

Model Development Phase Template

Date	10 July 2024
Team ID	team-739817
Project Title	Revolutionising Liver Care- Predicting Liver Cirrhosis using advanced Machine Learning
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.

Model Selection Report:

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)																																		
KNN	K-Nearest Neighbour got highest accuracy in our model	Best parameters: {'bootstrapping': False, 'max_depth': 20, 'max_features': 'sqrt', 'min_samples_leaf': 1, 'min_samples_split': 10, 'n_estimators': 200}	<div>Accuracy: 0.887719298245614</div> <div>Confusion Matrix:</div> <div><div>[[68 21]</div><div>[11 185]]</div></div> <div>Classification Report:</div> <table><thead><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr></thead><tbody><tr><td>NO</td><td>0.86</td><td>0.76</td><td>0.81</td><td>89</td></tr><tr><td>YES</td><td>0.90</td><td>0.94</td><td>0.92</td><td>196</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.89</td><td>285</td></tr><tr><td>macro avg</td><td>0.88</td><td>0.85</td><td>0.86</td><td>285</td></tr><tr><td>weighted avg</td><td>0.89</td><td>0.89</td><td>0.89</td><td>285</td></tr></tbody></table>						precision	recall	f1-score	support	NO	0.86	0.76	0.81	89	YES	0.90	0.94	0.92	196	accuracy			0.89	285	macro avg	0.88	0.85	0.86	285	weighted avg	0.89	0.89	0.89	285
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XgBoost	We have used XgBoost with best parameters	Best parameters: {'colsample_bytree': 0.8, 'learning_rate': 0.01, 'max_depth': 5, 'n_estimators': 200, 'subsample': 0.8}	<div>Confusion Matrix: [[39 16] [10 125]]</div> <div>Classification Report:</div> <table><thead><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr></thead><tbody><tr><td>0</td><td>0.80</td><td>0.71</td><td>0.75</td><td>55</td></tr><tr><td>1</td><td>0.89</td><td>0.93</td><td>0.91</td><td>135</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.86</td><td>190</td></tr><tr><td>macro avg</td><td>0.84</td><td>0.82</td><td>0.83</td><td>190</td></tr><tr><td>weighted avg</td><td>0.86</td><td>0.86</td><td>0.86</td><td>190</td></tr></tbody></table>		precision	recall	f1-score	support	0	0.80	0.71	0.75	55	1	0.89	0.93	0.91	135	accuracy			0.86	190	macro avg	0.84	0.82	0.83	190	weighted avg	0.86	0.86	0.86	190
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