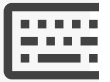


```
# Clone the repo:
!git clone https://github.com/wang-zidu/3DDFA-V3
!cd 3DDFA-V3
```



```
⇒ Cloning into '3DDFA-V3'...
remote: Enumerating objects: 133, done.
remote: Counting objects: 100% (40/40), done.
remote: Compressing objects: 100% (18/18), done.
remote: Total 133 (delta 30), reused 24 (delta 22), pack-reused 93 (delta 0)
Receiving objects: 100% (133/133), 10.33 MiB | 34.55 MiB/s, done.
Resolving deltas: 100% (44/44), done.
```

```
!wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
!bash miniconda.sh -b -p /usr/local/miniconda
!rm miniconda.sh
!export PATH="/usr/local/miniconda/bin:$PATH"
!conda init bash
```



```
⇒ --2025-03-16 16:16:27-- https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
Resolving repo.anaconda.com (repo.anaconda.com)... 104.16.191.158, 104.16.191.158
Connecting to repo.anaconda.com (repo.anaconda.com)|104.16.191.158|:443...
HTTP request sent, awaiting response... 200 OK
Length: 154615621 (147M) [application/octet-stream]
Saving to: 'miniconda.sh'
```

```
miniconda.sh      100%[=====>] 147.45M  105MB/s
```

```
2025-03-16 16:16:29 (105 MB/s) - 'miniconda.sh' saved [154615621/154615621]
```

```
PREFIX=/usr/local/miniconda
Unpacking payload ...
```

```
Installing base environment...
```

```
Preparing transaction: ...working... done
Executing transaction: ...working... done
installation finished.
```

WARNING:

```
    You currently have a PYTHONPATH environment variable set. This may cause
    unexpected behavior when running the Python interpreter in Miniconda3.
    For best results, please verify that your PYTHONPATH only points to
    directories of packages that are compatible with the Python interpreter
    in Miniconda3: /usr/local/miniconda/bin/python
/bin/bash: line 1: conda: command not found
```

```
import os
os.environ["PATH"] = "/usr/local/miniconda/bin:" + os.environ["PATH"]
```

```
!conda --version
```

```
🔗 conda 25.1.1
```

```
!conda create -n TDDFAV3 python=3.8 -y
```

```
🔗 Channels:
- defaults
Platform: linux-64
Collecting package metadata (repodata.json): done
Solving environment: done
```

```
## Package Plan ##
```

```
environment location: /usr/local/miniconda/envs/TDDFAV3
```

```
added / updated specs:
- python=3.8
```

The following packages will be downloaded:

package	build	
ca-certificates-2025.2.25	h06a4308_0	129 KB
openssl-3.0.16	h5eee18b_0	5.2 MB
pip-24.2	py38h06a4308_0	2.2 MB
python-3.8.20	he870216_0	23.8 MB
setuptools-75.1.0	py38h06a4308_0	1.7 MB
wheel-0.44.0	py38h06a4308_0	108 KB
xz-5.6.4	h5eee18b_1	567 KB
Total:		33.7 MB

The following NEW packages will be INSTALLED:

_libgcc_mutex	pkgs/main/linux-64::_libgcc_mutex-0.1-main
_openmp_mutex	pkgs/main/linux-64::_openmp_mutex-5.1-1_gnu
ca-certificates	pkgs/main/linux-64::ca-certificates-2025.2.25-h06a4308_0
ld_impl_linux-64	pkgs/main/linux-64::ld_impl_linux-64-2.40-h12ee597_0
libffi	pkgs/main/linux-64::libffi-3.4.4-h6a678d5_1
libgcc-ng	pkgs/main/linux-64::libgcc-ng-11.2.0-h1234567_1

```
libgomp          pkgs/main/linux-64::libgomp-11.2.0-h1234567_1
libstdcxx-ng     pkgs/main/linux-64::libstdcxx-ng-11.2.0-h1234567_1
ncurses          pkgs/main/linux-64::ncurses-6.4-h6a678d5_0
openssl          pkgs/main/linux-64::openssl-3.0.16-h5eee18b_0
pip              pkgs/main/linux-64::pip-24.2-py38h06a4308_0
python           pkgs/main/linux-64::python-3.8.20-he870216_0
readline         pkgs/main/linux-64::readline-8.2-h5eee18b_0
setuptools       pkgs/main/linux-64::setuptools-75.1.0-py38h06a4308_0
sqlite           pkgs/main/linux-64::sqlite-3.45.3-h5eee18b_0
tk               pkgs/main/linux-64::tk-8.6.14-h39e8969_0
wheel            pkgs/main/linux-64::wheel-0.44.0-py38h06a4308_0
xz               pkgs/main/linux-64::xz-5.6.4-h5eee18b_1
zlib             pkgs/main/linux-64::zlib-1.2.13-h5eee18b_1
```

#### Downloading and Extracting Packages:

```
python-3.8.20      | 23.8 MB   | :    0% 0/1 [00:00<?, ?it/s]
openssl-3.0.16    | 5.2 MB    | :    0% 0/1 [00:00<?, ?it/s]

pip-24.2           | 2.2 MB    | :    0% 0/1 [00:00<?, ?it/s]
```

```
!source /usr/local/miniconda/bin/activate TDDFAV3
```

```
!which python
```

```
➡ /usr/local/miniconda/bin/python
```

```
!source /usr/local/miniconda/bin/activate TDDFAV3 && which python
```

```
➡ /usr/local/miniconda/envs/TDDFAV3/bin/python
```

```
!pip install torch torchvision torchaudio --index-url https://download.pytorch.org
```

```
➡ Looking in indexes: https://download.pytorch.org/whl/cu118
Collecting torch
  Downloading https://download.pytorch.org/whl/cu118/torch-2.6.0%2Bcu118-linux-x86\_64.whl
Collecting torchvision
  Downloading https://download.pytorch.org/whl/cu118/torchvision-0.21.0%2Bcu118-linux-x86\_64.whl
Collecting torchaudio
  Downloading https://download.pytorch.org/whl/cu118/torchaudio-2.6.0%2Bcu118-linux-x86\_64.whl
```

