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+ Code + Text
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Q

!nvidia-smi

{x} Thu Mar 2 19:18:07 2023

GPU Name		Persistence-M	Bus-Id	Disp.A	Volatile	Uncorr. ECC
Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage	GPU-Util	Compute M.
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						N/A

Processes:

GPU	GI	CI	PID	Type	Process name	GPU Memory Usage
ID	ID					
No running processes found						

```
[ ] !pip -q install --upgrade --no-cache-dir gdown
!pip -q install transformers
!pip -q install multilingual-clip
!pip -q install ftfy regex tqdm
!pip -q install git+https://github.com/openai/CLIP.git
!pip -q install pandas -U
!pip -q install arabic-reshaper
!pip -q install python-bidi
```

6.3/6.3 MB 76.3 MB/s eta 0:00:00
190.3/190.3 KB 19.1 MB/s eta 0:00:00
7.6/7.6 MB 108.1 MB/s eta 0:00:00
53.1/53.1 KB 5.5 MB/s eta 0:00:00

Preparing metadata (setup.py) ... done
Building wheel for clip (setup.py) ... done
12.2/12.2 MB 101.6 MB/s eta 0:00:00

```
[ ] !git clone https://github.com/ammarnasr/Multi-Lingual-Image-Captioning.git
!gdown --id 1sHQMEFOjI0TrJW0eE5diYWNM4xO0xRN
!unzip -qq /content/data.zip -d /content/Multi-Lingual-Image-Captioning
!rm /content/data.zip
```

