

Write a classification program and compare various classification algorithms using payment_fraud.csv dataset

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import pandas as pd

from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.ensemble import RandomForestClassifier, GradientBoostingClassifier
from sklearn.linear_model import LogisticRegression
from sklearn.svm import SVC
from sklearn.metrics import accuracy_score, precision_score, recall_score, f1_score, roc_auc_score

data = pd.read_csv('payment_fraud.csv')

X = data.drop('payment_fraud(1)', axis=1)
y = data['payment_fraud(1)']
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

scaler = StandardScaler()
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

[
    RandomForestClassifier(),
    GradientBoostingClassifier(),
    LogisticRegression(),
    SVC()
]

for model in models:
    model.fit(X_train_scaled, y_train)
```

```
y_pred = model.predict(X_test_scaled)

accuracy = accuracy_score(y_test, y_pred)
precision = precision_score(y_test, y_pred)
recall = recall_score(y_test, y_pred)
f1 = f1_score(y_test, y_pred)
roc_auc = roc_auc_score(y_test, y_pred)

print(f"Model: {model.__class__.__name__}")
print(f"Accuracy: {accuracy:.4f}, Precision: {precision:.4f}, Recall: {recall:.4f}, F1-score: {f1:.4f}, ROC-
AUC: {roc_auc:.4f}")
print("=" * 50)
```