Collecting filelock (from torch)  
 Downloading <https://download.pytorch.org/whl/filelock-3.13.1-py3-none-any.whl>  
 Requirement already satisfied: typing-extensions>=4.10.0 in /usr/local/lib/python3.10/dist-packages (from filelock==3.13.1)  
 Collecting networkx (from torch)  
 Downloading <https://download.pytorch.org/whl/networkx-3.3-py3-none-any.whl>  
 Collecting jinja2 (from torch)  
 Downloading <https://download.pytorch.org/whl/Jinja2-3.1.4-py3-none-any.whl>  
 Collecting fsspec (from torch)  
 Downloading <https://download.pytorch.org/whl/fsspec-2024.6.1-py3-none-any.whl>  
 Collecting nvidia-cuda-nvrtc-cu11==11.8.89 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cuda\\_nvrtc-11.8.89-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cuda_nvrtc-11.8.89-cu118-linux_x86_64.whl)  
 23.2/23.2 MB 168.8 MB/s  
 Collecting nvidia-cuda-runtime-cu11==11.8.89 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cuda\\_runtime-11.8.89-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cuda_runtime-11.8.89-cu118-linux_x86_64.whl)  
 875.6/875.6 kB 45.6 MB/s  
 Collecting nvidia-cuda-cupti-cu11==11.8.87 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cuda\\_cupti-11.8.87-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cuda_cupti-11.8.87-cu118-linux_x86_64.whl)  
 13.1/13.1 MB 157.9 MB/s  
 Collecting nvidia-cudnn-cu11==9.1.0.70 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cudnn-9.1.0.70-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cudnn-9.1.0.70-cu118-linux_x86_64.whl)  
 663.9/663.9 MB 33.0 MB/s  
 Collecting nvidia-cublas-cu11==11.11.3.6 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cublas-11.11.3.6-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cublas-11.11.3.6-cu118-linux_x86_64.whl)  
 417.9/417.9 MB 54.2 MB/s  
 Collecting nvidia-cufft-cu11==10.9.0.58 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cufft-10.9.0.58-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cufft-10.9.0.58-cu118-linux_x86_64.whl)  
 168.4/168.4 MB 71.0 MB/s  
 Collecting nvidia-curand-cu11==10.3.0.86 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_curand-10.3.0.86-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_curand-10.3.0.86-cu118-linux_x86_64.whl)  
 58.1/58.1 MB 60.9 MB/s  
 Collecting nvidia-cusolver-cu11==11.4.1.48 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cusolver-11.4.1.48-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cusolver-11.4.1.48-cu118-linux_x86_64.whl)  
 128.2/128.2 MB 67.4 MB/s  
 Collecting nvidia-cuspars-cu11==11.7.5.86 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_cuspars-11.7.5.86-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_cuspars-11.7.5.86-cu118-linux_x86_64.whl)  
 204.1/204.1 MB 73.2 MB/s  
 Collecting nvidia-nccl-cu11==2.21.5 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_nccl-2.21.5-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_nccl-2.21.5-cu118-linux_x86_64.whl)  
 147.8/147.8 MB 69.1 MB/s  
 Collecting nvidia-nvtx-cu11==11.8.86 (from torch)  
 Downloading [https://download.pytorch.org/whl/cu118/nvidia\\_nvtx-11.8.86-cu118-linux\\_x86\\_64.whl](https://download.pytorch.org/whl/cu118/nvidia_nvtx-11.8.86-cu118-linux_x86_64.whl)  
 Collecting triton==3.2.0 (from torch)  
 Downloading [https://download.pytorch.org/whl/triton-3.2.0-cp312-cp312-manylinux\\_2\\_17\\_x86\\_64.manylinux2014\\_x86\\_64.whl](https://download.pytorch.org/whl/triton-3.2.0-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl)  
 Requirement already satisfied: setuptools in /usr/local/miniconda/lib/python3.10/site-packages (from triton==3.2.0)  
 Collecting sympy==1.13.1 (from torch)  
 Downloading <https://download.pytorch.org/whl/sympy-1.13.1-py3-none-any.whl>  
 6.2/6.2 MB 132.2 MB/s  
 Collecting mpmath<1.4,>=1.1.0 (from sympy==1.13.1->torch)  
 Downloading <https://download.pytorch.org/whl/mpmath-1.3.0-py3-none-any.whl>  
 536.2/536.2 kB 21.4 MB/s  
 Collecting numpy (from torchvision)

```
%cd /content/3DDFA-V3/  
!pip install -r requirements.txt
```

```
⇒ /content/3DDFA-V3  
Collecting Pillow==10.3.0 (from -r requirements.txt (line 2))  
  Downloading pillow-10.3.0-cp312-cp312-manylinux_2_28_x86_64.whl.met  
Collecting opencv-python==4.9.0.80 (from -r requirements.txt (line 3))  
  Downloading opencv_python-4.9.0.80-cp37-abi3-manylinux_2_17_x86_64.  
Collecting torch-summary (from -r requirements.txt (line 5))  
  Downloading torch_summary-1.4.5-py3-none-any.whl.metadata (18 kB)  
Collecting scipy (from -r requirements.txt (line 6))  
  Downloading scipy-1.15.2-cp312-cp312-manylinux_2_17_x86_64.manylinu  
Collecting scikit-image (from -r requirements.txt (line 7))  
  Downloading scikit_image-0.25.2-cp312-cp312-manylinux_2_17_x86_64.n  
Collecting alumentations (from -r requirements.txt (line 10))  
  Downloading alumentations-2.0.5-py3-none-any.whl.metadata (41 kB)  
Collecting tensorflow (from -r requirements.txt (line 13))  
  Downloading tensorflow-2.19.0-cp312-cp312-manylinux_2_17_x86_64.mar  
Collecting mtcnn (from -r requirements.txt (line 14))  
  Downloading mtcnn-1.0.0-py3-none-any.whl.metadata (5.8 kB)  
Collecting Ninja (from -r requirements.txt (line 16))  
  Downloading ninja-1.11.1.3-py3-none-manylinux_2_12_x86_64.manylinux  
Requirement already satisfied: numpy>=1.21.2 in /usr/local/miniconda/  
Requirement already satisfied: networkx>=3.0 in /usr/local/miniconda/  
Collecting imageio!=2.35.0,>=2.33 (from scikit-image->-r requirements  
  Downloading imageio-2.37.0-py3-none-any.whl.metadata (5.2 kB)  
Collecting tifffile>=2022.8.12 (from scikit-image->-r requirements.t  
  Downloading tifffile-2025.3.13-py3-none-any.whl.metadata (32 kB)  
Requirement already satisfied: packaging>=21 in /usr/local/miniconda/  
Collecting lazy-loader>=0.4 (from scikit-image->-r requirements.txt ( (   
  Downloading lazy_loader-0.4-py3-none-any.whl.metadata (7.6 kB)  
Collecting PyYAML (from alumentations->-r requirements.txt (line 10))  
  Downloading PyYAML-6.0.2-cp312-cp312-manylinux_2_17_x86_64.manylinu  
Requirement already satisfied: pydantic>=2.9.2 in /usr/local/miniconc  
Collecting albucore==0.0.23 (from alumentations->-r requirements.txt  
  Downloading albucore-0.0.23-py3-none-any.whl.metadata (5.3 kB)  
Collecting opencv-python-headless>=4.9.0.80 (from alumentations->-r  
  Downloading opencv_python_headless-4.11.0.86-cp37-abi3-manylinux_2_  
Collecting stringzilla>=3.10.4 (from albucore==0.0.23->alumentations  
  Downloading stringzilla-3.12.3-cp312-cp312-manylinux_2_5_x86_64.mar  
Collecting simsimd>=5.9.2 (from albucore==0.0.23->alumentations->-r  
  Downloading simsimd-6.2.1-cp312-cp312-manylinux_2_28_x86_64.whl.met  
Collecting absl-py>=1.0.0 (from tensorflow->-r requirements.txt (line  
  Downloading absl_py-2.1.0-py3-none-any.whl.metadata (2.3 kB)  
Collecting astunparse>=1.6.0 (from tensorflow->-r requirements.txt (l  
  Downloading astunparse-1.6.3-py2.py3-none-any.whl.metadata (4.4 kB)  
Collecting flatbuffers>=24.3.25 (from tensorflow->-r requirements.txt
```

```

Downloading flatbuffers-25.2.10-py2.py3-none-any.whl.metadata (875
Collecting gast!=0.5.0,!0.5.1,!0.5.2,>=0.2.1 (from tensorflow->-r r
Downloading gast-0.6.0-py3-none-any.whl.metadata (1.3 kB)
Collecting google-pasta>=0.1.1 (from tensorflow->-r requirements.txt
Downloading google_pasta-0.2.0-py3-none-any.whl.metadata (814 bytes
Collecting libclang>=13.0.0 (from tensorflow->-r requirements.txt (li
Downloading libclang-18.1.1-py2.py3-none-manylinux2010_x86_64.whl.n
Collecting opt-einsum>=2.3.2 (from tensorflow->-r requirements.txt (1
Downloading opt_einsum-3.4.0-py3-none-any.whl.metadata (6.3 kB)
Collecting protobuf!=4.21.0,!4.21.1,!4.21.2,!4.21.3,!4.21.4,!4.2
Downloading protobuf-5.29.3-cp38-abi3-manylinux2014_x86_64.whl.meta
Requirement already satisfied: requests<3,>=2.21.0 in /usr/local/mini

