Jeffrey Tharsen tharsen@uchicago.edu

“Natural Language Processing with GPT-3” RCC Workshop

Summer 2021

***Sources:*** [**https://github.com/rcc-uchicago/NLP\_with\_GPT3**](https://github.com/rcc-uchicago/NLP_with_GPT3)

1. **Introduction**
   1. ***What is a transformer, and how does GPT-3 work?***

*(API only @ present, GPT-2 is available on Midway)*

**"The GPT-3 Architecture, on a Napkin"**

https://dugas.ch/artificial\_curiosity/GPT\_architecture.html

* 1. ***“masking” 🡪 iterative token prediction***

1. **Using GPT-3 : Basics**
   1. **Logging in to OpenAI**
   2. **The OpenAI "Playground" UI**

**vs.**

**Running in Python or Curl with an API Key (“< >”)**

* 1. **How the results are generated & an NSFW warning**
  2. **What all can GPT-3 do? Examples page:**

<https://beta.openai.com/examples>

1. **Generating Text from a Custom Prompt using GPT-3**
   1. **The 4 models: Ada, Babbage, Curie and Davinci**  
      <https://beta.openai.com/docs/engines>
   2. **Examples of Generative Text using each of the 4 "Engines" (models) :**

<https://beta.openai.com/playground?model=ada>

* 1. **Generative text: Using custom parameters (temperature, Top P)**

1. **Classification using GPT-3** <https://beta.openai.com/docs/guides/classifications>
   1. **Sentiment analysis classification: Tweet Classifier**

<https://beta.openai.com/playground/p/default-adv-tweet-classifier>

1. **Summarization using GPT-3** <https://beta.openai.com/docs/examples/summarization>
   1. **Default tl;dr Summarization ("Summarization for a 2nd-Grader"):**

<https://beta.openai.com/playground/p/default-summarize>

1. **Chat (chatbots)**
   1. **Default chatbot**

<https://beta.openai.com/playground/p/default-chat>

1. **Question-Answering (Q&A)**
   1. **Default Q&A**

<https://beta.openai.com/playground/p/default-qa>

1. **Translation: English to French**
   1. **Default translation**

<https://beta.openai.com/playground/p/default-translate>

1. **Evaluating GPT-3 : Performance and Results**
   1. **Human-based evaluation (hand-coding)**
   2. **Programmatic evaluation (e.g. SQuAD)** [rajpurkar.github.io/SQuAD-explorer](https://rajpurkar.github.io/SQuAD-explorer/)
2. **GPT-3 and the Future of NLP / NLU**