Eksplorasi Algoritma SVM

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# Perform SVM on the breast cancer dataset
from sklearn.datasets import load_breast_cancer
from sklearn.model_selection import train_test_split
from sklearn.metrics import classification_report
from sklearn.svm import SVC
import pickle

# Load the data
breast_cancer = load_breast_cancer()

# split data into training and testing sets
X_train, X_test, y_train, y_test =
train_test_split(breast_cancer.data, breast_cancer.target,
test_size=0.2, random_state=42)

# Create an SVC object with default parameters
svc = SVC()

# Fit the model to the training data
svc.fit(X_train, y_train)

# Save the model
with open('svm_model.pkl', 'wb') as f:
    pickle.dump(svc, f)

# Load the model
with open('svm_model.pkl', 'rb') as f:
    svc = pickle.load(f)

# Predict the labels
y_pred = svc.predict(X_test)

# Evaluate the model
report = classification_report(y_test, y_pred)
print(report)
```

```
              precision    recall  f1-score   support

           0       1.00      0.86      0.92        43
           1       0.92      1.00      0.96        71

    accuracy                           0.95       114
   macro avg       0.96      0.93      0.94       114
```

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weighted avg       0.95      0.95      0.95       114
```

Berdasarkan hasil eksplorasi yang telah dilakukan dapat dilihat bahwa hasil evaluasi untuk algoritma SVM memiliki nilai rata-rata sebesar 0.96 untuk metric precision, nilai rata-rata sebesar 0.93 untuk metric recall, dan nilai rata-rata sebesar 0.94 untuk metric f1.