```

```
!pip install pyngrok
```

```

=> Downloading six-1.17.0-py2.py3-none-any.whl.metadata (1.7 kB)
Collecting pyngrok
Collecting termcolor>=1.1.0 (from tensorflow->-r requirements.txt (li
Downloading termcolor-1.2.5-py3-none-any.whl.metadata (6.1 kB)
Requirement already satisfied: pyyaml>=5.1 in /usr/local/miniconda/l:
Downloading pyngrok-7.2.3-py3-none-any.whl (23 kB)
Collecting websocket-client from tensorflow->-r requirements.txt (line
Successfully installed pyngrok-7.2.3
Collecting grpcio<2.0,>=1.24.3 (from tensorflow->-r requirements.txt

```

```
!git clone https://github.com/NVlabs/nvdiffrast.git
```

```
!cd nvdiffrast
```

```
!pip install .
```

```
!cd ..
```

```

=> Cloning into 'nvdiffrast'...
Collecting h5py>=3.0.0 (from tensorflow->-r requirements.
removal downloading objects 100% (128/128) done
removal downloading objects 100% (51/51) done
removal Total 404 (delta 90) py3 reused any. wheel metadata pack reused 276
Receiving objects: 100% (404/404) 11.11 MiB | 33.95 MiB/s done
Resolving deltas: 100% (215/215) done
ERROR: Directory '.' is not installable. Neither 'setup.py' nor 'pypl
Requirement already satisfied: wheel<1.0,>=0.25.0 in /usr/local/minic
Requirement already satisfied: rich in /usr/local/miniconda/lib/pythc

```

```
!ls nvdiffrast
```

```

=> Downloading optree-0.14.1-cp312-cp312-manylinux_2_17_x86_64.manylinr
docker docs LICENSE.txt nvdiffrast README.md run_sample.sh samu
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/mi
Requirement already satisfied: pydantic-core==2.27.1 in /usr/local/mi
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local
Requirement already satisfied: idna<4,>=2.5 in /usr/local/miniconda/l
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/minic
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/minic
Collecting markdown>=2.6.8 (from tensorboard~2.19.0->tensorflow->-r
Downloading Markdown-3.7-py3-none-any.whl.metadata (7.0 kB)
Collecting tensorboard-data-server<0.8.0,>=0.7.0 (from tensorboard~2

