Model Development Phase Template

Date	July 8 2024
Team ID	SWTID1719935963
Project Title	Automated Weather Classification using Transfer 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

VGG19	Accuracy : 86.67
	
	We downloaded the base model without the last layer making include_top parameter to false while downloading
	
	In the final layers of our neural network, we flatten the VGG16 output, add a 1024-neuron dense layer with ReLU activation, and a final dense layer with 5 neurons using softmax for classification.
	
	`Model performance on test images:`
	`Accuracy = 0.8666666746139526`
	`Loss = 0.46312215924263`

ResNet50	Accuracy : 64.33
	
	We downloaded the base model without the last layer making include_top parameter to false while downloading
	
	In the final layers, the VGG16 output is flattened, followed by dense layers with 250 and 100 neurons using ReLU activation. The final dense layer with 5 neurons and softmax activation produces a probability distribution for classifying into 5 categories
	
	`Model performance on test images:`
	`Accuracy = 0.6433333158493042`
	`Loss = 0.990552544593811`

VGG16	Accuracy : 93.66
	
	We downloaded the base model without the last layer making include_top parameter to false while downloading
	
	In the final layers of our neural network, we flatten the VGG16 output, add a 1024-neuron dense layer with ReLU activation, and a final dense layer with 5 neurons using softmax for classification.
	
	`Model performance on test images:`
	`Accuracy = 0.9366666674613953`
	`Loss = 0.23134218156337738`
	
	As this model gives us the best accuracy we are using this model