**Evaluation Metrics of the Confusion Matrix for the Following Algorithms**

**Random Forest -Classification Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **precision** | **Recall** | **F1-score** | **Support** |
| 0 | 0.93 | 0.92 | 0.92 | 85 |
| 1 | 0.86 | 0.88 | 0.87 | 49 |
| **accuracy** |  |  | 0.90 | 134 |
| **Macro Avg** | 0.89 | 0.90 | 0.90 | 134 |
| **Weighted Avg** | 0.90 | 0.90 | 0.90 | 134 |

**Questions:**

1. What is the **overall performance** of the model?

**Answer:** 0.90

1. What is the percentage of **correct classification** of each **respective class?**

**Answer: 0 -** 0.92, **1 -** 0.88

1. What is the percentage of **correctly and wrongly classified individuals** of each class?

**Answer: 0 -** 0.93, **1 -** 0.86

1. How will you **validate** **your model** if the recall value is low and the precision value is high?

**Answer: F1-score** of **0 -** 0.92, **F1-score** of **1 -** 0.87

1. What is the **Average of precision performance?**

**Answer:** 0.89

1. What is the **Average of recall performance?**

**Answer:** 0.90

1. What is the **Average of the F1 measure performance?**

**Answer:** 0.90

1. What is the **weight or proportion** of each participating class?

**Answer: Weighted Avg of precision -** 0.90,

**Weighted Avg of recall –** 0.90,

**Weighted Avg of F1-score –** 0.90

**Decision Tree – Classification Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **precision** | **Recall** | **F1-score** | **Support** |
| 0 | 0.90 | 0.89 | 0.90 | 85 |
| 1 | 0.82 | 0.84 | 0.83 | 49 |
| **accuracy** |  |  | 0.87 | 134 |
| **Macro Avg** | 0.86 | 0.87 | 0.86 | 134 |
| **Weighted Avg** | 0.87 | 0.87 | 0.87 | 134 |

**Questions:**

1. What is the **overall performance** of the model?

**Answer:** 0.87

1. What is the percentage of **correct classification** of each **respective class?**

**Answer: 0 –** 0.89, **1 –** 0.84

1. What is the percentage of **correctly and wrongly classified individuals** of each class?

**Answer: 0 -** 0.90, **1 -** 0.82

1. How will you **validate** **your model** if the recall value is low and the precision value is high?

**Answer: F1-score** of **0 -** 0.90, **F1-score** of **1 -** 0.83

1. What is the **Average of precision performance?**

**Answer:** 0.86

1. What is the **Average of recall performance?**

**Answer:** 0.87

1. What is the **Average F1 measure performance?**

**Answer:** 0.86

1. What is the **weight or proportion** of each participating class?

**Answer: Weighted Avg of precision -** 0.87,

**Weighted Avg of recall –** 0.87,

**Weighted Avg of F1-score –** 0.87

**Support Vector Machine – Classification Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **precision** | **Recall** | **F1-score** | **Support** |
| 0 | 0.76 | 0.96 | 0.85 | 85 |
| 1 | 0.88 | 0.47 | 0.61 | 49 |
| **accuracy** |  |  | 0.78 | 134 |
| **Macro Avg** | 0.82 | 0.72 | 0.73 | 134 |
| **Weighted Avg** | 0.81 | 0.78 | 0.76 | 134 |

**Questions:**

1. What is the **overall performance** of the model?

**Answer:** 0.78

1. What is the percentage of **correct classification** of each **respective class?**

**Answer: 0 –** 0.96, **1 –** 0.47

1. What is the percentage of **correctly and wrongly classified individuals** of each class?

**Answer: 0 –** 0.76, **1 –** 0.88

1. How will you **validate** **your model** if the recall value is low and the precision value is high?

**Answer: F1-score** of **0 -** 0.85, **F1-score** of **1 -** 0.61

1. What is the **Average of the precision performance?**

**Answer:** 0.82

1. What is the **Average of recall performance?**

**Answer:** 0.72

1. What is the **Average of the F1 measure performance?**

**Answer:** 0.73

1. What is the **weight or proportion** of each participating class?

**Answer: Weighted Avg of precision -** 0.81,

**Weighted Avg of recall –** 0.78,

**Weighted Avg of F1-score –** 0.76