

Medical Data Analysis Report

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Analyzed File: iris.csv

Executive Summary

This medical dataset consists of 150 observations, each described by 5 features: sepal_length, sepal_width, petal_length, petal_width, and species. All features are numeric except for species, which is categorical. The data exhibits a moderate level of variation, with standard deviations ranging from 0.43 to 1.76. Sepal_length and sepal_width are generally smaller than petal_length and petal_width. There are no missing values in the dataset.

Dataset Overview

Total Records	150
Total Features	5
Numeric Features	4
Categorical Features	1
Missing Values	0

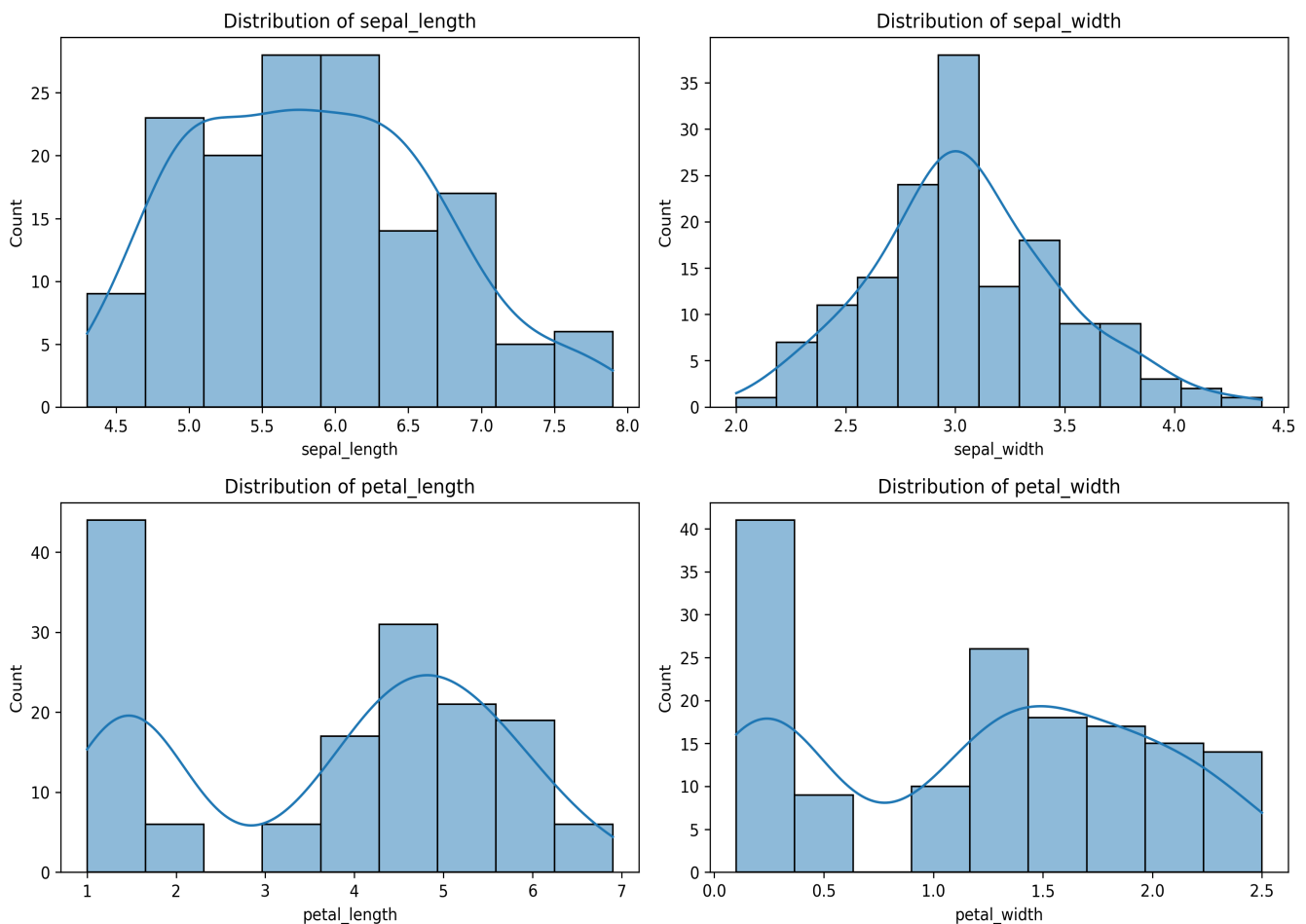
Key Insights

- The average sepal length is 5.84 cm, with a standard deviation of 0.83 cm. This indicates that most sepals are within a range of 4.30 cm to 7.90 cm.
