Project Proposal LIGN167

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## What task/problem are you trying to solve?

I want to create simple images with GPT-3 without intensive retraining and adjustments. The idea is that GPT-3 can create pixel matrices as they can also be represented in text form. I want to assess how easy it is to create different media with such a big language model which has been mostly trained with natural language. Is few-shot training enough to create meaningful pixel matrices?

I want to start with creating simple greyscale images like in the MINST dataset. Depending on the results I can move on to more complex pictures.

I have done a simple experiment in the playground and have attached the results at the end.

## How are you planning to solve it? If relevant, what data will you use? What model will you use? How will your model be used to solve the problem?

I want to use GPT-3 with as little adjustment as possible as I want to show how strong GPT-3 is. To begin I can use the MINST dataset for (few-shot) training.

I will also have to do more research on the details and science behind creating images. And I will look into how DALL-E 2 uses GPT-3 to create images and compare it to my project.

For presentation purposes, I will also transform the results of my experiments into a real image.

## How will you evaluate whether you succeeded? Do you have a quantitative measure of whether you succeeded (for example, accuracy on the test set)? If not, how will you objectively evaluate whether your approach worked?

If I find an “easy” way to create images with GPT-3 I have succeeded. It is hard for me to quantify the “easy” now because I am not sure what GPT-3 is capable of. One goal is to create gray-scaled images like the MINST dataset with GPT-3. Also, I would like to add new findings which have not already been discovered while creating models like DALL-E 2.

## Experiments trying to create black-and-white image pixels of digits

Example without any prompt:

Graphical user interface, text

Description automatically generated with medium confidence

Example with the prompt and wanted result:

Table

Description automatically generatedTable

Description automatically generated

This example used the same prompt but did generate a wanted result: Text

Description automatically generated with medium confidence