```



```
%cd /content/3DDFA-V3/nvdiffrast
!pip install .
```

```
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/miniconda3/lib/python3.12/site-packages/markdown_it_py-3.0.0-py3-none-any.whl (100 kB)
Requirement already satisfied: pygments<3.0.0, >=2.13.0 in /usr/local/miniconda3/lib/python3.12/site-packages/pygments-2.18.0-py3-none-any.whl (1.1 MB)
Requirement already satisfied: mdurl<0.1 in /usr/local/miniconda3/lib/python3.12/site-packages/mdurl-0.1.2-py3-none-any.whl (10 kB)
Requirement already satisfied: numpy in /usr/local/miniconda3/lib/python3.12/site-packages/numpy-2.0.2-cp312-cp312-manylinux_2_28_x86_64.whl (15.0 MB)
Building wheels for collected packages: nvdiffrast
Building wheel for nvdiffrast: setup.py --> done
Created wheel for nvdiffrast: filename=nvdiffrast-0.13.0-py3-none-any.whl size=13337 bytes digest=sha256:4544554545454545
Stored in directory: /usr/local/miniconda3/lib/python3.12/site-packages/wheels/c2/
Successfully built nvdiffrast
Installing collected packages: nvdiffrast
Successfully installed nvdiffrast-0.13.0
15.0/15.0 MB 132.9 MB/s eta 0s
```

```
%cd nvdiffrast/util/cython_renderer/
!python setup.py build_ext -i
%cd ../../..
```

```
Downloading nonsh-1.0.0-py3-none-any.whl (133 kB)
Downloading astunparse-1.6.3-py2.py3-none-any.whl (12 kB)
Downloading flatbuffers-25.2.10-py2.py3-none-any.whl (30 kB)
Downloading gast-0.6.0-py3-none-any.whl (21 kB)
```

```
!ls -R /content/3DDFA-V3/nvdiffrast
```

```
Downloading h5py-3.13.0-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.3 MB)
/content/3DDFA-V3/nvdiffrast/build/docs/nydiffrast/README.md samples
Downloading imageio-2.37.0-py3-none-any.whl (315 kB)
Downloading LICENSE.txt nvdiffrast.egg-info run_sample.sh setup.py
Downloading joblib-1.4.2-py3-none-any.whl (301 kB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/nydiffrast.py (1.3 MB)
bdist.linux-x86_64 lib
Downloading lazy_loader-0.4-py3-none-any.whl (12 kB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/nydiffrast.py (1.3 MB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/nydiffrast.py (1.3 MB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/nydiffrast.py (1.3 MB)
Downloading ml_dtypes-0.5.1-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (24.5 MB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/nydiffrast.py (1.3 MB)
Downloading ml_dtypes-0.5.1-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (24.5 MB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/nydiffrast.py (1.3 MB)
Downloading init_opencv_pytorch_extensions_torch-1.0.86-cp37-abi3-manylinux_2_17_x86_64.whl (50.0 MB)
/content/3DDFA-V3/nvdiffrast/build/lib/nydiffrast/common:
antialias.cu common.h glutil.c interpolator.cu rasterizer.cu
Downloading protobuf-5.29.3-cp38-abi3-manylinux2014_x86_64.whl (319 kB)
antialias.h cudaraster glutil_extlist.h interpolate.h rasterizer.cu
Downloading six-1.17.0-py2.py3-none-any.whl (11 kB)
common.cpp framework.h glutil.h rasterize.cu rasterizer.cu
Downloading tensorboard-2.19.0-py3-none-any.whl (5.5 MB)
```

```

5.5/5.5 MB 139.1 MB/s etc
/content/3DDFA-V3/nvdifffrast/build/lib/nvdifffrast/common/cudaraster:
Downloading termcolor-2.5.0-py3-none-any.whl (7.8 kB)
Downloading tifffile-2025.3.13-py3-none-any.whl (226 kB)
Downloading wrapt-1.17.2-cp312-cp312-manylinux_2_5_x86_64.manylinux1_
/content/3DDFA-V3/nvdifffrast/build/lib/nvdifffrast/common/cudaraster/
Downloading PyYAML-6.0.2-cp312-cp312-manylinux_2_17_x86_64.manylinux2
BinkRaster.inl CoarseRaster.inl Defs.hpp RasterImpl.cpp RasterImpl.inl
Buffer.cpp Constants.hpp FineRaster.inl RasterImpl.cu RasterImpl.hpp
Downloading Markdown-3.7-py3-none-any.whl (106 kB)
Downloading simsimd-6.2.1-cp312-cp312-manylinux_2_28_x86_64.whl (633
/content/3DDFA-V3/nvdifffrast/build/lib/nvdifffrast/tensorflow:
Downloading tf_slim_loader-1.3-py3-none-any.whl (4.5 kB)
Downloading tensorflow_data_server-1.15.0-cp312-cp312-manylinux_2_31_x86
6.6/6.6 MB 136.4 MB/s etc
/content/3DDFA-V3/nvdifffrast/build/lib/nvdifffrast/torch:
Downloading namex-0.0.0-cp312-cp312-manylinux_2_31_x86_64.whl (5.8 kB)
Downloading optree-0.11.1-cp312-cp312-manylinux_2_31_x86_64.whl (1.1 MB)
Installing collected packages: common, stringzilla, simsimd, namex, pillow,
Attempting uninstall: Pillow
/content/3DDFA-V3/nvdifffrast/docker:
Found existing installation: pillow 11.0.0
10_nvvidia.json Dockerfile
Uninstalling pillow-11.0.0:
Successfully uninstalled pillow-11.0.0
/content/3DDFA-V3/nvdifffrast/docs:
Successfully installed Ninja-1.11.1.3 Pillow-10.3.0 PyYAML-6.0.2 abs1
img index.html

/content/3DDFA-V3/nvdifffrast/docs/img:
cube.png      pipe_earth.png    spot_crop2.png  spot_st.png
earth.png     pipe_envphong.png spot_diff1.png  spot_tex.png
envphong.png  pose.png          spot_diff2.png  spot_texture.png
logo.png      spot_aa.png       spot_peel1.png  spot_texw.png
pipe_cube.png spot_crop1.png    spot_peel2.png  spot_tri.png

/content/3DDFA-V3/nvdifffrast/nvdifffrast:
common __init__.py lib __pycache__ tensorflow torch

/content/3DDFA-V3/nvdifffrast/nvdifffrast/common:
antialias.cu  common.h      glutil.cpp     interpolate.cu rasteri:
antialias.h   cudaraster   glutil_extlist.h interpolate.h  rasteri:
common.cpp    framework.h  glutil.h       rasterize.cu  rasteri:

/content/3DDFA-V3/nvdifffrast/nvdifffrast/common/cudaraster:

```



```
!pip install cython
```

```

[⇌] Collecting cython
      Downloading Cython-3.0.12-cp312-cp312-manylinux_2_17_x86_64.manylin
      Downloading Cython-3.0.12-cp312-cp312-manylinux_2_17_x86_64.manylinux
      _____ 3.5/3.5 MB 22.8 MB/s eta
Installing collected packages: cython
Successfully installed cython-3.0.12

```

```
# Navigate to the Cython renderer directory
%cd /content/3DDFA-V3/util/cython_renderer/

# Build the Cython extension
```

```
# Build the cython extension
!python setup.py build_ext -i

# Go back to the main project directory
```

```
# Go back to the main project directory
%cd /content/3DDFA-V3
```

```

⇒ /content/3DDFA-V3/util/cython_renderer
Compiling mesh_core_cython.pyx because it changed.
[1/1] Cythonizing mesh_core_cython.pyx
/usr/local/miniconda/lib/python3.12/site-packages/Cython/Compiler/Main.py:373:
    tree = Parsing.p_module(s, pxd, full_module_name)
In file included from /usr/local/miniconda/lib/python3.12/site-packages/mesh_core_cython.pyx:1,
                  from /usr/local/miniconda/lib/python3.12/site-packages/mesh_core_cython.pxd:1,
                  from /usr/local/miniconda/lib/python3.12/site-packages/mesh_core_cython.pyx:1,
                  from mesh_core_cython.cpp:1264:
/usr/local/miniconda/lib/python3.12/site-packages/numpy/_core/include/numpy/ndarraytypes.h:17:17:
    17 | #warning "Using deprecated NumPy API, disable it with " \
        | ~~~~~~
/content/3DDFA-V3

```

```
!wget -P assets https://huggingface.co/datasets/Zidu-Wang/3DDFA-V3/resol
!wget -P assets https://huggingface.co/datasets/Zidu-Wang/3DDFA-V3/resol
!wget -P assets https://huggingface.co/datasets/Zidu-Wang/3DDFA-V3/resol
!wget -P assets https://huggingface.co/datasets/Zidu-Wang/3DDFA-V3/resol
!wget -P assets https://huggingface.co/datasets/Zidu-Wang/3DDFA-V3/resol
```

```

[⇒] --2025-03-16 16:22:22-- https://huggingface.co/datasets/Zidu-Wang/3L
Resolving huggingface.co (huggingface.co)... 18.239.50.49, 18.239.50.
Connecting to huggingface.co (huggingface.co)|18.239.50.49|:443... co
HTTP request sent, awaiting response... 302 Found
Location: https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c
--2025-03-16 16:22:22-- https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c