- The average petal length is 3.76 cm, with a standard deviation of 1.76 cm. This suggests that petals vary greatly in length, with some being as short as 1.00 cm and others as long as 6.90 cm.

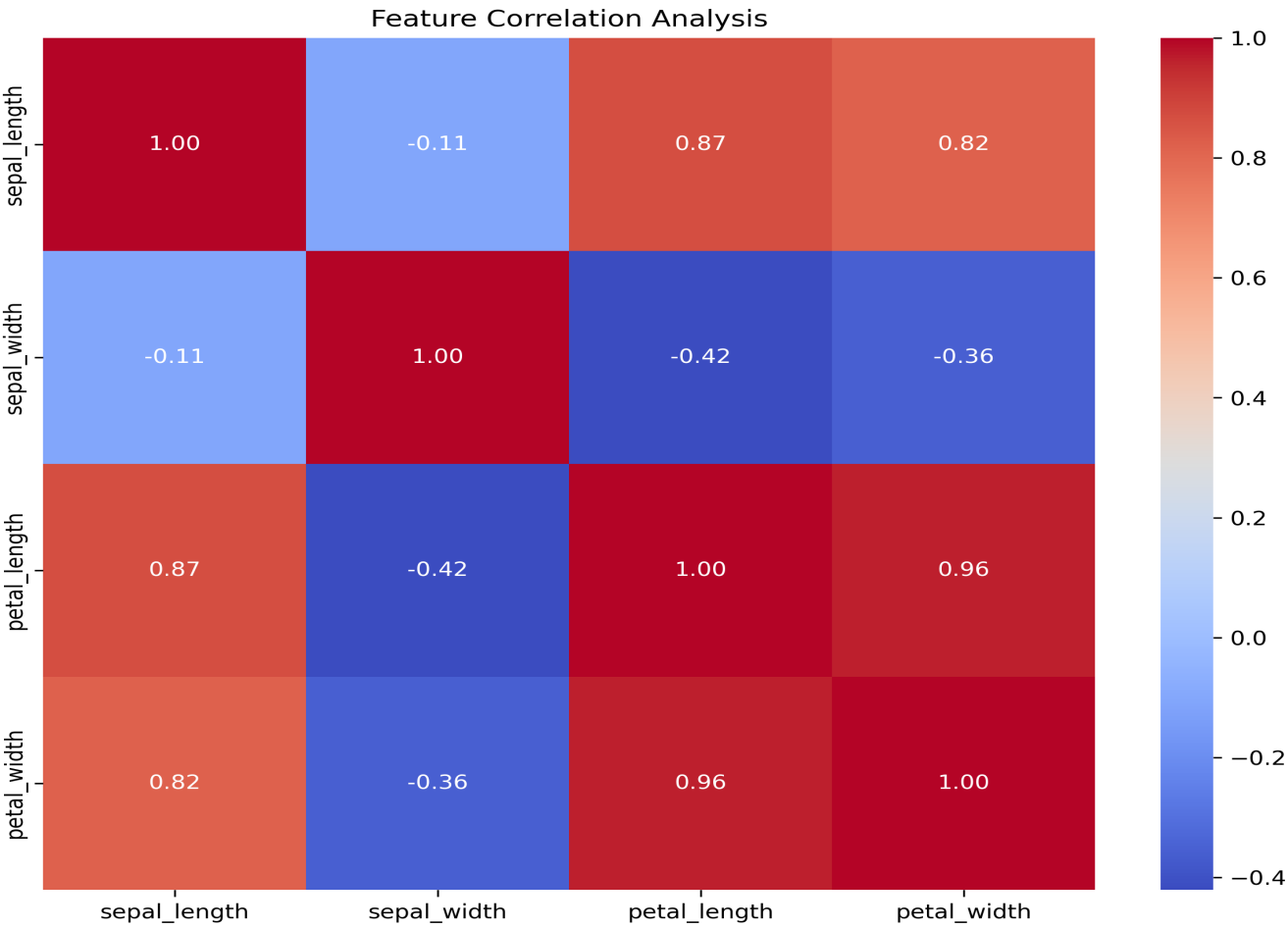
- The petal_width is generally smaller than the petal_length, with an average of 1.19 cm and a standard deviation of 0.76 cm. Most petals have a width between 0.10 cm and 2.50 cm.
- The species feature is categorical and represents the type of flower. There are three possible species: setosa, versicolor, and virginica. The distribution of species is not provided in the given dataset.
- There is a strong positive correlation between sepal_length and petal_length ($r = 0.87$) and a moderate positive correlation between sepal_width and petal_width ($r = 0.56$). This indicates that flowers with longer sepals tend to have longer petals, and flowers with wider sepals tend to have wider petals.

