gpt-2

# example code

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| import torch  from pytorch\_pretrained\_bert import GPT2Tokenizer, GPT2Model, GPT2LMHeadModel  import argparse  import logging  from tqdm import trange  import torch  import torch.nn.functional as F  import numpy as np  # OPTIONAL: if you want to have more information on what's happening, activate the logger as follows  import logging  logging.basicConfig(format = '%(asctime)s - %(levelname)s - %(name)s -   %(message)s',                      datefmt = '%m/%d/%Y %H:%M:%S',                      level = logging.INFO)  logger = logging.getLogger(\_\_name\_\_)  # Load pre-trained model tokenizer (vocabulary)  tokenizer = GPT2Tokenizer.from\_pretrained('gpt2')  model = GPT2LMHeadModel.from\_pretrained('gpt2')  #gpt-2 training would take ages. Since we're runing inference on a pretrained model instead, pytorch requires us to specify that with the .eval() function  model.eval()  model.cuda()  #a helper function that help make work predictions. you can ignore reading through it if you feel uncomfortable with the math.  def top\_k\_logits(logits, k):      """      Masks everything but the k top entries as -infinity (1e10).      Used to mask logits such that e^-infinity -> 0 won't contribute to the      sum of the denominator.      """      if k == 0:          return logits      else:          values = torch.topk(logits, k)[0]          batch\_mins = values[:, -1].view(-1, 1).expand\_as(logits)          return torch.where(logits < batch\_mins, torch.ones\_like(logits) \* -1e10, logits)  #a sampling function that takes in tokens and spits out predicted tokens.  def sample\_sequence(model, length, start\_token=None, batch\_size=None, context=None, temperature=1, top\_k=0, device='cuda', sample=True):      if start\_token is None:          assert context is not None, 'Specify exactly one of start\_token and context!'          context = torch.tensor(context, device=device, dtype=torch.long).unsqueeze(0).repeat(batch\_size, 1)      else:          assert context is None, 'Specify exactly one of start\_token and context!'          context = torch.full((batch\_size, 1), start\_token, device=device, dtype=torch.long)      prev = context      output = context      past = None      with torch.no\_grad():          for i in trange(length):              logits, past = model(prev, past=past)              logits = logits[:, -1, :] / temperature              logits = top\_k\_logits(logits, k=top\_k)              log\_probs = F.softmax(logits, dim=-1)              if sample:                  prev = torch.multinomial(log\_probs, num\_samples=1)              else:                  \_, prev = torch.topk(log\_probs, k=1, dim=-1)              output = torch.cat((output, prev), dim=1)      return output  sequence\_length = 100  number\_of\_samples = 3  context\_tokens = []  raw\_text = input("Model prompt >>> ")  while not raw\_text:    print('Prompt should not be empty!')    raw\_text = input("Model prompt >>> ")  context\_tokens = tokenizer.encode(raw\_text)  generated = 0  for \_ in range(number\_of\_samples):    out = sample\_sequence(        model=model, length=sequence\_length,        context=context\_tokens, batch\_size=512    )    out = out[:, len(context\_tokens):].tolist()    for i in range(512):      generated += 1      text = tokenizer.decode(out[i])      print("=" \* 40 + " SAMPLE " + str(generated) + " " + "=" \* 40)      print(text)    print("\n\n"+ "=" \* 80) |

# testing result

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| Model prompt >>> Who is Kyle Rayner? Kyle Rayner is  100%|██████████| 100/100 [00:11<00:00, 6.31it/s] 0%| | 0/100 [00:00<?, ?it/s]  *Output exceeds the*[*size limit*](vscode-file://vscode-app/c:/Users/PC/AppData/Local/Programs/Microsoft%20VS%20Code/resources/app/out/vs/code/electron-browser/workbench/workbench.html)*. Open the full output data*[*in a text editor*](vscode-file://vscode-app/c:/Users/PC/AppData/Local/Programs/Microsoft%20VS%20Code/resources/app/out/vs/code/electron-browser/workbench/workbench.html)  ======================================== SAMPLE 1 =================  =======================  a forty-six year-old Evangelical man living in Arizona. His wife  Adriane has three children and spent the past three years (and a half)  involved in marriage ceremonies and marriages. As a young man mom,  Kyle makes his living blogging about how the Church teaches you,  evangelistically. In the article, Kyle complains about  being upset with his wife all day long, with giving away  all her college scholarships, eating by herself, having sex  outside – all while being dominated by a male authority  ======================================== SAMPLE 2 ==================  ======================  a victim of a strange outbreak of part-time illness that  has cast the AshokaMuslim into a permanent discomfiting exile  and pursued a different sort of regular life.  Both Jason and Sho are all is once again lost to a single  narrative in which Kyle is seemingly in immediate danger  above all else. The guns from the academy and magical  search fund suggest somebody online may have already  evacuated the academy. There are new evidence that a  confrontation may have ensnared Kyle as a physical threat to a  uthorities and  ======================================== SAMPLE 3 ============  ============================  a vegetarian who is one of my favorite ghouls in history.  On to the meat. In my head, I have been taken one step  further with Dan Ghomeshi's suggestion to become a meat  eater; but, as it turns out, I doubt that a joker would  ever make that suggestion now. I got to know Markman  because fanciful food is best, so a villager named  McIndoe shared the same "just on my own" idea with me.  ======================================== SAMPLE 4 ==========  ==============================  a Filipino-American house-owner with just $5,000. He's owned  a tiny tiny, tiny ranch here for 6+ years. He spends almost  every morning by phone calling the couple to see if he can  help them, then eager and eager to hear back about the  national pastime of his former playdate.  Terra #2 – Friday: Fiesta Semifinal  For making the pastime run successful, sometimes you have  to fight against the transit system. Monitors  ======================================== SAMPLE 5 =======  =================================  mentioned in the most recent episode of On the Run.  Background  During his quest to escape his final shoot outs,  Kyle's father, the wayward lieutenant in disguise,  accidentally got Rayner in harm's way and Krillin  counter-programmed his body to more Ultron armor  (kill the aliens). The sole body in charge of making  those bodies has been stripped of his genetic code,  and the desert knows that it is time for the start of an alien  invasion.  Kyle had  ======================================== SAMPLE 6 ==========  ==============================  ========================================  SAMPLE 512 ========================================  a Teddy Bears  fan that has watched the team play almost every game. During those challenges  there was cornerback Darrelle Revis who flew around releasing kicks, which he had  been asked to do while hustling downfield. One of Rayner's favorite yells was  when he saw that running back Dion Lewis dropped a ball early on. Rayner recognized  Lewis from the sidelines and they won't talk about it later on. After a timeout,  there was a replay where Thomas Woodhead  was likely to do  another |