**Thresholding Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Threshold** | **Accuracy** | **Precision** | **Recall** | **F1** | **ROC-AUC** |
| **0.100** | **0.966** | **0.918** | **0.982** | **0.949** | **0.992** |
| **0.200** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.300** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.400** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.500** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.600** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.700** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.800** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |
| **0.900** | **0.960** | **0.917** | **0.965** | **0.940** | **0.992** |

**Optimum Threshold (max F1): 0.1 with F1: 0.949**

**Accuracy: 0.966**

**F1 Score: 0.949**

**ROC-AUC: 0.992**

**Confusion Matrix (Custom Threshold 0.1):**

|  |  |  |
| --- | --- | --- |
|  | **Predicted 0** | **Predicted 1** |
| **Actual 0** | **113** | **5** |
| **Actual 1** | **1** | **56** |

**Log-Likelihood & Permutation Feature Importance (F1):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Feature** | **Log-Likelihood** | **Importance Mean** | **Importance Std** |
| **1** | **2.403** | **-0.000** | **0.004** |
| **2** | **8.341** | **0.119** | **0.013** |
| **3** | **6.598** | **0.097** | **0.019** |
| **4** | **5.258** | **0.085** | **0.014** |
| **5** | **3.992** | **0.041** | **0.010** |
| **6** | **7.020** | **0.133** | **0.010** |
| **7** | **3.616** | **0.021** | **0.012** |
| **8** | **7.499** | **0.141** | **0.016** |
| **9** | **5.064** | **0.040** | **0.010** |