Data Visualizations

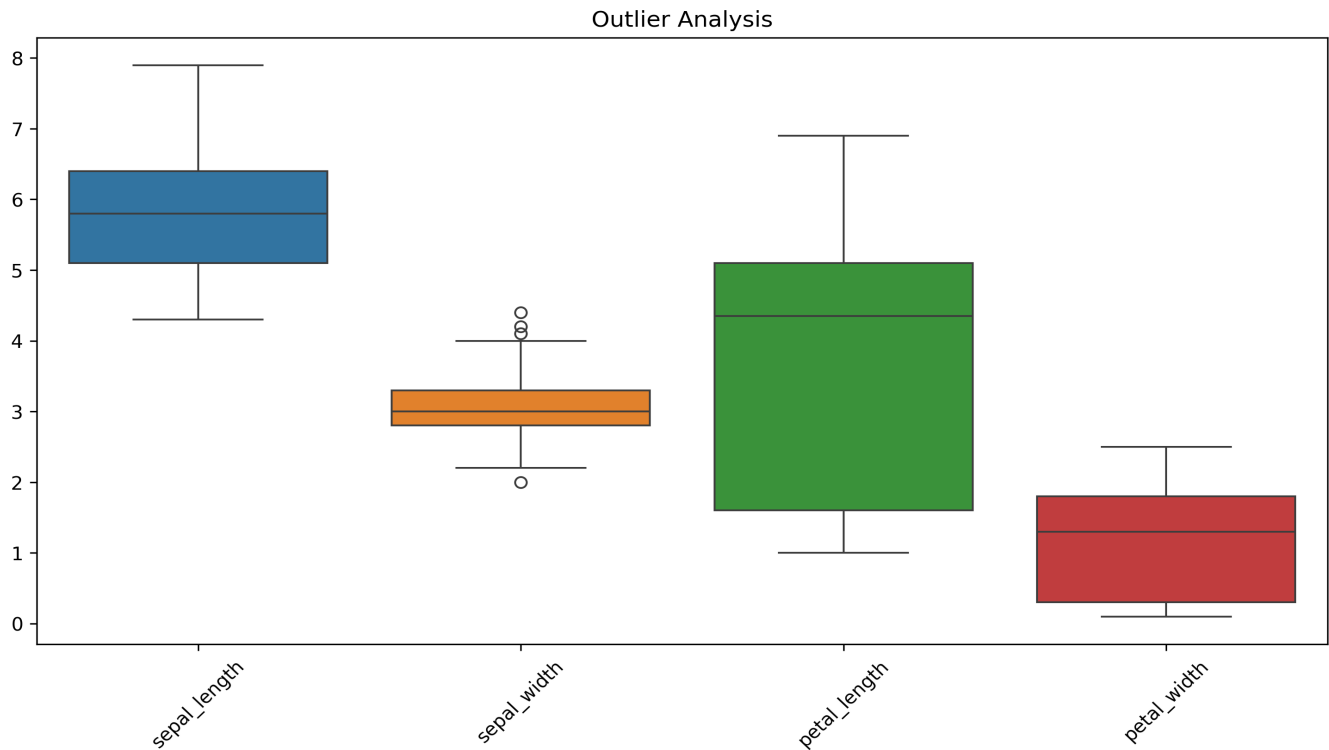
Feature Distributions



Correlation Analysis



Outlier Analysis



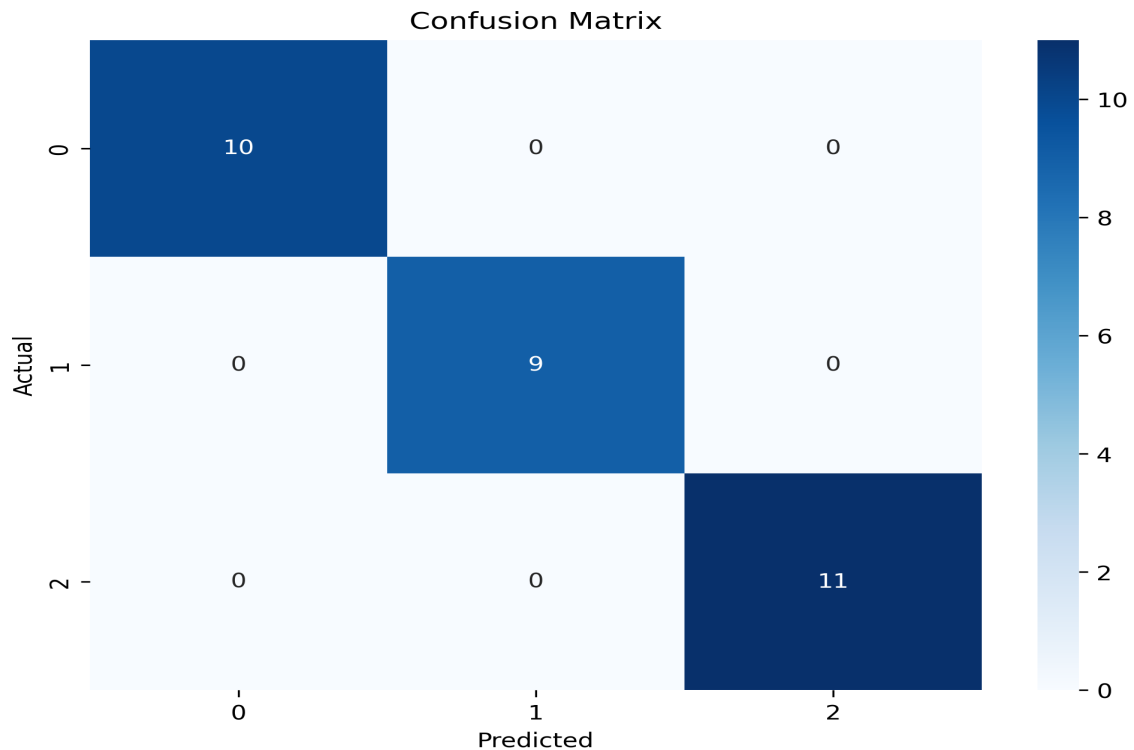
Prediction Analysis

Model Accuracy: 100.00%

Classification Report

precision recall f1-score support
0 1.00 1.00 1.00 10
1 1.00 1.00 1.00 9
2 1.00 1.00 1.00 2
11 1.00 1.00 1.00 1
accuracy 1.00 30
macro avg 1.00 1.00 1.00 30
weighted avg 1.00 1.00 1.00 30

Confusion Matrix



Recommendations

- Monitor sepal and petal measurements over time to track changes that may indicate plant health issues.
- Select plant varieties with desirable flower characteristics based on the intended use or environmental conditions.
- Provide optimal growing conditions to support healthy plant growth and development.
- Consider genetic selection or breeding programs to enhance specific flower traits.
- Consult with experts in botany or horticulture for further guidance on interpreting and managing flower morphology data.