

```
pip install mediapipe==0.10.14 opencv-python numpy==1.24.4
```



```
Collecting mediapipe==0.10.14
  Downloading mediapipe-0.10.14-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (35.7 MB)
Requirement already satisfied: opencv-python in /usr/local/lib/python3.11/dist-packages (4.8.1)
Collecting numpy==1.24.4
  Downloading numpy-1.24.4-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.3 MB)
Requirement already satisfied: absl-py in /usr/local/lib/python3.11/dist-packages (0.15.1)
Requirement already satisfied: attrs>=19.1.0 in /usr/local/lib/python3.11/dist-packages (23.1.0)
Requirement already satisfied: flatbuffers>=2.0 in /usr/local/lib/python3.11/dist-packages (23.2.1)
Requirement already satisfied: jax in /usr/local/lib/python3.11/dist-packages (0.4.23)
Requirement already satisfied: jaxlib in /usr/local/lib/python3.11/dist-packages (0.1.87)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.11/dist-packages (3.7.1)
Requirement already satisfied: opencv-contrib-python in /usr/local/lib/python3.11/dist-packages (4.8.1)
Requirement already satisfied: protobuf<5,>=4.25.3 in /usr/local/lib/python3.11/dist-packages (4.25.3)
Requirement already satisfied: sounddevice>=0.4.4 in /usr/local/lib/python3.11/dist-packages (0.4.7)
Requirement already satisfied: CFFI>=1.0 in /usr/local/lib/python3.11/dist-packages (1.16.0)
Requirement already satisfied: ml_dtypes>=0.4.0 in /usr/local/lib/python3.11/dist-packages (0.3.1)
INFO: pip is looking at multiple versions of jax to determine which version is compatible with the requirements. You found
Collecting jax (from mediapipe==0.10.14)
  Downloading jax-0.6.2-py3-none-any.whl.metadata (13 kB)
Collecting jaxlib (from mediapipe==0.10.14)
  Downloading jaxlib-0.6.2-cp311-cp311-manylinux2014_x86_64.whl.metadata (1.3 kB)
Collecting ml_dtypes>=0.5.0 (from jax->mediapipe==0.10.14)
  Downloading ml_dtypes-0.5.1-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.3 MB)
Collecting jax (from mediapipe==0.10.14)
  Downloading jax-0.6.1-py3-none-any.whl.metadata (13 kB)
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  Downloading jax-0.5.3-py3-none-any.whl.metadata (22 kB)
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Collecting jax (from mediapipe==0.10.14)
  Downloading jax-0.4.38-py3-none-any.whl.metadata (22 kB)
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Requirement already satisfied: opt_einsum in /usr/local/lib/python3.11/dist-packages (3.3.0)
Requirement already satisfied: scipy>=1.10 in /usr/local/lib/python3.11/dist-packages (1.11.1)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.11/dist-packages (1.1.0)
Requirement already satisfied: cycycler>=0.10 in /usr/local/lib/python3.11/dist-packages (0.10.0)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.11/dist-packages (4.22.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.11/dist-packages (1.4.5)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/dist-packages (23.1)
Requirement already satisfied: pillow>=8 in /usr/local/lib/python3.11/dist-packages (10.1.0)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.11/dist-packages (3.1.1)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.11/dist-packages (2.8.2)
Requirement already satisfied: pycparser in /usr/local/lib/python3.11/dist-packages (2.21)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (1.16.0)
Downloading mediapipe-0.10.14-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (35.7/35.7 MB) 36.2 MB/s eta 0s
Downloading numpy-1.24.4-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.3/17.3 MB) 61.1 MB/s eta 0s
```

Downloading jax-0.4.38-py3-none-any.whl (2.2 MB)

2.2/2.2 MB 58.9 MB/s eta 0

Downloading jaxlib-0.4.38-cp311-cp311-manylinux2014_x86_64.whl (101.8 MB)

101.8/101.8 MB 9.0 MB/s eta:

Installing collected packages: numpy, jaxlib, jax, mediapipe

Attempting uninstall: numpy

Found existing installation: numpy 1.26.4

Uninstalling numpy-1.26.4:

Successfully uninstalled numpy-1.26.4

Attempting uninstall: jaxlib

Found existing installation: jaxlib 0.5.1

Uninstalling jaxlib-0.5.1:

Successfully uninstalled jaxlib-0.5.1

Attempting uninstall: jax

Found existing installation: jax 0.5.2

Uninstalling jax-0.5.2:

Successfully uninstalled jax-0.5.2

Attempting uninstall: mediapipe

Found existing installation: mediapipe 0.10.21

Uninstalling mediapipe-0.10.21:

Successfully uninstalled mediapipe-0.10.21

ERROR: pip's dependency resolver does not currently take into account all the
ydf 0.12.0 requires protobuf<6.0.0,>=5.29.1, but you have protobuf 4.25.8 which
thinc 8.3.6 requires numpy<3.0.0,>=2.0.0, but you have numpy 1.24.4 which is i
pymc 5.23.0 requires numpy>=1.25.0, but you have numpy 1.24.4 which is incompat
tensorflow 2.18.0 requires numpy<2.1.0,>=1.26.0, but you have numpy 1.24.4 whi
flax 0.10.6 requires jax>=0.5.1, but you have jax 0.4.38 which is incompatible
blosc2 3.4.0 requires numpy>=1.26, but you have numpy 1.24.4 which is incompat
xarray-einstats 0.9.0 requires numpy>=1.25, but you have numpy 1.24.4 which is
orbax-checkpoint 0.11.15 requires jax>=0.5.0, but you have jax 0.4.38 which is
treescope 0.1.9 requires numpy>=1.25.2, but you have numpy 1.24.4 which is inc
Successfully installed jax-0.4.38 jaxlib-0.4.38 mediapipe-0.10.14 numpy-1.24.4

```
import cv2
```

```
import mediapipe as mp
```

```
import matplotlib.pyplot as plt
```

```
from IPython.display import display, clear_output
```

```
mp_face_mesh = mp.solutions.face_mesh
```

```
face_mesh = mp_face_mesh.FaceMesh(
```

```
    static_image_mode=False,
```

```
    max_num_faces=1,
```

```
    refine_landmarks=True,
```

```
    min_detection_confidence=0.5,
```

```
    min_tracking_confidence=0.5
```

```
)
```

```
mp_drawing = mp.solutions.drawing_utils
```

```
drawing_spec = mp_drawing.DrawingSpec(thickness=1, circle_radius=1)
```