Eksplorasi Algoritma Logistic Regression

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```python
# Perform logistic regression on the data
from sklearn.datasets import load_breast_cancer
from sklearn.model_selection import train_test_split
from sklearn.metrics import classification_report
from sklearn.linear_model import LogisticRegression
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 the model
model = LogisticRegression()

# Fit the model
model.fit(breast_cancer.data, breast_cancer.target)

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

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

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

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

```
              precision    recall  f1-score   support

           0       0.98      0.93      0.95        43
           1       0.96      0.99      0.97        71

    accuracy                           0.96       114
   macro avg       0.97      0.96      0.96       114
```

```
weighted avg        0.97        0.96        0.96        114
```

```
c:\Python310\lib\site-packages\sklearn\linear_model\_logistic.py:458:
ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as
shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:

https://scikit-learn.org/stable/modules/linear_model.html#logistic-
regression
  n_iter_i = _check_optimize_result(
```

Berdasarkan hasil eksplorasi yang telah dilakukan dapat dilihat bahwa hasil evaluasi untuk algoritma Logistic Regression memiliki nilai rata-rata sebesar 0.97 untuk metric precision, nilai rata-rata sebesar 0.96 untuk metric recall, dan nilai rata-rata sebesar 0.96 untuk metric f1.