

PROJECT INTRODUCTION



OUR PROGRAM:

- Utilization of machine-learning algorithms to generate posts using MSJH Confessions responses
- Interesting insight into how exactly an AI would interpret student responses
- Meshes together programming knowledge accumulated over the year
- Done in Python
- Use Python to create a script to utilize Facebook API

OPEN AI'S GPT-2

- ❖ Open-source neural network machine learning artificial intelligence created by OpenAI in February 2019
- ❖ GPT-2 is a large transformer-based language model with 1.5 billion parameters, trained on a dataset of 8 million web pages
- ❖ GPT-2 is trained with a simple objective: predict the next word, given all of the previous words within some text.

*GPT-2 generates
synthetic text
samples in response
to the model being
primed with an
arbitrary input*

SYSTEM PROMPT
(HUMAN-WRITTEN)

Recycling is good for the world.

NO! YOU COULD NOT BE MORE WRONG!!

MODEL COMPLETION
(MACHINE-WRITTEN,
25 TRIES)

Recycling is NOT good for the world. It is bad for the environment, it is bad for our health, and it is bad for our economy. I'm not kidding. Recycling is not good for the environment. It is destructive to the earth and it is a major contributor to global warming. Recycling is not good for our health. It contributes to obesity and diseases like heart disease and cancer. Recycling is bad for our economy. It increases the cost of a product, and in turn, the price of everything that is made with that product. Recycling is not good for our nation. We pay a tremendous price for the privilege of having the world's most advanced and efficient recycling system. Recycling is a huge, colossal waste of time, energy, money, and resources. And THAT is why we need to get back to basics and get back to basics in our recycling efforts. One of the best ways to start is to look at the process of creating a paper product. When you make a paper product, it is basically a long chain of materials. Everything from the raw materials (wood, cardboard, paper, etc.), to the reagents (dyes, solvents, etc.) to the printing equipment (chemicals, glue, paper, ink, etc.), to the packaging, to the packaging materials (mercury, chemicals, etc.) to the processing equipment (heating, cooling, etc.), to the packaging materials, to the packaging materials that are shipped overseas and to the packaging materials that are used in the United States. Each step along the way creates tons of waste that we constantly have to clean up. The process of making a paper product is a very wasteful one. But the end result is something that all of us need to consume. And if we want to keep the recycling process running efficiently, then we really need to think about each and every step that goes into making a paper product.

CONFESSIONS FINE TUNING



- ❖ Wanted to use data from mission confessions to train our own model through GPT-2
- ❖ Through google colab (using their GPU) - trained our own model where we downloaded the model
- ❖ Used that model through python to locally generate mission confessions text