```

Resolving cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)... 18.238.243.82, 18.238.243.82  
Connecting to cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)|18.238.243.82|:443... c  
HTTP request sent, awaiting response... 200 OK  
Length: 103918535 (99M) [binary/octet-stream]  
Saving to: 'assets/face\_model.npy'

face\_model.npy 100%[=====>] 99.10M 166MB/s

2025-03-16 16:22:23 (166 MB/s) - 'assets/face\_model.npy' saved [103918535]

--2025-03-16 16:22:23-- <https://huggingface.co/datasets/Zidu-Wang/31>

Resolving huggingface.co (huggingface.co)... 18.239.50.49, 18.239.50.49  
Connecting to huggingface.co (huggingface.co)|18.239.50.49|:443... c  
HTTP request sent, awaiting response... 302 Found

Location: <https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c>

--2025-03-16 16:22:23-- <https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c>

Resolving cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)... 18.239.18.74, 18.239.18.74  
Connecting to cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)|18.239.18.74|:443... c  
HTTP request sent, awaiting response... 200 OK

Length: 96464581 (92M) [binary/octet-stream]

Saving to: 'assets/net\_recon.pth'

net\_recon.pth 100%[=====>] 92.00M 181MB/s

2025-03-16 16:22:23 (181 MB/s) - 'assets/net\_recon.pth' saved [96464581]

--2025-03-16 16:22:23-- <https://huggingface.co/datasets/Zidu-Wang/31>

Resolving huggingface.co (huggingface.co)... 18.239.50.49, 18.239.50.49  
Connecting to huggingface.co (huggingface.co)|18.239.50.49|:443... c  
HTTP request sent, awaiting response... 302 Found

Location: <https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c>

--2025-03-16 16:22:23-- <https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c>

Resolving cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)... 18.239.18.74, 18.239.18.74  
Connecting to cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)|18.239.18.74|:443... c  
HTTP request sent, awaiting response... 200 OK

Length: 27795941 (27M) [binary/octet-stream]

Saving to: 'assets/large\_base\_net.pth'

large\_base\_net.pth 100%[=====>] 26.51M 132MB/s

2025-03-16 16:22:24 (132 MB/s) - 'assets/large\_base\_net.pth' saved [27795941]

--2025-03-16 16:22:24-- <https://huggingface.co/datasets/Zidu-Wang/31>

Resolving huggingface.co (huggingface.co)... 18.239.50.49, 18.239.50.49  
Connecting to huggingface.co (huggingface.co)|18.239.50.49|:443... c  
HTTP request sent, awaiting response... 302 Found

Location: <https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c>

--2025-03-16 16:22:24-- <https://cdn-lfs-us-1.hf.co/repos/59/18/5918151087a473ecf8c>

Resolving cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)... 18.239.18.74, 18.239.18.74  
Connecting to cdn-lfs-us-1.hf.co (cdn-lfs-us-1.hf.co)|18.239.18.74|:443... c  
HTTP request sent, awaiting response... 200 OK

Length: 109477455 (104M) [binary/octet-stream]

```
mkdir -p /content/3DDFA-V3/my_images
```

```
mkdir -p /content/3DDFA-V3/my_images/results
```

```
!pip list | grep numpy # Check installed NumPy version
!pip uninstall -y numpy
!pip uninstall -y numpy # Run it twice to ensure complete removal
!rm -rf /usr/local/lib/python3.*/dist-packages/numpy*
!rm -rf /usr/local/miniconda/lib/python3.*/site-packages/numpy*
```

```
⇒ numpy 2.1.2
Found existing installation: numpy 2.1.2
Uninstalling numpy-2.1.2:
  Successfully uninstalled numpy-2.1.2
WARNING: Skipping numpy as it is not installed.
```

```
!pip install numpy==1.26.4
```

```
⇒ Collecting numpy==1.26.4
  Downloading numpy-1.26.4-cp312-cp312-manylinux_2_17_x86_64.manylin
  Downloading numpy-1.26.4-cp312-cp312-manylinux_2_17_x86_64.manylinux:
    18.0/18.0 MB 56.8 MB/s et
Installing collected packages: numpy
Successfully installed numpy-1.26.4
```

```
import numpy as np
print(np.__version__) # Should print 1.26.4 or similar
```

```
⇒ 1.26.4
```

```
!python demo.py --inputpath /content/3DDFA-V3/my_images --savepath /cont
```

```
⇒ 2025-03-16 16:24:12.065530: E external/local_xla/xla/stream_executor,
WARNING: All log messages before absl::InitializeLog() is called are
E0000 00:00:1742142252.085841      2916 cuda_dnn.cc:8579] Unable to req
E0000 00:00:1742142252.092653      2916 cuda_blas.cc:1407] Unable to r
W0000 00:00:1742142252.109100      2916 computation_placer.cc:177] comp
W0000 00:00:1742142252.109127      2916 computation_placer.cc:177] comp
W0000 00:00:1742142252.109132      2916 computation_placer.cc:177] comp
W0000 00:00:1742142252.109137      2916 computation_placer.cc:177] comp
2025-03-16 16:24:12.113949: I tensorflow/core/platform/cpu_feature_gi
To enable the following instructions: AVX2 AVX512F FMA, in other ope
/usr/local/miniconda/lib/python3.12/site-packages/torchvision/models,
    warnings.warn(
/usr/local/miniconda/lib/python3.12/site-packages/torchvision/models,
    warnings.warn(msg)
use retinaface for face box
0 /content/3DDFA-V3/my_images/grand.jpg
/usr/local/miniconda/lib/python3.12/site-packages/torch/functional.py
    return _VF.meshgrid(tensors, **kwargs) # type: ignore[attr-defined]
```

```
!pip show pyngrok
```

```
➦ Name: pyngrok
  Version: 7.2.3
  Summary: A Python wrapper for ngrok.
  Home-page:
  Author:
  Author-email:
  License: MIT License
```

