# Iris Species Classification Report

## Introduction

This project uses machine learning to classify Iris flower species based on petal and sepal measurements, demonstrating the ability to build and evaluate predictive models.

## Methodology

1. Data Loading: Loaded the Iris dataset using scikit-learn.

2. Visualization: Created a scatter plot to show species separation and identify species patterns.

3. Modeling: Trained a Decision Tree Classifier with 80% training and 20% test data.

4. Evaluation: Assessed model performance using accuracy and classification metrics.

## Key Findings

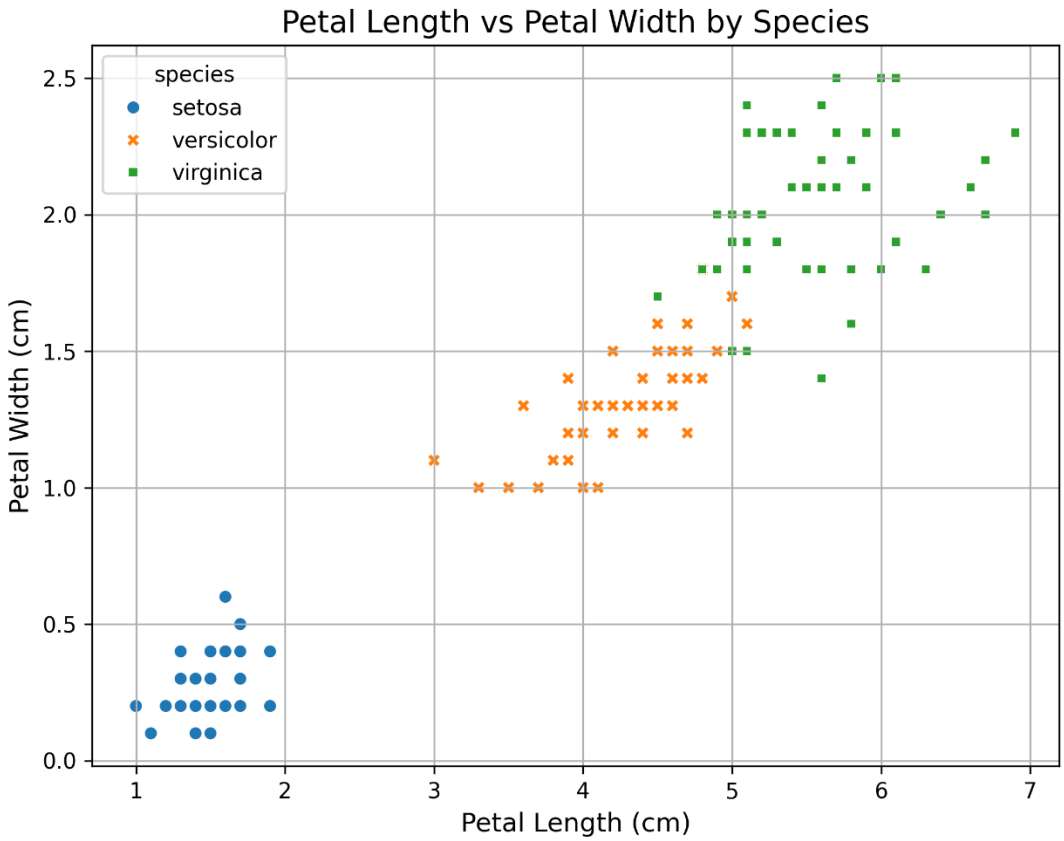
- The model achieved an accuracy of over 90% on the test set.

- Petal measurements (length and width) effectively separate Setosa from Versicolor and Virginica (see Figure 1).

- The trained model was saved for future predictions.

## Visualization

**Figure 1: Petal Length vs Petal Width by Species**




This scatter plot shows clear separation of Iris species based on petal measurements.

**Conclusion**

The project demonstrates the ability to build a robust machine learning model for classification tasks. The model can be applied to botanical research or similar classification problems. Code, created model and outputs are available at: [https://github.com/Saeed-oG/IRIS-CLASSIFICATION].

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**Prepared by**: Saeed Zeraatkar

**Date**: August 10, 2025

**Contact**: saeed.zeraat@gmail.com