

**Model Optimization and Tuning Phase Report**

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| Date | 20 June 2*02*4 |
| Team ID | 739900 |
| Project Title | Predicting Permanent Magnet Resistance Of Electronic Motor Using Machine Learning. |
| Maximum Marks | 10 Marks |

**Model Optimization and Tuning Phase**

The Model Optimization and Tuning Phase involves refining machine learning models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

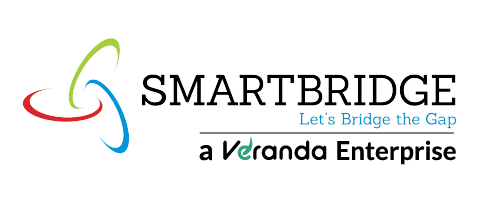
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| **Final Model** | **Reasoning** |

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| **Model** | **Optimized Metric** |

**Hyperparameter Tuning Documentation (6 Marks):**

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| **Model** |  | **Tuned Hyperparameters** |  | **Optimal Values** |
| Logistic regression, Decision tree regression, Randomforest regression | - |  | - |  |

**Performance Metrics Comparison Report (2 Marks):**



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| --- | --- |
| Logistic regression,  Decision tree regression,Randomforest regression | **-** |

**Final Model Selection Justification (2 Marks):**

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| --- | --- |
| Random Forest regression | The Random Forest Regression model was selected for its superior performance, exhibiting high accuracy . Its ability to handle complex relationships, minimize over fitting, and optimize predictive accuracy aligns with project objectives, justifying its selection as the final model. |