[F23] PracticalMLandDL
Project Intermediate Report #3

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1. **Roman Makarov**
   o.makarov@innopolis.university
2. **Adela Krylova**
   a.krylova@innopolis.university

Topic: ~~Real or Not? NLP with Disaster Tweets~~ Generating Disaster Tweets using GANs

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GitHub: https://github.com/rmakarovv/pmldl_project
Collab:
Training GPT-2 for Disaster Tweets generation
Training BERT for Disaster Tweets recognition
Combined models

Intermediate progress:
- We studied techniques on passing loss to pre-trained GPT2
- We changed the discriminator model, since it has a bug in one of the files that it requires, so we utilized keras_nlp model to replace it
- We redesigned our models, so that they are now able to learn in a GAN-like form from each other

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Preliminary results:
- We managed to run a couple of iterations of continuous learning
- We encounter some issues during training, like inability to directly propagate errors to generators, so we used a slightly different approach to improve it.

Tasks distribution:
Adel worked on the generator, while Roman worked on the classifier part. Both codes were then combined. Roman rewritten the Bert model, to solve compatibility problems. Combined models can now be trained together.

Plans for next weeks

Optimize GPU and RAM consumption.
Fix problems with loss propagation in the GPT, and to find a more
efficient way for the training.

Examples of generated tweets by our fine-tuned GPT-2:

The Best Moments After Hiroshima: The Great Con Game
It all started when a young Japanese man named Kenji Higashikawa
escaped captivity at Amatsu... via YouTube
Photos: The Sex Workers Forced To Be Hunted The World Over **[BERT: Real Tweet]**
——————————————————————————————————
Obama Declares Disaster for Typhoon-Devastated Saipan **[BERT: Real Tweet]**
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MTV crews on motorcycles hooting and a truck in a tree fall off a
cliff..??
So you feel guilty when you don't get by because you didn't give your
all? **[BERT: Fake Tweet]**
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A dog attack dog attack that injured a school bus last month has been
caught on tape. FOXNewYork
Accident fatality rate ratio ratio ratio bicyclist fatalities percent
'He is so fast.' I asked what he wa **[BERT: Fake Tweet]**