**Model Optimization and Tuning Phase Template**

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| Date | 15 March 2024 |
| Team ID | LTVIP2024TMID24892 |
| Project Title | Liver Patient Identification – prediction of liver patient |
| 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.

### Hyperparameter Tuning Documentation (6 Marks):

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| --- | --- | --- |
| **Model** | **Tuned Hyperparameters** | **Optimal Values** |
| Random Forest |  |  |
| SVM |  |  |
| KNN |  |  |

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

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| --- | --- |
| **Model** | **Baseline Metric, optimal metrics** |
| Random Forest |  |
| SVM |  |
| KNN |  |

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

|  |  |
| --- | --- |
| **Final Model** | **Reasoning** |
| Random Forest | * This model has been selected because it has the high accuracy and f1-score compared to the other model mentioned above. |

**NOTE: I have done other models like Gradient Boosting Classifier,** **AdaBoost Classifier,** **Randomized Search CV these model will be available in the lliver.ipynb file.**