TRAINING MONTAGE

```
Loading checkpoint models/124M/model.ckpt
INFO:tensorflow:Restoring parameters from models/124M/model.ckpt
```

```
Loading dataset...
100% [██████████] 1/1 [00:00<00:00, 7.94it/s]
dataset has 1053411 tokens
```

```
Training...
[10 | 28.30] loss=3.00 avg=3.00
[20 | 50.73] loss=2.92 avg=2.96
[30 | 73.90] loss=2.88 avg=2.93
[40 | 97.55] loss=3.17 avg=2.99
[50 | 120.72] loss=3.26 avg=3.04
[60 | 143.80] loss=2.92 avg=3.02
[70 | 167.11] loss=2.82 avg=2.99
[80 | 190.45] loss=2.67 avg=2.95
[90 | 213.67] loss=2.59 avg=2.91
[100 | 236.90] loss=2.65 avg=2.88
[110 | 260.17] loss=2.88 avg=2.88
[120 | 283.48] loss=2.50 avg=2.85
[130 | 306.81] loss=2.71 avg=2.84
[140 | 330.13] loss=2.73 avg=2.83
[150 | 353.45] loss=2.33 avg=2.79
[160 | 376.76] loss=2.62 avg=2.78
[170 | 400.06] loss=2.67 avg=2.77
[180 | 423.34] loss=2.49 avg=2.76
[190 | 446.59] loss=2.66 avg=2.75
[200 | 469.83] loss=2.57 avg=2.74
```

```
***** SAMPLE 1 *****
```

```
that my voice is very loud and I have a small voice problem. What should I do?<endoftext>
```

```
<startoftext>I'm actually a little disappointed in myself that I'm doing everything in my power to fail every college I think I know. At this point in my career, I know my parents understand and I see how it's going to hurt as so
```

```
<startoftext>Is it just me or are y'all so dumb? I've been thinking about this guy for a long time now and it's always nice to take that opportunity to be myself, but I realized that just doesn't make it ok and I'm still not sure
```

```
<startoftext>y'all have a bunch of really shitty friends at school but like hell not everyone wants to know who their friends are<endoftext>
```

```
<startoftext>I always find myself feeling depressed because I've always been the one that's depressed because I had this really good life and then i forget that I'm depressed because I have no life?<endoftext>
```

```
<startoftext>I don't think I deserve it. I am an asshole for giving it to my parents and I am so ashamed to be so pathetic on my own. I've learned too late, that I don't have the courage to say anything to my parents about this an
```

```
<startoftext>Hi Guys,
```

```
I just wanted to put this in a non-fiction context but some people are just going to start asking questions on the internet for months and months on end. I was just wondering if you could please post the answers to my questions belo
```

```
TL;DR;
```

```
Hey, all of you. You know the one person that thinks that they can get out of shit on this so easily, but that doesn't mean that they can't get it back. You guys are the reason why I want to live. I want to make this world a better
```

```
I know you'll be lonely and lonely again. I know you will be lonely and lonely again. But I know that once you've been there for a while, you'll be happy in every moment with you and I don't mean to get any hurt. But if you'll liste
```

```
I know I'm just going to say this. Please don't assume that you have the ability, strength, or ability to go to other places. There are people out there who are better than you, who are smarter than you, that you will be able to sta
```

```
sess = gpt2.start_tf_sess()
```

```
gpt2.finetune(sess,
    dataset=file_name,
    model_name='124M',
    steps=2000,
    restore_from='fresh',
    run_name='run1',
    print_every=10,
    sample_every=200,
    save_every=500
)
```

TRAINING MONTAGE

Users > joshuadiao > Brucker.py > ...

```
1  #slightly altered code from https://github.com/minimaxir/gpt-2-simple
2  import gpt_2_simple as gpt2
3
4  model_name = "124M"
5  # model is saved into current directory under /models/124M/
6  #gpt2.download_gpt2(model_name=model_name) #need to run only once. comment out once done.
7  sess = gpt2.start_tf_sess()
8  gpt2.load_gpt2(sess)
9
10 gen_file = 'gpt2_gentext.txt'
11
12  gpt2.generate_to_file(sess,
13      length=250,
14      destination_path=gen_file,
15      temperature=0.7,
16      #prefix='Justin Xiong',
17      prefix='<|startoftext|>',
18      truncate='<|e|',
19      nsamples=20,
20      batch_size=10,
21      include_prefix=False
22  )
23
```

HIGHLIGHTS FROM TRAINING

"I'm really into this one guy. I like him and I've never told him, but I do feel like I kinda like him, and it's really nice knowing he liked me back. I think he likes me too. I don't know if it's his friendliness or some way of his and we're always talking and we talk but I can't really tell who is who, because in that moment I feel so alone when I'm alone. The reason I don't tell him is because I don't like how he interacts with the girls and I don't realize how close we all come and see each other. So it's like if I wanted to be that close to him for some reason I wouldn't tell him. I don't know if that helps, and I feel like that always hurts us, but I wish I could just talk to him more."