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Location: /usr/local/miniconda/lib/python3.12/site-packages  
Requires: PyYAML  
Required-by:

```
import sys
sys.path.append("/usr/local/miniconda/lib/python3.12/site-packages")

from pyngrok import ngrok
```

```
from pyngrok import ngrok
ngrok.set_auth_token("2uMWVUGqdhDhw8QLoiQkeVywYwW_6QaNdJLEmk3WvxUrjWzpN")
```

```
!pip install fastapi uvicorn python-multipart pyngrok
```

```
⇒ Collecting fastapi
  Downloading fastapi-0.115.11-py3-none-any.whl.metadata (27 kB)
Collecting uvicorn
  Downloading uvicorn-0.34.0-py3-none-any.whl.metadata (6.5 kB)
Collecting python-multipart
  Downloading python_multipart-0.0.20-py3-none-any.whl.metadata (1.8
Requirement already satisfied: pyngrok in /usr/local/miniconda/lib/p
Collecting starlette<0.47.0,>=0.40.0 (from fastapi)
  Downloading starlette-0.46.1-py3-none-any.whl.metadata (6.2 kB)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,!=2.0.0,!=2.0.1,
Requirement already satisfied: typing-extensions>=4.8.0 in /usr/loca
Collecting click>=7.0 (from uvicorn)
  Downloading click-8.1.8-py3-none-any.whl.metadata (2.3 kB)
Collecting h11>=0.8 (from uvicorn)
  Downloading h11-0.14.0-py3-none-any.whl.metadata (8.2 kB)
Requirement already satisfied: PyYAML>=5.1 in /usr/local/miniconda/l:
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/r
Requirement already satisfied: pydantic-core==2.27.1 in /usr/local/m:
Collecting anyio<5,>=3.6.2 (from starlette<0.47.0,>=0.40.0->fastapi)
  Downloading anyio-4.8.0-py3-none-any.whl.metadata (4.6 kB)
Requirement already satisfied: idna>=2.8 in /usr/local/miniconda/lib,
Collecting sniffio>=1.1 (from anyio<5,>=3.6.2->starlette<0.47.0,>=0.4
  Downloading sniffio-1.3.1-py3-none-any.whl.metadata (3.9 kB)
Downloading fastapi-0.115.11-py3-none-any.whl (94 kB)
Downloading uvicorn-0.34.0-py3-none-any.whl (62 kB)
Downloading python_multipart-0.0.20-py3-none-any.whl (24 kB)
Downloading click-8.1.8-py3-none-any.whl (98 kB)
Downloading h11-0.14.0-py3-none-any.whl (58 kB)
Downloading starlette-0.46.1-py3-none-any.whl (71 kB)
Downloading anyio-4.8.0-py3-none-any.whl (96 kB)
Downloading sniffio-1.3.1-py3-none-any.whl (10 kB)
Installing collected packages: sniffio, python-multipart, h11, click,
Successfully installed anyio-4.8.0 click-8.1.8 fastapi-0.115.11 h11-(
```



```
!pip install flask flask-ngrok
```

```
⇒ Collecting flask
  Downloading flask-3.1.0-py3-none-any.whl.metadata (2.7 kB)
Collecting flask-ngrok
  Downloading flask_ngrok-0.0.25-py3-none-any.whl.metadata (1.8 kB)
Requirement already satisfied: Werkzeug>=3.1 in /usr/local/miniconda/
Requirement already satisfied: Jinja2>=3.1.2 in /usr/local/miniconda/
Collecting itsdangerous>=2.2 (from flask)
  Downloading itsdangerous-2.2.0-py3-none-any.whl.metadata (1.9 kB)
Requirement already satisfied: click>=8.1.3 in /usr/local/miniconda/
Collecting blinker>=1.9 (from flask)
  Downloading blinker-1.9.0-py3-none-any.whl.metadata (1.6 kB)
Requirement already satisfied: requests in /usr/local/miniconda/lib/
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/miniconda/
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/miniconda/
Requirement already satisfied: idna<4,>=2.5 in /usr/local/miniconda/
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/miniconda/
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/miniconda/
Downloading flask-3.1.0-py3-none-any.whl (102 kB)
Downloading flask_ngrok-0.0.25-py3-none-any.whl (3.1 kB)
Downloading blinker-1.9.0-py3-none-any.whl (8.5 kB)
Downloading itsdangerous-2.2.0-py3-none-any.whl (16 kB)
Installing collected packages: itsdangerous, blinker, flask, flask-ngrok
Successfully installed blinker-1.9.0 flask-3.1.0 flask-ngrok-0.0.25 :
```

```
!pip install flask-cors
```

```
⇒ Requirement already satisfied: flask-cors in /usr/local/miniconda/lib/
Requirement already satisfied: flask>=0.9 in /usr/local/miniconda/lib/
Requirement already satisfied: Werkzeug>=0.7 in /usr/local/miniconda/
Requirement already satisfied: Jinja2>=3.1.2 in /usr/local/miniconda/
Requirement already satisfied: itsdangerous>=2.2 in /usr/local/miniconda/
Requirement already satisfied: click>=8.1.3 in /usr/local/miniconda/
Requirement already satisfied: blinker>=1.9 in /usr/local/miniconda/
Requirement already satisfied: MarkupSafe>=2.1.1 in /usr/local/miniconda/
```

```
from flask_cors import CORS

app = Flask(__name__)
CORS(app) # Allow all origins
```



```
-----
-----
ModuleNotFoundError                                Traceback (most recent
call last)
<ipython-input-28-ddbcb2c310c2> in <cell line: 0>()
----> 1 from flask_cors import CORS
      2
      3 app = Flask(__name__)
      4 CORS(app) # Allow all origins
      5

ModuleNotFoundError: No module named 'flask_cors'
```

-----

NOTE: If your import is failing due to a missing package, you can manually install dependencies using either `!pip` or `!apt`.

To view examples of installing some common dependencies, click the "Open Examples" button below.

-----

```
CORS(app, resources={r"/*": {"origins": "http://localhost:3000"}}) # Ad
```



```
<flask_cors.extension.CORS at 0x7e759576ef10>
```

```
!nohup python -u app.py > flask.log 2>&1 &
```

```
!pip install pyngrok
from pyngrok import ngrok

# Kill any previous ngrok process
!kill -f ngrok

# Start ngrok on port 3000
public_url = ngrok.connect(5000)
print(f"🚀 Public URL: {public_url}")
```

➡ Requirement already satisfied: pyngrok in /usr/local/miniconda/lib/python3.10/site-packages (1.4.0)  
 Requirement already satisfied: PyYAML>=5.1 in /usr/local/miniconda/lib/python3.10/site-packages (5.4.1)  
 🚀 Public URL: NgrokTunnel: "<https://0be0-35-221-199-220.ngrok-free.dev>"

```
! lsof -i :5000
```

```
➡ COMMAND  PID USER  FD   TYPE DEVICE SIZE/OFF NODE NAME
python3 1851 root   51u  IPv4  93109      0t0  TCP *:5000 (LISTEN)
```

```
! kill -9 1851 # Replace 12345 with the actual PID
# Replace 12345 with the actual PID
```

```
import threading
import os
import glob
import subprocess
from pathlib import Path
from flask import Flask, request, send_file, jsonify
from flask_cors import CORS # Import CORS before using it
from pyngrok import ngrok

# Initialize Flask app
app = Flask(__name__)

# Enable CORS (Allow all origins)
CORS(app)

# Define paths
input_dir = Path("/content/3DDFA-V3/my_images")
output_dir = Path("/content/3DDFA-V3/my_images/results")
input_dir.mkdir(parents=True, exist_ok=True)
```

```

output_dir.mkdir(parents=True, exist_ok=True)

# Kill any previous ngrok process
os.system("pkill -f ngrok")

# Start ngrok on port 5000
public_url = ngrok.connect(5000)
print(f"🚀 Public URL: {public_url}")

@app.route("/")
def home():
    return jsonify({"message": "3D Face Reconstruction API is running! U

@app.route("/upload", methods=["POST"])
def upload_image():
    if "file" not in request.files:
        return jsonify({"error": "No file provided"}), 400

    file = request.files["file"]
    save_path = input_dir / file.filename
    file.save(save_path)

    # Run the model
    command = f"python demo.py --inputpath {input_dir} --savepath {output_dir}"
    subprocess.run(command, shell=True)

    # Search for .obj files in subdirectories
    obj_files = glob.glob(f"{output_dir}/{file.filename.split('.')[0]}/*.*")

    if obj_files:
        obj_filename = obj_files[0].split("/")[-1] # Extract filename only
        return jsonify({"message": "Processing completed", "obj_file": obj_filename})
    else:
        return jsonify({"error": "OBJ file not found"}), 404

@app.route("/download/<filename>", methods=["GET"])
def download_file(filename):
    file_paths = glob.glob(f"{output_dir}/**/{filename}", recursive=True)
    if file_paths:
        return send_file(file_paths[0], as_attachment=True)
    return jsonify({"error": "File not found"}), 404

# Function to run Flask in a separate thread
def run_flask():
    app.run(host="0.0.0.0", port=5000)

