

✓ Install TensorFlow Object Detection Dependencies

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# Clone the tensorflow models repository from GitHub
!pip uninstall Cython -y # Temporary fix for "No module named 'object_detection'" error
!git clone --depth 1 https://github.com/tensorflow/models

🔄 Found existing installation: Cython 3.0.11
Uninstalling Cython-3.0.11:
  Successfully uninstalled Cython-3.0.11
Cloning into 'models'...
remote: Enumerating objects: 4298, done.
remote: Counting objects: 100% (4298/4298), done.
remote: Compressing objects: 100% (3280/3280), done.
remote: Total 4298 (delta 1208), reused 2185 (delta 946), pack-reused 0 (from 0)
Receiving objects: 100% (4298/4298), 52.93 MiB | 10.35 MiB/s, done.
Resolving deltas: 100% (1208/1208), done.
Updating files: 100% (3870/3870), done.

# Copy setup files into models/research folder
%%bash
cd models/research/
protoc object_detection/protos/*.proto --python_out=.
#cp object_detection/packages/tf2/setup.py .

# Modify setup.py file to install the tf-models-official repository targeted at TF v2.8.0
import re
with open('/content/models/research/object_detection/packages/tf2/setup.py') as f:
    s = f.read()

with open('/content/models/research/setup.py', 'w') as f:
    # Set fine_tune_checkpoint path
    s = re.sub('tf-models-official>=2.5.1',
               'tf-models-official==2.8.0', s)
    f.write(s)

# Install the Object Detection API (NOTE: This block takes about 10 minutes to finish)

# Need to do a temporary fix with PyYAML because Colab isn't able to install PyYAML v5.
!pip install pyyaml==5.3.1
!pip install /content/models/research/

# Need to downgrade to TF v2.8.0 due to Colab compatibility bug with TF v2.10 (as of 10/2023)
!pip install tensorflow==2.8.0

# Install CUDA version 11.0 (to maintain compatibility with TF v2.8.0)
!pip install tensorflow_io==0.23.1
!wget https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x86_64/cuda-ubuntu1804.pin
!mv cuda-ubuntu1804.pin /etc/apt/preferences.d/cuda-repository-pin-600
!wget http://developer.download.nvidia.com/compute/cuda/11.0.2/local_installers/cuda-re
```