

ML model deployment using Docker container



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Deploying a machine learning model on Docker is a common practice to ensure that your model runs consistently across different environments. Docker containers package your application and its dependencies into a single unit that can be easily deployed and run on various platforms. Here's a step-by-step guide on how to deploy a machine learning model on Docker:

1. Set Up Your Environment:

Before you begin, make sure you have the following installed on your machine:

- *Docker: You can download and install Docker from the official website (<https://www.docker.com/get-started>).*

2. Create a Directory for Your Project:

Create a directory for your project and navigate to it using your terminal or command prompt.

```
mkdir my_ml_model  
cd my_ml_model
```

3. Prepare Your Model Code:

Put your machine learning model code and any necessary files (trained model weights, data preprocessing scripts, etc.) into this directory. Ensure that all dependencies are properly listed in a requirements.txt or similar file.

4. Create a Dockerfile:

Create a file called Dockerfile (without any file extension) in your project directory. This file contains instructions on how to build your Docker image. Here's a simple example of a Dockerfile for a Python-based ML model:

```
# Use an official Python runtime as a parent image  
FROM python:3.8-slim  
  
# Set the working directory to /app  
WORKDIR /app  
  
# Copy the current directory contents into the container at /app  
COPY . /app  
  
# Install any needed packages specified in requirements.txt  
RUN pip install --trusted-host pypi.python.org -r requirements.txt  
  
# Make port 80 available to the world outside this container  
EXPOSE 80  
  
# Define environment variable  
ENV NAME World
```

```
# Run app.py when the container launches
CMD ["python", "your_model_script.py"]
```

Replace `your_model_script.py` with the actual name of your model deployment script.

5. Build the Docker Image:

Open your terminal or command prompt, navigate to the project directory, and run the following command to build your Docker image:

```
docker build -t my-ml-model .
```

This command tells Docker to build an image named `my-ml-model` using the current directory (denoted by `.`) as the build context.

6. Run a Docker Container:

Once the image is built successfully, you can run a Docker container based on this image:

```
docker run -p 4000:80 my-ml-model
```

This command maps port 4000 on your host machine to port 80 in the Docker container. Adjust the port numbers as needed.

7. Access Your Model API:

Your model should now be accessible via HTTP at `http://localhost:4000` (or the port you specified in the `docker run` command). You can send requests to this URL to make predictions or perform inference using your model.

Docker ML AI Deployment Python



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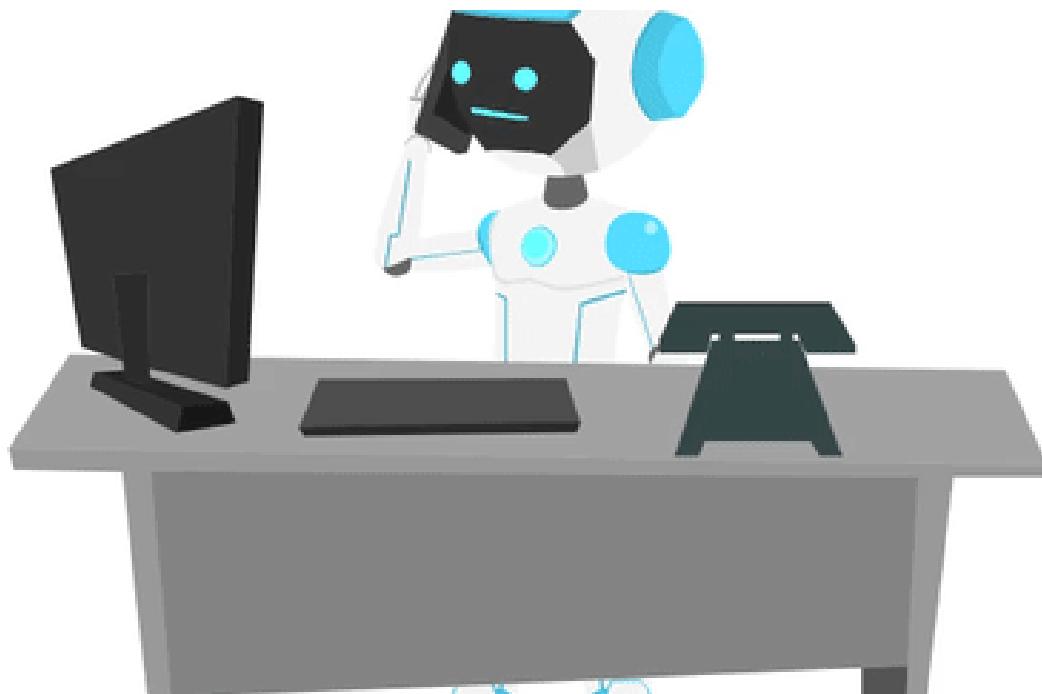
The purpose of this notebook is to provide a comprehensive, step-by-step tutorial for fine-tuning any LLM (Large Language Model).

