

# Machine Learning Deployment using Streamlit

A 3D rendering of a warehouse conveyor belt system. Several cardboard boxes are positioned on the belt, which is flanked by metal guides. Red laser lines form a grid pattern on the floor and around the boxes, suggesting a machine learning or computer vision application for object detection or tracking. The scene is brightly lit, with a strong light source from above creating a bright glow in the center of the conveyor.

Anna Baita

# Tahapan

- 1.Siapkan environmentnya:
  - Buat Folder/ directory proyek: missal: iris\_app
  - Install library yang dibutuhkan:

```
pip install streamlit scikit-learn joblib numpy
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS D:\ANNA\2024-2025\GENAP 2024-2025\PDM-ST167\iris_app> pip install streamlit scikit-learn joblib numpy
>>
Collecting streamlit
  Downloading streamlit-1.45.1-py3-none-any.whl (9.9 MB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 9.9/9.9 MB 30.0 MB/s eta 0:00:00
Requirement already satisfied: scikit-learn in c:\users\amikom\anaconda3\lib\site-packages (1.2.1)
Requirement already satisfied: joblib in c:\users\amikom\anaconda3\lib\site-packages (1.1.1)
Requirement already satisfied: numpy in c:\users\amikom\anaconda3\lib\site-packages (1.23.5)
Collecting pyarrow>=7.0
  Downloading pyarrow-20.0.0-cp310-cp310-win_amd64.whl (25.8 MB)
```

- 2. Training dan Simpan Model
  - File Note book: [model-iris.ipynb](#)
  - Pakai model yang kemaren → [model\\_numpy.pkl](#)
- 3. Buat Aplikasi streamlit
  - Buat sebuah file dengan nama app.py
  - Struktur folder:

```
iris_app/  
  |— model/  
      |— model_numpy.py  
  |— model-iris.ipynb  
  |— app.py  
  |— requirements.txt
```

# Isi requirements.txt

[Streamlit-Deployment](#) / [iris\\_app](#) / requirements.txt 



annaamikom Update requirements.txt

Code

Blame

5 lines (4 loc) · 37 Bytes

```
1  streamlit
2  scikit-learn
3  numpy
4  joblib
```

Semua instalasi yang dibutuhkan

```
app.py
1  # app.py
2  import streamlit as st
3  import numpy as np
4  import joblib
5
6  # Load model
7  model = joblib.load("model/model_numpy.pkl")
8  class_names = ["Setosa", "Versicolor", "Virginica"]
9
10 # Halaman utama
11 st.set_page_config(page_title=" Prediksi Bunga Iris", layout="wide")
12 st.markdown("<h1 style='text-align: center; color: #6C63FF;'> Prediksi Bunga Iris dengan Machine Learning</h1>", unsafe_allow_html=True)
13 st.write("---")
14
15 # Sidebar
16 st.sidebar.header("Input Fitur")
17 sepal_length = st.sidebar.slider("Panjang Sepal (cm)", 0.0, 10.0, 5.1)
18 sepal_width = st.sidebar.slider("Lebar Sepal (cm)", 0.0, 10.0, 3.5)
19 petal_length = st.sidebar.slider("Panjang Petal (cm)", 0.0, 10.0, 1.4)
20 petal_width = st.sidebar.slider("Lebar Petal (cm)", 0.0, 10.0, 0.2)
21
22 # Layout 2 kolom
23 col1, col2 = st.columns(2)
24
25 with col1:
26     st.image("https://upload.wikimedia.org/wikipedia/commons/4/41/Iris_versicolor_3.jpg", caption="Contoh Bunga Iris", use_container_width=True)
27
28 with col2:
29     st.subheader("Hasil Prediksi")
30     input_data = np.array([[sepal_length, sepal_width, petal_length, petal_width]])
31     prediction = model.predict(input_data)[0]
32     st.success(f"Hasil prediksi model: **{class_names[prediction]** ")
33
34     st.markdown("---")
35     st.markdown("***Fitur yang dimasukkan:**")
36     st.json({
37         "Sepal Length": sepal_length,
38         "Sepal Width": sepal_width,
39         "Petal Length": petal_length,
40         "Petal Width": petal_width
41     })
42
43 st.caption("Aplikasi ML dengan Streamlit & Scikit-learn ")
44
```

- Referensi pengaturan layout di streamlit:  
<https://docs.streamlit.io/develop/api-reference>
- 4. Jalankan Aplikasi secara local:  
`streamlit run app.py`



Input Fitur

Panjang Sepal (cm)  
2.92  
0.00 10.00

Lebar Sepal (cm)  
3.78  
0.00 10.00

Panjang Petal (cm)  
4.10  
0.00 10.00

Lebar Petal (cm)  
0.20  
0.00 10.00

# Prediksi Bunga Iris dengan Machine Learning



Contoh Bunga Iris

## Hasil Prediksi

Hasil prediksi model: **Setosa**

Fitur yang dimasukkan:

```
{
  "Sepal Length" : 2.92
  "Sepal Width" : 3.78
  "Petal Length" : 4.1
  "Petal Width" : 0.2
}
```

