IRIS FLOWER CLASSIFICATION

Semester long project

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Introduction

The goal of this task is to create a model that can accurately predict the species of an iris flower based on its sepal length, sepal width, petal length, and petal width. In this poster, we will explore the process of building a machine learning model for iris flower classification and highlight some of the key techniques used.

Dataset

The iris flower dataset is a classic dataset in machine learning that contains measurements for 150 iris flowers from three different species: Setosa, Versicolor, and Virginica. Each flower is described by four features: sepal length, sepal width, petal length, and petal width. The dataset is commonly used as a benchmark for machine learning algorithms.

Machine Learning Approach

To create a model for iris flower classification, we will use a supervised learning approach. Specifically, we will use a classification algorithm called logistic regression. Logistic regression is a simple yet powerful algorithm that is often used for binary classification problems.

Preprocessing

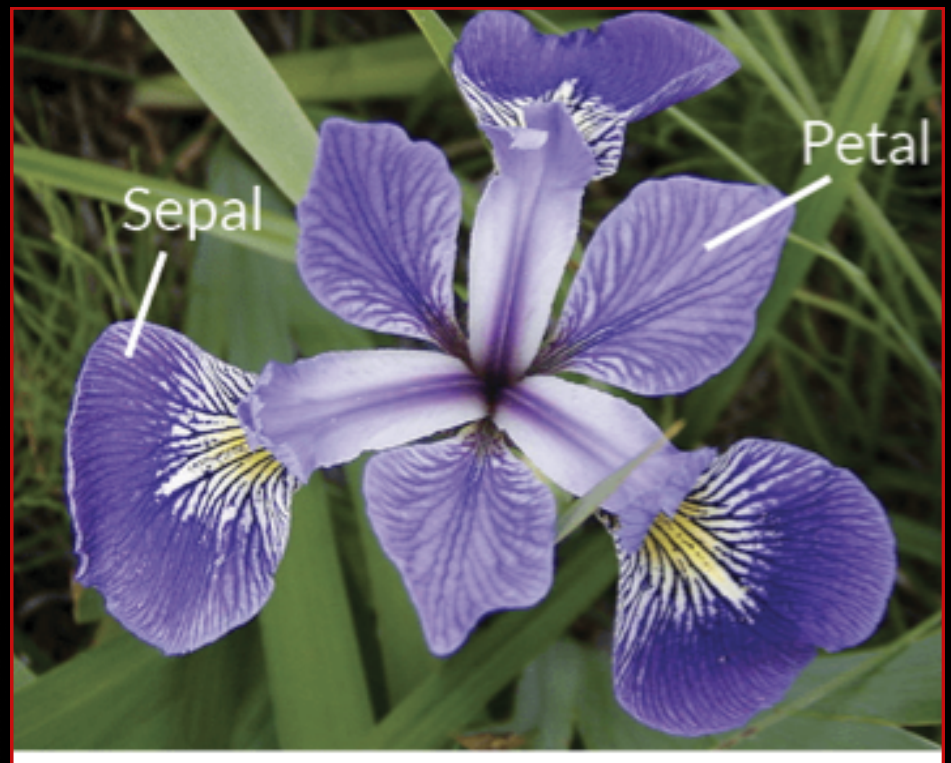
Before we can train our model, we need to preprocess the dataset. This involves splitting the dataset into training and testing sets, scaling the features, and encoding the labels. Scaling the features is important because it ensures that each feature is on a similar scale, which can improve the performance of the model. Encoding the labels is necessary because machine learning algorithms require numerical labels.

Training:

Once the dataset has been preprocessed, we can train the logistic regression model. During training, the model will learn to map the input features to the correct output labels. We will use a technique called gradient descent to optimize the model parameters and minimize the loss function.

Evaluation

After training the model, we need to evaluate its performance on the testing set. We will use metrics such as accuracy, precision, recall, and F1 score to evaluate the model's performance. These metrics will help us determine how well the model is performing and identify areas where it can be improved.



Iris Versicolor

Iris Setosa

Iris Virginica

Conclusion

In this poster, we have explored the process of building a machine learning model for iris flower classification. We have discussed the dataset, machine learning approach, preprocessing, training, and evaluation. By following these steps, we can create a model that accurately predicts the species of iris flowers based on their features. This technique can be applied to other classification problems as well, making it a valuable tool in the field of machine learning.