

IS 784 Deep Learning for Text Analysis

Assignment 4 (Deadline 27 June 2021)

In this final assignment, you are going to implement a natural language generation task using a pre-trained transformer architecture.

GPT-2

For this assignment, you will use the tiny Shakespeare dataset we used in the labs. You can use the provided dataset from the lab directly or you can download it from the link provided at the lab.

Then you will get the pre-trained GPT-2 model from the transformer library and fine-tune it. Your network output is expected to generate text similar to Shakespeare's works. For this purpose, you can explore the 'huggingface.co' or other examples online. You can use scripts provided on huggingface transformer examples on GitHub to finetune your data.

You are expected to show and explain your steps clearly. Save your work as a single notebook file.

As mentioned in the transformer documentation, your training should take around half hour to train the network at a single K80 GPU. (GPU's provided by collab have a similar capability to K80 or it provides K80 GPU)

Comment on the results.

Tip: I suggest you to check huggingface trainer documentation¹

Tip2: If you came across memory problems at GPU you can try to use `per_device_train_batch_size` parameter to adjust your batch size.

Deliverables and Late submission

You are expected to submit an '*.ipynb' file. Your file name should contain your student number. Add your name and student number inside your document as well. Your code blocks should be adequately explained.

Late submission is accepted until 29 June 2021 with a -5 points penalty for each day.

¹ https://huggingface.co/transformers/main_classes/trainer.html