Machine learning Project – 02

Iris Flower Classification

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**Application type:**

Classification application

the variable to be predicted is categorical (setosa, versicolor, or virginica).The goal is to model class membership probabilities conditioned on the flower features.

Neural Network:

* A scaling layer:

This layer has 4 inputs: sepal length, sepal width, petal length, and petal width

This layer normalize the input vales.All the variables have normal distribution thus we use,

mean and standard deviation scaling method.

* Two perceptron layers:

The first layer has 4 inputs, 3 neurons, and a logistic activation function.

The second layer has 3 inputs, 3 neurons, and a logistic activation function.

* A probabilistic layer:

This layer allows us to interpret the outputs as probabilities. In this regard, all outputs are between 0 and 1, and their sum is 1. The SoftMax probabilistic method is used here.

**Training strategy:**

**Final output:**

new\_sample = [[5.1, 3.5, 1.4, 0.2]]

prediction = knn.predict(new\_sample)

species = iris.target\_names[prediction][0]

print(f'The predicted species is: {species}')

>> Accuracy: 1.00 The predicted species is: setosa