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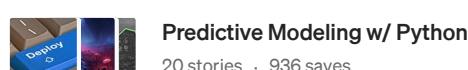
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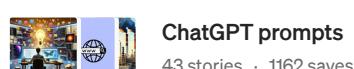
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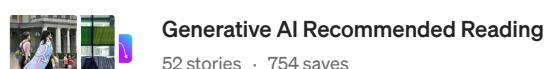
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```

# In[files] > do
    print("What file are in the current directory?")
    print("File names")
    for file in range(1, len(files)+1):
        print(file)
    file = input("Type the ID of file you want to scrape: ")
    if len(file) == len(str(file)):
        print("File does not exist.")
    else:
        file = int(input("Type which line you want to scrape the data: "))
        line = int(input("From which line you want to scrape the data: "))
        print("\n" + "-" * (27 + len(str(line)) + len(files[int(file)])))
        print(" " * (27 + len(str(line)) + len(files[int(file)])) + " " * len(files[int(file)]))
        print(" " * (27 + len(str(line)) + len(files[int(file)])) + " " * len(files[int(file)]))
        print(" " * (27 + len(str(line)) + len(files[int(file)])) + " " * len(files[int(file)]))

    print("Starting Chrome...")
    path = os.getcwd()
    full_path = path+str('chromedriver.exe')
    options = Options()
    # options.headless = True
    options.add_argument('--log-level=2')
    options.add_argument('--disable-gpu')
    driver = webdriver.Chrome(executable_path=full_path, options=options)
    book = openpyxl.load_workbook(files[int(file)])
    sheet = book.active
    row_count = sheet.max_row
    row_count += 1
    row_count -= 1
    while line < row_count:
        row_count += 1

```

