter sizes within the same module, making it efficient and effective in capturing spatial hierarchies. It has total 50 layers. It has high accuracy with optimized computational cost. Moderate to high in complexity, using multi-scale processing. It is Efficient in terms of computation and memory usage.
Xception	Xception replaces Inception modules with depthwise separable convolutions, enhancing efficiency and performance. It has 71 Convolution layers. Input size is (299*299). Achieves top-level performance with high accuracy. High Complexity, due to advanced convolution techniques. Efficient and effective, but requires substantial computational resources.