Model Development Phase Template

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| Date | 06 JULY 2024 |
| Team ID | 739909 |
| Project Name | Unlocking Silent Signals: Decoding Body Language With Mediapipe |
| Maximum Marks | 6 Marks |

Model Selection Report:

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

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| Model | Description | Hyperparameters Performance | Metric (e.g., Accuracy, F1 Score) |
| SVM | SVM is particularly effective for body\_language\_decoder prediction due to its robustness to overfitting, especially in high-dimensional spaces, and its ability to handle non-linear relationships through kernel tricks. |  | Accuracy score = 74% |
| Logistic Regression  Ridge Classifier | Logistic Regression is effective  for body\_language\_decoder  prediction due to its simplicity,  interpretability, and efficiency  in binary classification  problems. It provides  probabilistic outputs, aiding in  understanding prediction  confidence.      Ridge Classifier is effective for  body\_language\_decoder  prediction due to its ability to  handle multicollinearity by  adding a penalty to the model  complexity. This regularization  helps in reducing overfitting,  making it robust in high-  dimensional spaces. |  | Accuracy score  = 74%  Accuracy score  = 74% |
| Gradient Boosting Classifier | Gradient Boosting Classifier is  effective for  body\_language\_decoder  prediction  due to its ability to combine  weak learners iteratively,  improving model accuracy. Its  flexibility in handling complex  relationships makes it a  powerful tool for  classification tasks. |  | Accuracy score  = 86% |
| Random Forest | Ensemble of decision trees;  robust, handles complex  relationships, reduces  overfitting, and provides feature  importance for  body\_language\_decoder  prediction. |  | Accuracy score  = 90% |