

Iris Classification API

This project is a FastAPI-based web service that predicts the species of an Iris flower using a trained machine learning model.

Project Structure

iris_classification_api/ └── main.py

FastAPI app └── model.pkl

Trained ML model (RandomForestClassifier) └──
load_iris_data.py

Data loading and preprocessing └── README.md

Project documentation └── screenshots/

Saved screenshots for documentation

How to Run the API

1 Create and activate Anaconda environment

```
conda create -n iris_api_env python=3.11
conda activate iris_api_env
```

2 Install dependencies

```
pip install fastapi uvicorn joblib numpy scikit-learn
```

3 Run the server

```
uvicorn main:app --reload
```

4 Test the API

Open your browser and go to:

<http://127.0.0.1:8000/docs>

Use Swagger UI to send a POST request to /predict with:

```
{
  "sepal_length": 5.1,
```

```
"sepal_width": 3.5,  
"petal_length": 1.4,  
"petal_width": 0.2  
}
```

Expected response:

```
{  
  "predicted_class": 0,  
  "species": "Setosa"  
}
```

Model Details

- Algorithm: RandomForestClassifier
- Training: Done in Google Colab using the Iris dataset
- Export: Saved as model.pkl using joblib

Screenshots

- ◇ Project Folder Structure

Project Folder Structure

- ◇ Swagger UI Response 1

Swagger UI Response 1

- ◇ Swagger UI Response 2

Swagger UI Response 2

- ◇ Terminal Running Server

Terminal Running Server

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