K-Nearest Neighbors Report

# Model Description

Algorithm: K-Nearest Neighbors

Hyperparameters: n\_neighbors=7

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

# Performance Metrics

|  |  |  |
| --- | --- | --- |
| Metric | Training | Testing |
| R-squared | 0.9656 | 0.9490 |
| RMSE | 0.1456 | 0.1998 |
| MAE | 0.0577 | 0.0870 |

# 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) | 47.29 |
| petal length (cm) | 37.07 |
| sepal length (cm) | 9.84 |
| sepal width (cm) | 5.81 |