Comparative analysis of my projects

1 Jokes apart: machine learning and explainable artificial intelligence for humor generation

LLMs are still not so good at humor generation. This project will focus specifically on the humor slice and try to find a good metric of quality for it.

1. *The impact:* the project helps to improve the quality of LLMs in generation humor texts.
2. *The consistency:* the main challenge is how to construct a metric to estimate the quality of humor.
3. *The novelty:* Generally, it is not a very well-researched topic, and I can focus on the Russian language.
4. *My contribution:* provide a metric to estimate the quality of humoristic text.
5. *The project focuses:* the quality of humoristic texts can be estimated and improved.

2 Spot the bot: semantic paths of natural language texts

The main idea is that the natural language texts have some specific patterns that allow to classify texts as LLM-generated and human-generated.

1. *The impact:* the project allows to detect cheating in writing assignments and estimate whether the internet page was AI-generated or not.
2. *The consistency:* the practical solution of LLM-generated text includes an implementation of a special watermark algorithm.
3. *The novelty:* most of the researches focus on English corpus of text, I can focus on Russian texts.
4. *My contribution:* realisation of watermark algorithm on Russian corpus of texts.

5. *The project focuses:* LLM-generated texts still have some patterns that allow us to detect them.

3 LLM as universal interface

The idea is to train LLM how to choose and use some basic classification model based on the text description of the problem.

1. *The impact:* using ML models still requires some basic skills of using Python, even for the fit-predict interface. LLM can potentially provide an interface for users on how to solve simple classification tasks without using Python.

2. *The consistency:* this is mostly about business, but generally the problem of transfering text description into model parameters is still uncovered and can be potentially solved in a more scientific way than just good propmt choosing.

3. *The novelty:* I can't find any good example of such an interface.

4. *My contribution:* a simple implementation of this interface, based on tg-bot, for instance.

5. *The project focuses:* a text prompt is enough to describe a simple ML model.

4 Resume

The project *Jokes apart: machine learning and explainable artificial intelligence for humor generation* has the highest priority since. It is fun and looks interesting for me. I believe that the problem can be solved and spent a reasonable time. I also have some experience creating metrics for LLM models and believe that this experience will help me with this project.