

Model Development Phase Template

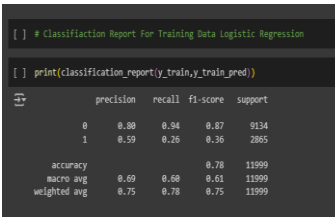
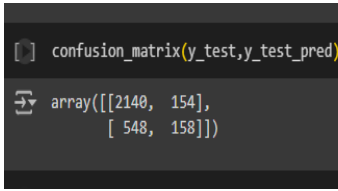
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|---------------|-----------------------------|
| Date | 10 June 2024 |
| Team ID | 739640 |
| Project Title | Work Force Retention System |
| Maximum Marks | 4 Marks |

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

Initial Model Training Code:

Model Validation and Evaluation Report:

| Model | Classification Report | Accuracy | Confusion Matrix |
|---------------------|---|----------|---|
| Logistic Regression | <pre>[] # Classification Report For Training Data Logistic Regression [] print(classification_report(y_train,y_train_pred))</pre>  | 77.93 | <pre>confusion_matrix(y_test,y_test_pred)</pre>  |

| Random Forest | <pre>#Classification Report For Training Data With Random Forest Classifier print(classification_report(y_test,y_test_pred))</pre> <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>0.99</td><td>0.99</td><td>0.99</td><td>2294</td></tr><tr><td>1</td><td>0.98</td><td>0.96</td><td>0.97</td><td>706</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.99</td><td>3000</td></tr><tr><td>macro avg</td><td>0.98</td><td>0.98</td><td>0.98</td><td>3000</td></tr><tr><td>weighted avg</td><td>0.99</td><td>0.99</td><td>0.99</td><td>3000</td></tr></tbody></table> | | precision | recall | f1-score | support | 0 | 0.99 | 0.99 | 0.99 | 2294 | 1 | 0.98 | 0.96 | 0.97 | 706 | accuracy | | | 0.99 | 3000 | macro avg | 0.98 | 0.98 | 0.98 | 3000 | weighted avg | 0.99 | 0.99 | 0.99 | 3000 | 98.6 | <pre>#Confusion Matrix For Training Data With Random Forest Classifier confusion_matrix(y_test, y_test_pred)</pre> <pre>array([[2288, 14], [26, 688]])</pre> |
|---------------|---|--------|-----------|---------|----------|---------|---|------|------|------|------|---|------|------|------|-----|----------|--|--|------|------|-----------|------|------|------|------|--------------|------|------|------|------|------|---|
| | precision | recall | f1-score | support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 0.99 | 0.99 | 0.99 | 2294 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.98 | 0.96 | 0.97 | 706 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| accuracy | | | 0.99 | 3000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| macro avg | 0.98 | 0.98 | 0.98 | 3000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| weighted avg | 0.99 | 0.99 | 0.99 | 3000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |