# NB

|  |  |
| --- | --- |
| Correctly Classified Instances | 86.8852 % |
| Incorrectly Classified Instances | 13.1148 % |
| Kappa statistic | 0.7362 |
| Mean absolute error | 0.1653 |
| Root mean squared error | 0.3116 |
| Relative absolute error | 33.2256 % |
| Root relative squared error | 62.3266 % |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TP Rate** | **FP Rate** | **Precision** | **Recall** | **F-Measure** | **MCC** | **ROC Area** | **PRC Area** | **Class** |
| 0.906 | 0.172 | 0.853 | 0.906 | 0.879 | 0.738 | 0.920 | 0.859 | <50 |
| 0.828 | 0.094 | 0.889 | 0.828 | 0.857 | 0.738 | 0.920 | 0.942 | >50\_1 |
| **0.869** | **0.135** | **0.870** | **0.869** | **0.868** | **0.738** | **0.920** | **0.899** |  |

# Bayesian Network

|  |  |
| --- | --- |
| **Correctly Classified Instances** | 88.5246 % |
| **Incorrectly Classified Instances** | 11.4754 % |
| **Kappa statistic** | 0.7688 |
| **Mean absolute error** | 0.1633 |
| **Root mean squared error** | 0.3069 |
| **Relative absolute error** | 32.8193 % |
| **Root relative squared error** | 61.3825 % |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TP Rate** | **FP Rate** | **Precision** | **Recall** | **F-Measure** | **MCC** | **ROC Area** | **PRC Area** | **Class** |
| 0.938 | 0.172 | 0.857 | 0.938 | 0.896 | 0.773 | 0.920 | 0.859 | <50 |
| 0.828 | 0.063 | 0.923 | 0.828 | 0.873 | 0.773 | 0.920 | 0.943 | >50\_1 |
| **0.885** | **0.120** | **0.888** | **0.885** | **0.885** | **0.773** | **0.920** | **0.899** |  |

# KNN

|  |  |
| --- | --- |
| **Correctly Classified Instances** | 80.3279 % |
| **Incorrectly Classified Instances** | 19.6721 % |
| **Kappa statistic** | 0.6043 |
| **Mean absolute error** | 0.1949 |
| **Root mean squared error** | 0.387 |
| **Relative absolute error** | 39.1617 % |
| **Root relative squared error** | 77.4 % |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TP Rate** | **FP Rate** | **Precision** | **Recall** | **F-Measure** | **MCC** | **ROC Area** | **PRC Area** | **Class** |
| 0.844 | 0.241 | 0.794 | 0.844 | 0.818 | 0.606 | 0.875 | 0.862 | <50 |
| 0.759 | 0.156 | 0.815 | 0.759 | 0.786 | 0.606 | 0.871 | 0.868 | >50\_1 |
| **0.803** | **0.201** | **0.804** | **0.803** | **0.803** | **0.606** | **0.873** | **0.865** |  |

# LOGISTICS RESGRESSION

|  |  |
| --- | --- |
| **Correctly Classified Instances** | 86.8852 % |
| **Incorrectly Classified Instances** | 13.1148 % |
| **Kappa statistic** | 0.7362 |
| **Mean absolute error** | 0.2135 |
| **Root mean squared error** | 0.3289 |
| **Relative absolute error** | 42.906 % |
| **Root relative squared error** | 65.7851 % |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TP Rate** | **FP Rate** | **Precision** | **Recall** | **F-Measure** | **MCC** | **ROC Area** | **PRC Area** | **Class** |
| 0.906 | 0.172 | 0.853 | 0.906 | 0.879 | 0.738 | 0.908 | 0.857 | <50 |
| 0.828 | 0.094 | 0.889 | 0.828 | 0.857 | 0.738 | 0.908 | 0.936 | >50\_1 |
| **0.869** | **0.135** | **0.870** | **0.869** | **0.868** | **0.738** | **0.908** | **0.895** |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Author** | **Methodology** | **Dataset** | **Metrices** |
| 1 | Mistura Muibideen and Rajesh Prasad -**2020** | **Bayesian Network** | Cleveland dataset: 14 Attributes | Accuracy: 85%  Precision: 86%  Recall: 85%  F1- Score: 85% |
| 2 | Aniruddha Dutta, Tamal Batabyal, Meheli Basu, Scott T. Acton **-2020** | **2-layer CNN** | NHANES dataset:  7 attributes | Accuracy: 81.78  Recall: 77.3%  Specificity: 81.8 %  AUC: 76.78 % |
| 3 | Mursal Furqan, Hiba Rajput,Sanam Narejo -2020 | **Logistic Regression** | University  College Irvine (UCI) Dataset | Accuracy: 92% |
| 4 | Sahithi Ankireddy -2020 | **Deep Neural**  **Network (DNN)** | Cleveland dataset: 14 Attributes | Accuracy: 85.60% |
| 5 | Javad Hassannataj Joloudari , et al. -2020 | **Random trees (RTs),**  Decision tree of C5.0,  Support vector machine (SVM), Decision tree of Chi-squared automatic interaction detection (CHAID) | The Z-Alizadeh Sani dataset.  55 Features | AUC: 93.40% |
| 6 |  |  |  |  |
| 7 | Our proposed approach | **Bayesian Network With Wrapper subset evaluation (For feature selection)** | Cleveland dataset: 8 Attributes | Accuracy: **88.53**%  Precision: **88.8** %  Recall: **88.5**%  F1- Score: **88.5** %  ROC Area**: 92.0%** |

**Comparison Various Approaches with our Proposed Approach**Table 4-3: Comparison of various approaches with our proposed approach