XGBoost Report

# Model Description

Algorithm: XGBoost

Hyperparameters: colsample\_bytree=0.8, learning\_rate=0.3, max\_depth=4, n\_estimators=50, subsample=0.7

Note: Data was normalized before training and predictions were denormalized for evaluation.

# Performance Metrics

|  |  |  |
| --- | --- | --- |
| Metric | Training | Testing |
| R-squared | 0.9998 | 0.9472 |
| RMSE | 0.0098 | 0.2032 |
| MAE | 0.0062 | 0.0829 |

# Feature Importance

Feature importance was calculated using a permutation-based approach. This method measures how much the model's performance decreases when each feature is randomly shuffled.

|  |  |
| --- | --- |
| Feature | Importance (%) |
| petal width (cm) | 74.54 |
| petal length (cm) | 23.34 |
| sepal width (cm) | 1.19 |
| sepal length (cm) | 0.94 |