```

```
# Start Flask in a thread
thread = threading.Thread(target=run_flask, daemon=True)
thread.start()

print("🚀 Flask is running in the background! You can now run other cell
```

```
🔗 🚀 Public URL: NgrokTunnel: "https://6ab4-35-231-20-70.ngrok-free.ap
* Serving Flask app '__main__'
🚀 Flask is running in the background! You can now run other cells.
* Debug mode: off
```

```
!curl -X POST -F "file=@/content/3DDFA-V3/my_images/sample1.png" https://
```

```
🔗 WARNING:pyngrok.process.ngrok:t=2025-03-15T16:47:41+0000 lvl=warn ms(
WARNING:pyngrok.process.ngrok:t=2025-03-15T16:47:41+0000 lvl=warn ms(
<!DOCTYPE html>
<html class="h-full" lang="en-US" dir="ltr">
  <head>
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <meta charset="utf-8">
    <meta name="author" content="ngrok">
    <meta name="description" content="ngrok is the fastest way to put
    <meta name="robots" content="noindex, nofollow">
    <meta name="viewport" content="width=device-width, initial-scale=
    <link id="style" rel="stylesheet" href="https://cdn.ngrok.com/sta
    <noscript>Traffic was successfully tunneled to the ngrok agent, l
    <script id="script" src="https://cdn.ngrok.com/static/js/error.js
  </head>
  <body class="h-full" id="ngrok">
    <div id="root" data-payload="eyJhZGRyIjoibG9jYWxob3N0OjMwMDAiLCJj
  </body>
</html>
```

```
import threading
from flask import Flask, request, send_file, jsonify
from pathlib import Path
import os
```

```

import glob
import subprocess

app = Flask(__name__)

# Define paths
input_dir = Path("/content/3DDFA-V3/my_images")
output_dir = Path("/content/3DDFA-V3/my_images/results")
input_dir.mkdir(parents=True, exist_ok=True)
output_dir.mkdir(parents=True, exist_ok=True)

@app.route("/")
def home():
    return jsonify({"message": "3D Face Reconstruction API is running! U

@app.route("/upload", methods=["POST"])
def upload_image():
    if "file" not in request.files:
        return jsonify({"error": "No file provided"}), 400

    file = request.files["file"]
    save_path = input_dir / file.filename
    file.save(save_path)

    # Run the model
    command = f"python demo.py --inputpath {input_dir} --savepath {output_dir}"
    subprocess.run(command, shell=True)

    # Search for .obj files in subdirectories
    obj_files = glob.glob(f"{output_dir}/{file.filename.split('.')[0]}/*.*")

    if obj_files:
        obj_filename = obj_files[0].split("/")[-1] # Extract filename of .obj file
        return jsonify({"message": "Processing completed", "obj_file": obj_filename})
    else:
        return jsonify({"error": "OBJ file not found"}), 404

@app.route("/download/<filename>", methods=["GET"])
def download_file(filename):
    file_paths = glob.glob(f"{output_dir}/**/{filename}", recursive=True)
    if file_paths:
        return send_file(file_paths[0], as_attachment=True)
    return jsonify({"error": "File not found"}), 404

# Function to run Flask in a separate thread
def run_flask():

