Model Development Phase Template

Date	05 June 2024
Team ID	739975
Project Title	To Predict Consumer Price Index
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
Linear Regressor	A Linear Regressor is a fundamental algorithm in machine learning used for regression tasks. It models the relationship between a dependent variable and one or more independent variables by fitting a linear equation to the observed data.
Random Forest Regressor	A Random Forest Regressor is an ensemble learning method for regression tasks that operates by constructing multiple decision trees during training and outputting the mean prediction of the individual trees. It helps to improve predictive accuracy and control over-fitting
KNN Regressor	A K-Nearest Neighbors (KNN) Regressor is a non-parametric algorithm that predicts the target value for a given input by averaging the values of its k-nearest neighbors in the feature space. It's simple and effective for many regression tasks, particularly when the relationship between the features and the target variable is complex.

AdaBoost Regressor	An AdaBoost Regressor (Adaptive Boosting Regressor) is an ensemble learning method that combines multiple weak learners (typically decision trees) to create a strong predictive model. The key idea is to focus on instances that were previously mispredicted and adjust the weights accordingly to improve performance.
Lasso Regressor	Lasso Regression (Least Absolute Shrinkage and Selection Operator) is a linear regression technique that includes an L1 penalty, which can shrink some coefficients to zero, effectively performing variable selection. This makes Lasso Regression useful for models with many features, as it can reduce the complexity and improve the interpretability.
Gradient Boosting Regressor	Gradient Boosting Regressor is an ensemble machine learning algorithm that builds multiple decision trees sequentially. Each tree tries to correct the errors made by the previous trees. This method can produce a powerful predictive model that typically performs very well on a variety of tasks.