Random Forest Report

# Model Description

Algorithm: Random Forest

Hyperparameters: max\_features=2, min\_samples\_leaf=2, n\_estimators=300

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

# Performance Metrics

|  |  |  |
| --- | --- | --- |
| Metric | Training | Testing |
| R-squared | 0.9755 | 0.9668 |
| RMSE | 0.1227 | 0.1612 |
| MAE | 0.0448 | 0.0663 |

# 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 length (cm) | 50.86 |
| petal width (cm) | 47.76 |
| sepal length (cm) | 1.36 |
| sepal width (cm) | 0.02 |