FIRST "MSJ CONFESSIONS" TYPE POST

- Love life
- Loneliness
- Wanting to talk to them but never will

"I'm a junior taking 10 AP courses. I have 6 B's and 4 Cs. What do I have left to do?"

- Relatable tbh

"i really like kuei but she always makes me feel stupid as fuck and i dont wanna have to be the one to convince her not to update my tests. maybe if i started ranting now instead of replying to confession #13663 i would show how bad of a grade i am taking, and how much i'm actually taking, idk."

- First mention of teacher
- Replying to fake confession
- Grammar could use some work

HIGHLIGHTS CONT.

"Is it bad that I'm a pretty average loner, but I like to experiment with new things? Like drugs? Anyway, this is very fun! ;)"

- *This one is just funny*

"I just got back home from a grueling 12 week pre-college review in which I completely blew it, I got as much sleep as I wanted, and was able to talk for an extended period about what an amazing experience it'd be."

"Brucker is the sweetest teacher ever"

^^ REAL AI GENERATED CONFESSION

HIGHLIGHTS CONT.

"Do any of you guys find "Among Us" hilarious? My friends always joke around with me about being among friends, but I myself don't know if that is a thing. I just want to be friends with someone after school, but I don't know if it's funny to be among a group of people after school. "-

"i just want a girlfriend. or a boyfriend. or a sister. or a dad. or a girlfriend. or a brother. or a aunt. or a sister. or a fart. i really really really want a girlfriend, and i don't know if i can bring myself to even that. goddamn sorry."

"MSJ football is great. I love the atmosphere, the fans, and the passion for MSJ that makes up MSJ for short periods. I love MSJ, and I know everyone else in Fremont loves MSJ too."

HIGHLIGHTS CONT.

"How is Carattini class so easy?"

"I am a Junior and honestly haven't had any real Obsessions. I have:

Reading

Music

Cards

My Little Pony

My Little Pony: Friends

My Little Pony: Friends Forever

My Little Pony: Friends Forever ends here

And Friends Forever never really made me feel anything but...

Happily, I just can't anymore. I can't stop f[REDACTED]ing winking at screens, watching spoiled brony princess videos, spliffing around in the fans while watching My Little Pony: The Furry Planet, spending hours on fancon but at the same time constantly checking Instagram, playing video games, going to prom, doing hw for my senior yr, pretending to be a gong expert, pretending to walk around in pony tails hoping that senior yr wont notice me..."

FACEBOOK



- ❖ Wanted to use the confessions generated from our model to be uploaded on facebook without doing it manually
- ❖ keeps track of confession number with a count.txt file
- ❖ Opened a MSJ Confession Bot facebook page
- ❖ Generated an access key - converted access key to a permanent (60 day one)
- ❖ then put the key into that code
- ❖ Installed necessary libraries like pip and requests

Code

```
import requests
#Your Access Keys

messageList = []
with open('gpt2_gentext.txt') as f:
    messageList = f.readlines();

page_id_1 = 110694251655224
facebook_access_token_1 = 'EAAN9acW6'
```

```
msg= ""

i =0
while i< len(messageList):
    if(messageList[i] == "=====\n") :
        i+=1
        continue

    msg = "#" + str(count) + ": " + "\"" + messageList[i];

    while (i+1 < len(messageList) and messageList[i+1] != "=====\n"):
        msg += messageList[i+1];
        i+=1

    msg+= "\""
    i+=1
    post_url = 'https://graph.facebook.com/{}/feed'.format(page_id_1)
    payload = {
        'message': msg,
        'access_token': facebook_access_token_1
    }
    r = requests.post(post_url, data=payload)
    print(r.text)
    count+=1

count_write = open("count.txt", "w")
count_write.write(str(count))
count_write.close()
```

Live demonstration

MOVING FORWARDS



- ❖ Wanted to use the confessions generated from our model to automatically uploaded on facebook
- ❖ Figure out a way to create scheduled post rather than all at once
- ❖ Train the model more with more data to provide more accurate results