Cloning into 'Multi-Lingual-Image-Captioning'...
remote: Enumerating objects: 173, done.
remote: Counting objects: 100% (173/173), done.
remote: Compressing objects: 100% (129/129), done.
remote: Total 173 (delta 95), reused 122 (delta 44), pack-reused 0
Receiving objects: 100% (173/173), 26.05 MiB | 19.25 MiB/s, done.
Resolving deltas: 100% (95/95), done.
/usr/local/lib/python3.8/dist-packages/gdown/cli.py:121: FutureWarning: Option `--id` was deprecated in version 4.3.1 and will be removed in 5.0.
warnings.warn(
Downloading...
From: <https://drive.google.com/uc?id=1sHQMEFOjI0TrJW0eE5diYWNM4xO0xRN>
To: /content/data.zip
100% 1.14G/1.14G [00:11<00:00, 103MB/s]

```
os [1] from os import listdir
from os.path import isfile, join
import shutil
import os
os.chdir('/content/Multi-Lingual-Image-Captioning')
os.getcwd()

def copy_ckpts():
    '''Copy Saved Checkpoints from Colab to drive/MyDrive/Multi-Lingual-Image-Captioning/checkpoints'''
    checkpoints_dir = './checkpoints'
    checkpoints_dir_drive = '/content/drive/MyDrive/Multi-Lingual-Image-Captioning/checkpoints'
    ckpt_files = [f for f in listdir(checkpoints_dir) if isfile(join(checkpoints_dir, f))]
    for ckpt_file in ckpt_files :
        src = join(checkpoints_dir, ckpt_file)
        dst = join(checkpoints_dir_drive, ckpt_file)
        shutil.copyfile(src, dst)
```

```
##### Edit The Parameters and run the code to start experiment #####
exp_args = ''

#create a class called demo args to store the arguments
class DemoArgs:
    def __init__(self):
        self.data = './data/embeddings/english_CLIP-ViT-B-32_embeddings.pkl'
        self.lang = 'english'
        self.out_dir = './checkpoints'
        self.output_prefix = 'english_exp_1'
        self.epochs = 30
        self.save_every = 3
        self.prefix_length = 10
        self.prefix_length_clip = 10
        self.bs = 40
        self.only_prefix = True
        self.mapping_type = 'transformer'
        self.num_layers = 8
        self.is_rn = False
        self.normalize_prefix = False

    ...
with open('args.py', 'w') as f:
    f.write(exp_args)

!python train_gpt.py
# copy_ckpts()

...
2023-03-02 19:26:29.692152: I tensorflow/core/platform/cpu_feature_guard.cc:193] This TensorFlow binary is optimized with oneAPI Deep Neural Network primitives. To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2023-03-02 19:26:30.578530: W tensorflow/compiler/xla/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'libnvi.so'. Make sure the library path is set for your current environment
2023-03-02 19:26:30.578632: W tensorflow/compiler/xla/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'libnvi.so'. Make sure the library path is set for your current environment
2023-03-02 19:26:30.578651: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Cannot dlopen some TensorRT libraries. If you get this warning, try setting the environment variable TF_TRT_ALLOW_DYNAMIC_LOADING=1
Data size is 40455
/usr/local/lib/python3.8/dist-packages/transformers/optimization.py:306: FutureWarning: This implementation of AdamW is deprecated and will be removed in v4.0.0. Use the new implementation by passing `new_implementation=True` or `tf=True` to the constructor.
  warnings.warn(
>>> Training epoch 0
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=3.22]
>>> Training epoch 1
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=2.85]
>>> Training epoch 2
english_exp_1: 100% 1011/1011 [09:28<00:00,  1.78it/s, loss=2.63]
>>> Training epoch 3
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=2.77]
>>> Training epoch 4
english_exp_1: 100% 1011/1011 [09:28<00:00,  1.78it/s, loss=2.43]
>>> Training epoch 5
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=2.37]
>>> Training epoch 6
english_exp_1: 100% 1011/1011 [09:28<00:00,  1.78it/s, loss=2.38]
>>> Training epoch 7
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=2.25]
>>> Training epoch 8
english_exp_1: 100% 1011/1011 [09:28<00:00,  1.78it/s, loss=2.29]
>>> Training epoch 9
english_exp_1: 100% 1011/1011 [09:28<00:00,  1.78it/s, loss=2.36]
>>> Training epoch 10
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=2.07]
>>> Training epoch 11
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.77it/s, loss=1.95]
>>> Training epoch 12
english_exp_1: 100% 1011/1011 [09:29<00:00,  1.78it/s, loss=1.88]
>>> Training epoch 13
english_exp_1: 100% 1011/1011 [09:30<00:00,  1.77it/s, loss=1.8]
>>> Training epoch 14
english_exp_1: 100% 1011/1011 [09:27<00:00,  1.78it/s, loss=2.02]
>>> Training epoch 15
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.77]
>>> Training epoch 16
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.63]
>>> Training epoch 17
english_exp_1: 100% 1011/1011 [09:20<00:00,  1.80it/s, loss=1.67]
>>> Training epoch 18
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.73]
>>> Training epoch 19
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.4]
>>> Training epoch 20
english_exp_1: 100% 1011/1011 [09:22<00:00,  1.80it/s, loss=1.34]
>>> Training epoch 21
english_exp_1: 100% 1011/1011 [09:20<00:00,  1.80it/s, loss=1.39]
>>> Training epoch 22
```

```
english_exp_1: 100% 1011/1011 [09:19<00:00,  1.80it/s, loss=1.54]
>>> Training epoch 23
english_exp_1: 100% 1011/1011 [09:20<00:00,  1.80it/s, loss=1.3]
>>> Training epoch 24
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.2]
>>> Training epoch 25
english_exp_1: 100% 1011/1011 [09:20<00:00,  1.80it/s, loss=1.45]
>>> Training epoch 26
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.05]
>>> Training epoch 27
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.12]
>>> Training epoch 28
english_exp_1: 100% 1011/1011 [09:21<00:00,  1.80it/s, loss=1.09]
>>> Training epoch 29
english_exp_1: 100% 1011/1011 [09:23<00:00,  1.79it/s, loss=0.973]
...
```

```
import inference_gpt
```

```
ckpt_path = '/content/Multi-Lingual-Image-Captioning/checkpoints/english_exp_1-029.pt'
inference_gpt.main(ckpt_path)
```

The Lang is english

100% |██████████| 338M/338M [00:01<00:00, 195MiB/s]

A girl and her horse are holding a fire '



Two puppies are wrestling in the grass.

Two puppies are wrestling in the grass.



Several people are looking at the orange fish in a

Several people are looking at the orange fish in a



A man fishes by a tree.

A man fishes by a tree.



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✓ 43s completed at 00:13