```



```
app.run(host="0.0.0.0", port=5000)
```

```
# Start Flask in a thread
```

```
thread = threading.Thread(target=run_flask, daemon=True)
```

```
thread.start()
```

```
print("🚀 Flask is running in the background! You can now run other cell
```

```
🔄 🚀 Flask is running in the background! You can now run other cells.  
* Serving Flask app '__main__'
```

```
!ls /content/3DDFA-V3/my_images/results
```

```
🔄 shubman-gill
```

```
!ps aux | grep ngrok
```

```
🔄 root      33565  0.0  0.0   7376   3548 ?        S    17:50   0:00 /l  
root      33567  0.0  0.0   6484   2220 ?        S    17:50   0:00 g
```

```
!ps -9 33565
```

```
🔄      PID TTY          STAT TIME  COMMAND
```

```
! ps aux | grep flask
```

```
🔄 root      33481  0.0  0.0   7376   3384 ?        S    17:50   0:00 /l  
root      33483  0.0  0.0   6484   2268 ?        S    17:50   0:00 g
```

```
! curl -X POST "https://30d4-34-56-34-230.ngrok-free.app/upload" \
-F "file=@/content/3DDFA-V3/my_images/shubman-gill.png"
```

```
➤ <!DOCTYPE html>
<html class="h-full" lang="en-US" dir="ltr">
  <head>
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/euc
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <link rel="preload" href="https://cdn.ngrok.com/static/fonts/ibm-
    <meta charset="utf-8">
    <meta name="author" content="ngrok">
    <meta name="description" content="ngrok is the fastest way to put
    <meta name="robots" content="noindex, nofollow">
    <meta name="viewport" content="width=device-width, initial-scale=
    <link id="style" rel="stylesheet" href="https://cdn.ngrok.com/sta
    <noscript>Traffic was successfully tunneled to the ngrok agent, l
    <script id="script" src="https://cdn.ngrok.com/static/js/error.js
  </head>
  <body class="h-full" id="ngrok">
    <div id="root" data-payload="eyJhZGRyIjoibG9jYWxob3N0OjgwMDgiLCJj
  </body>
</html>
```

```
!curl -X POST "https://c6a6-34-56-34-230.ngrok-free.app//upload" -F "file"
```

```
➤ INFO:werkzeug:127.0.0.1 -- [15/Mar/2025 10:34:01] "POST /upload HTTP/1.1" 404
{"error": "OBJ file not found"}
```

```
#download
```

```
!pip install mtcnn
```

```
➤ Requirement already satisfied: mtcnn in /usr/local/lib/python3.11/dist-packages (0.1.0)
Requirement already satisfied: joblib>=1.4.2 in /usr/local/lib/python3.11/dist-packages (1.4.2)
Requirement already satisfied: lz4>=4.3.3 in /usr/local/lib/python3.11/dist-packages (4.3.3)
```

```
!pip uninstall torch torchvision torchaudio -y
!pip cache purge
```

```
!pip install torch torchvision torchaudio --index-url https://download.py
```

```
➔ Found existing installation: torch 2.6.0+cu118
Uninstalling torch-2.6.0+cu118:
  Successfully uninstalled torch-2.6.0+cu118
Found existing installation: torchvision 0.21.0+cu118
Uninstalling torchvision-0.21.0+cu118:
  Successfully uninstalled torchvision-0.21.0+cu118
Found existing installation: torchaudio 2.6.0+cu118
Uninstalling torchaudio-2.6.0+cu118:
  Successfully uninstalled torchaudio-2.6.0+cu118
Files removed: 50
Looking in indexes: https://download.pytorch.org/whl/cu118
Collecting torch
  Downloading https://download.pytorch.org/whl/cu118/torch-2.6.0%2Bcu118.whl
Collecting torchvision
  Downloading https://download.pytorch.org/whl/cu118/torchvision-0.21.0%2Bcu118.whl
Collecting torchaudio
  Downloading https://download.pytorch.org/whl/cu118/torchaudio-2.6.0%2Bcu118.whl
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: typing-extensions>=4.10.0 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: networkx in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: jinja2 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cuda-nvrtc-cu11==11.8.89 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cuda-runtime-cu11==11.8.89 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cuda-cupti-cu11==11.8.87 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cudnn-cu11==9.1.0.70 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cublas-cu11==11.11.3.6 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cufft-cu11==10.9.0.58 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-curand-cu11==10.3.0.86 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cusolver-cu11==11.4.1.48 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-cuspars-cu11==11.7.5.86 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-nccl-cu11==2.21.5 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: nvidia-nvtx-cu11==11.8.86 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: triton==3.2.0 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: sympy==1.13.1 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from torch)
Requirement already satisfied: numpy in /usr/local/lib/python3.11/dist-packages (from torchvision)
Requirement already satisfied: pillow!=8.3.*,>=5.3.0 in /usr/local/lib/python3.11/dist-packages (from torchvision)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.11/dist-packages (from torchvision)
Downloading https://download.pytorch.org/whl/cu118/torch-2.6.0%2Bcu118.whl
848.7/848.7 MB 718.5 kB/s eta 0:00
Downloading https://download.pytorch.org/whl/cu118/torchvision-0.21.0%2Bcu118.whl
6.5/6.5 MB 11.9 MB/s eta 0:00
Downloading https://download.pytorch.org/whl/cu118/torchaudio-2.6.0%2Bcu118.whl
3.3/3.3 MB 54.7 MB/s eta 0:00
Installing collected packages: torch, torchvision, torchaudio
Successfully installed torch-2.6.0+cu118 torchaudio-2.6.0+cu118 torch
```

```
!python --version
```

```
Python 3.11.11
```

```
!pip install --pre torch torchvision torchaudio --index-url https://down
```

```
Looking in indexes: https://download.pytorch.org/whl/nightly/cu118  
Requirement already satisfied: torch in /usr/local/lib/python3.11/dist-packages (2.2.0.dev0)  
Requirement already satisfied: torchvision in /usr/local/lib/python3.11/dist-packages (0.17.0.dev0)  
Requirement already satisfied: torchaudio in /usr/local/lib/python3.11/dist-packages (0.10.0.dev0)  
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (3.12.2)  
Requirement already satisfied: typing-extensions>=4.10.0 in /usr/local/lib/python3.11/dist-packages (4.10.0)  
Requirement already satisfied: networkx in /usr/local/lib/python3.11/dist-packages (3.2.1)  
Requirement already satisfied: jinja2 in /usr/local/lib/python3.11/dist-packages (3.1.2)  
Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (2023.12.2)  
Requirement already satisfied: nvidia-cuda-nvrtc-cu11==11.8.89 in /usr/local/lib/python3.11/dist-packages (11.8.89)  
Requirement already satisfied: nvidia-cuda-runtime-cu11==11.8.89 in /usr/local/lib/python3.11/dist-packages (11.8.89)  
Requirement already satisfied: nvidia-cuda-cupti-cu11==11.8.87 in /usr/local/lib/python3.11/dist-packages (11.8.87)  
Requirement already satisfied: nvidia-cudnn-cu11==9.1.0.70 in /usr/local/lib/python3.11/dist-packages (9.1.0.70)  
Requirement already satisfied: nvidia-cublas-cu11==11.11.3.6 in /usr/local/lib/python3.11/dist-packages (11.11.3.6)  
Requirement already satisfied: nvidia-cufft-cu11==10.9.0.58 in /usr/local/lib/python3.11/dist-packages (10.9.0.58)  
Requirement already satisfied: nvidia-curand-cu11==10.3.0.86 in /usr/local/lib/python3.11/dist-packages (10.3.0.86)  
Requirement already satisfied: nvidia-cusolver-cu11==11.4.1.48 in /usr/local/lib/python3.11/dist-packages (11.4.1.48)  
Requirement already satisfied: nvidia-cusparse-cu11==11.7.5.86 in /usr/local/lib/python3.11/dist-packages (11.7.5.86)  
Requirement already satisfied: nvidia-nccl-cu11==2.21.5 in /usr/local/lib/python3.11/dist-packages (2.21.5)  
Requirement already satisfied: nvidia-nvtx-cu11==11.8.86 in /usr/local/lib/python3.11/dist-packages (11.8.86)  
Requirement already satisfied: triton==3.2.0 in /usr/local/lib/python3.11/dist-packages (3.2.0)  
Requirement already satisfied: sympy==1.13.1 in /usr/local/lib/python3.11/dist-packages (1.13.1)  
Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.11/dist-packages (1.3.0)  
Requirement already satisfied: numpy in /usr/local/lib/python3.11/dist-packages (1.26.0)  
Requirement already satisfied: pillow!=8.3.*,>=5.3.0 in /usr/local/lib/python3.11/dist-packages (10.2.0)  
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.11/dist-packages (2.1.5)
```

```
import matplotlib.pyplot as plt
import cv2
import glob

# Path to results
result_images = glob.glob("/content/3DDFA-V3/my_images/results/*.jpg")

# Show first 5 images
for img_path in result_images[:5]:
    img = cv2.imread(img_path)
    img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
    plt.figure(figsize=(5,5))
    plt.imshow(img)
    plt.axis("off")
    plt.show()
```