```

root@de8ed92f852: ~
File "/tmp/runner-1592884880.09cf6782", line 52, in __init__
    raise exc_info[1]
AttributeError: 'SQLAlchemy' object has no attribute 'create_all'
> db.create_all()
> db.session.add(bff)
> db.session.commit()
> bff
back (most recent call last):
File "<stdin>", line 1, in <module>
NameError: name 'bff' is not defined
> db.create_all()
> db.session.add(bff)
> db.session.commit()
> bff
back (most recent call last):
File "<stdin>", line 1, in <module>
NameError: name 'bff' is not defined
> db.create_all()
> db.session.add(bff)
> db.session.commit()
> bff
root@de8ed92f852: ~

```

Charu Makhijani

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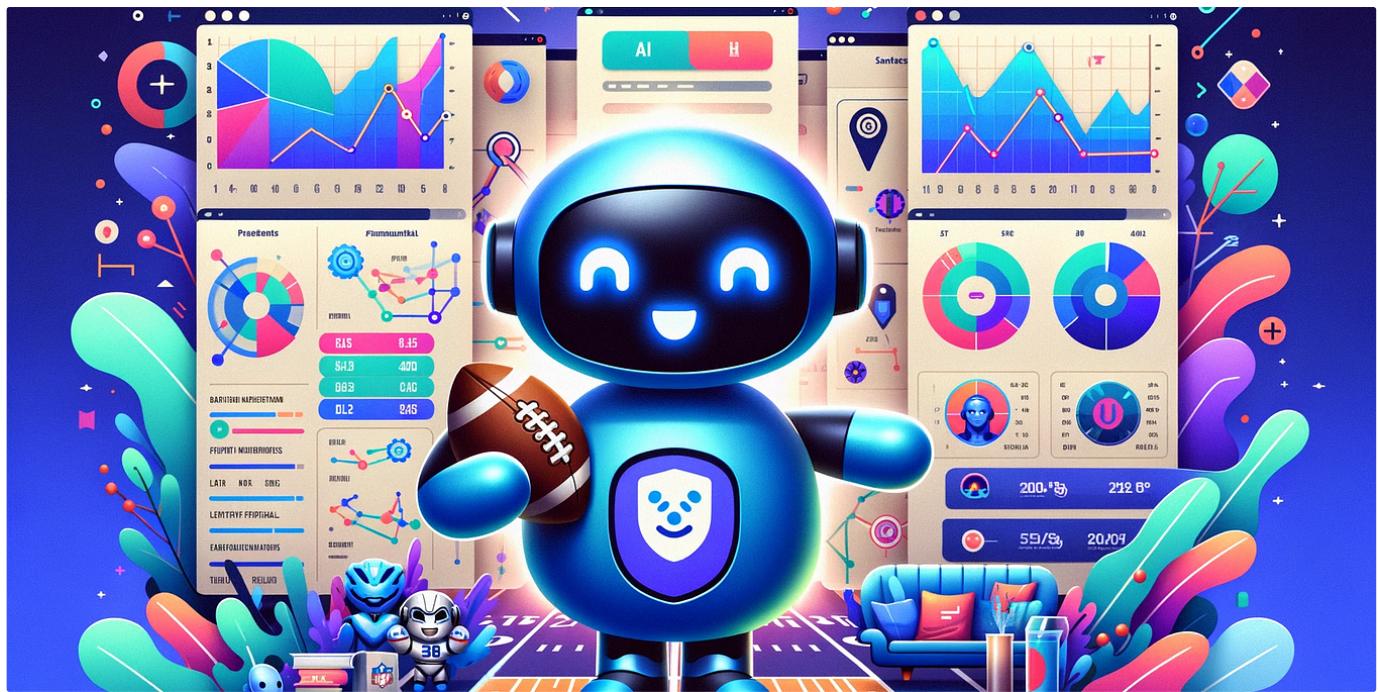
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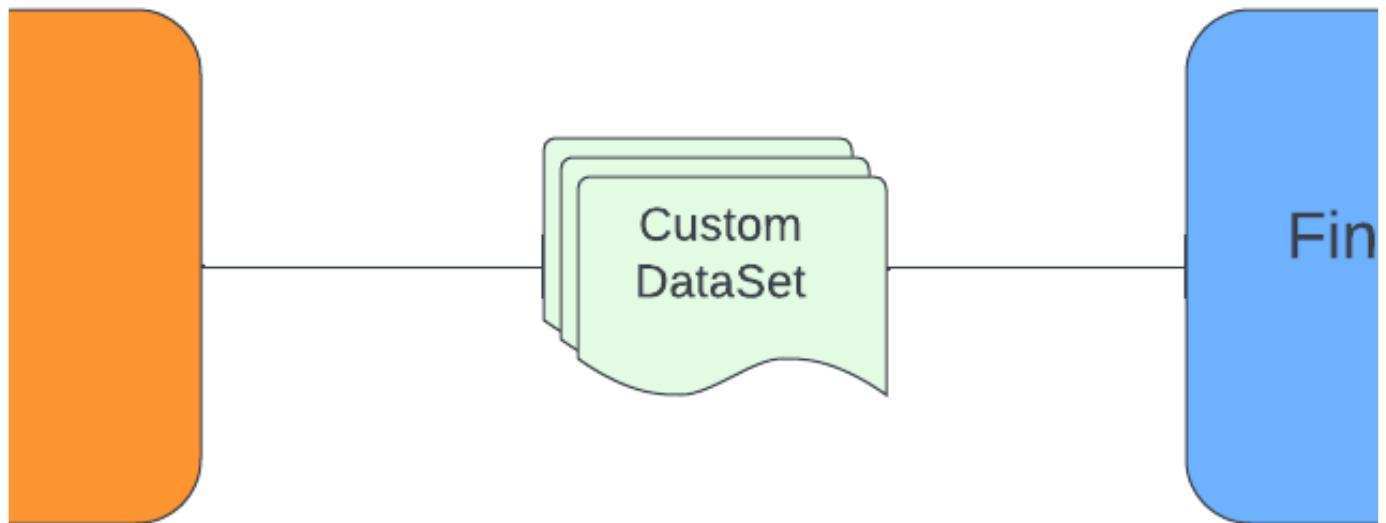
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