Machine Learning -> Supervised Learning -> Classification

Dataset : Social_Network_Ads

Classification Report based on Confusion Matrix : SVM,DT,RF Algorithms

| Possible Questions raised | Evaluation Metrics | Support Vector Classifier | Decision Tree Classifier | Random Forest Classifier |
|--|---------------------------|---------------------------|--------------------------|--------------------------|
| What is the overall performance of the model ? How well it is performed on whole ? What percentage of the predictions made by the model are correct? | Accuracy | 0.95 | 0.91 | 0.93 |
| What is the correct performance of the Purchased? | | 0.95 | 0.82 | 0.91 |
| What is the correct Performance of not Purchased ? | Recall | 0.95 | 0.95 | 0.93 |
| What is the performance of corect and wrongly classified of Purchased | | 0.88 | 0.86 | 0.83 |
| What is the performance of corect and wrongly classified of not Purchased? | Precision | 0.98 | 0.93 | 0.96 |
| What is the overall performance of Purchesed ? | | 0.91 | 0.84 | 0.87 |
| What is the overall performance of not Purchased ? | F1 Score | 0.96 | 0.94 | 0.95 |
| What is the Average performance of correctly classified? | | 0.95 | 0.88 | 0.92 |
| What is the Average performance of correctly and wrongly classified? | Macro Average | 0.95 | 0.89 | 0.9 |
| What is the Average of the overall performance ? | | 0.94 | 0.89 | 0.91 |
| What is the exact proportion / weight of the correctly classified ? | | 0.95 | 0.91 | 0.93 |
| What is the exact proportion / weight of the correctly & wrongly classified ? | weighted Average | 0.95 | 0.91 | 0.93 |
| What is the exact proportion of the overall performance? | | 0.95 | 0.91 | 0.93 |

Result: Thereby, Support Vector Classifier has a Good Prediction compared to others based on overall performance.