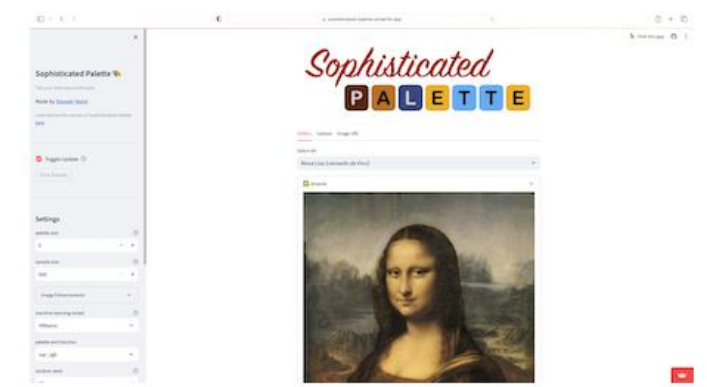
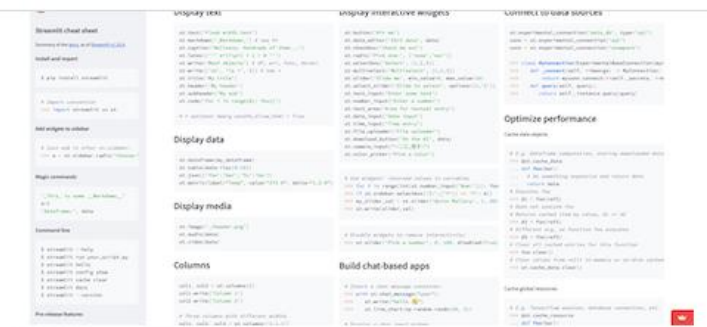
- 5. Deploy ke Cloud (Akses IP Publik Langsung)
  - Push project ke GitHub:
    - <https://github.com/annaamikom/Streamlit-Deployment>
  - Daftar dan login ke <https://streamlit.io>




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Streamlit apps and learn from each other!


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# Sign in to streamlit.io

 anna@amikom.ac.id ▼

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## Your apps

Create your first app now

## Get started from a template

View all templates →

### GDP over time



Country Code: BRA, DEU, FRA, GBR, JPN, MEX

### Chatbot

This is a simple chatbot that uses OpenAI's GPT-3.5 model to generate responses. To use this app, you need to provide an OpenAI API key, which you can get [here](#). You can also learn how to build this app step by step by [following our tutorial](#).

OpenAI API Key

What is up?

### Existing tickets

Number of tickets: 100

You can edit the tickets by double clicking on a cell. Note how the plots below update automatically! You can also sort the table by clicking on the column headers.

ID	Issue	Status	Priority	Date Submitted
TICKET-1100	Website performance degradation	Closed	Low	2023-07-27
TICKET-1099	Collaboration tool not sending notifications	In Progress	Medium	2023-07-04
TICKET-1098	System updates causing compatibility issues	Closed	Medium	2023-07-12
TICKET-1097	Database connection failure	Closed	High	2023-06-20
TICKET-1096	Security vulnerability identified	Open	Medium	2023-08-10
TICKET-1095	Website performance degradation	Closed	Medium	2023-10-11

### My new app

Let's start building! For help and inspiration, head over to [docs.streamlit.io](#).



## Warning







You must be connected to GitHub to deploy an app.

Cancel

Connect to GitHub




## Authorize Streamlit

-  **Streamlit by Streamlit**  
wants to access your **annaamikom** account
-  **Repository webhooks and services**  
**Admin** access
-  **Codespace**  
Manage codespaces
-  **Repositories**  
Public repositories
-  **Organizations and teams**  
**Read-only** access
-  **Personal user data**  
Email addresses (read-only)


Cancel

Authorize streamlit

Authorizing will redirect to  
<https://share.streamlit.io>

 Not owned or  
operated by GitHub

 Created 6 years ago

 More than 1K  
GitHub users

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## What would you like to do?



### Deploy a public app from GitHub

My code is ready on a GitHub repo, and it is totally awesome.

[Deploy now](#)



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### Deploy a private app in Snowflake

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# Deploy an app

Repository ?

[Paste GitHub URL](#)

annaamikom/Streamlit-Deployment

Branch

main

Main file path

iris\_app/app.py

App URL (optional)

app-deployment-2ss2qzfhmuxlb3dsqogxhn

.streamlit.app

Domain is available

[Advanced settings](#)

Deploy

- ubah path-nya jadi relatif penuh( di repositori githubnya)

```
Code Blame 61 lines (49 loc) · 1.88 KB
1  # app.py
2  import streamlit as st
3  import numpy as np
4  import joblib
5  import os
6  # Load model
7
8  MODEL_PATH = os.path.join(os.path.dirname(__file__), "model", "model_numpy.pkl")
9  model = joblib.load(MODEL_PATH)
10 #model = joblib.load("model/model_numpy.pkl")
11 class_names = ["Setosa", "Versicolor", "Virginica"]
12
13 # Halaman utama
14 st.set_page_config(page_title=" Prediksi Bunga Iris", layout="wide")
15 st.markdown("<h1 style='text-align: center; color: #6C63FF;'> Prediksi Bunga Iris dengan Machine Learning</h1>", unsafe_allow_html=True)
16 st.write("---")
17
18 # Sidebar
```

- Simpan
- **Rebuild** atau **Rerun** pada streamlit
- <https://app-deployment-2ss2qzfhmuxlb3dsqogxhn.streamlit.app/>

### Input Fitur

Panjang Sepal (cm)

5.1

Lebar Sepal (cm)

3.5

Panjang Petal (cm)

1.4

Lebar Petal (cm)

0.2

## Prediksi Bunga Iris dengan Machine Learning



Contoh Bunga Iris

Aplikasi ML dengan Streamlit & Scikit-learn

### Hasil Prediksi

Hasil prediksi model: **Setosa**

Fitur yang dimasukkan:

```
{
  "Sepal Length" : "5.1"
  "Sepal Width" : "3.5"
  "Petal Length" : "1.4"
  "Petal Width" : "0.2"
}
```