Using **Docker Desktop** for your Python machine learning (ML) project will give you:

* A **clean, isolated environment**
* Easy sharing of your setup across team members
* Portable deployment options (e.g., to cloud or servers)

Here’s a **step-by-step guide** to install and start using Docker Desktop on your **Mac**.

## **✅ Step-by-Step: Install Docker Desktop on macOS**

### **🔹 Step 1: Check System Requirements**

* ✅ macOS 11 (Big Sur) or later
* ✅ Apple Silicon (M1/M2/M3) or Intel Mac
* ✅ At least 4 GB RAM

If unsure, click → **About This Mac**.

### **🔹 Step 2: Download Docker Desktop**

1. Visit the official download page:  
    🔗 https://www.docker.com/products/docker-desktop
2. Click **Download for Mac (Apple chip)** or **Mac (Intel chip)** — depending on your Mac type

This will download a .dmg file.

### **🔹 Step 3: Install Docker Desktop**

1. Double-click the .dmg file
2. In the window that opens, **drag Docker icon to Applications**
3. Open **Launchpad** or **Applications** → Start **Docker Desktop**
4. macOS will ask for permissions. Accept and enter your Mac password if prompted

🟢 You’ll see the **whale icon** in the menu bar when Docker is running.

### **🔹 Step 4: Verify Docker Is Working**

Open your Terminal and type:

docker --version

It should output something like:

Docker version 24.0.5, build xxxxxxxx

Then check Docker status:

docker info

## **🐍 Step-by-Step: Use Docker for Your Python ML Project**

### **🔹 1. Create a Dockerfile in your project**

Example Dockerfile:

# Use official Python base image

FROM python:3.9

# Set working directory

WORKDIR /app

# Copy files

COPY . .

# Install dependencies

RUN pip install --upgrade pip

RUN pip install -r requirements.txt

# Default command

CMD ["python", "your\_script.py"]

Replace your\_script.py with your main ML script name

### **🔹 2. Build and Run the Container**

In Terminal, from your project folder:

docker build -t ml-app .

Then run it:

docker run --rm ml-app

## **🔄 Bonus: Use docker-compose for More Flexibility**

Let me know if you want to set up docker-compose.yml for running services like:

* Jupyter notebook
* MLflow
* PostgreSQL or MongoDB for data

## **✅ Summary**

| **Task** | **Command** |
| --- | --- |
| Check Docker version | docker --version |
| Build container | docker build -t your-tag . |
| Run container | docker run your-tag |