

## **Master's Thesis Topic: Detection of LLM-generated Texts**

### **Background**

Transformer-based AI systems have made great progress in areas such as text processing and comprehension. These deep learning models enable the generation of texts and form the basis of modern language models (LM). The rapid development of recent years has produced large language models (LLMs) such as ChatGPT, Gemini and VICUNA-13B. These can be used as intelligent chatbots in customer service or as QA systems. They also enable the creation of software source codes, speeches or textual summaries. In addition to the numerous advantages and possibilities, there are various new challenges, such as determining whether a text was written by a human or a machine. One manifestation of this problem can be seen in education. Teachers find it difficult to recognize whether texts were written by their students themselves or generated by an LLM.

This is where the master's thesis comes in. As part of the master's thesis, an overview of the existing methods for recognizing LLM-generated texts is to be compiled. The different existing approaches will be compared and discussed. Furthermore, an AI-supported system for the recognition of LLM-generated texts (e.g. product review texts) will be developed as part of the master's thesis.

### **Potential Scope for the Thesis**

- Create an analysis of the literature on the different methods and processes of LLM-generated text detection using machine learning
- Develop datasets for training and testing
- Develop a prototype of a detection system for LLM-generated texts using machine learning techniques and test it against some hand-crafted example cases (preferably in Python)
- The thesis can be written in English or German

### **Your profile**

- You are a student in a scientific or IT-related field
- You have a good background in statistics, data science or quantitative methods
- You have some experience in Software Development (Python is a plus)
- You have some first practical experience with machine learning (NLP is a plus)
- You are data-driven, self-motivated, and curious about learning new things

### **Your benefits**

- A great office in the heart of Berlin (incl. goodies such as a kitchen to cook lunch and free Mate)
- Work from wherever you want
- Possibly employed as a working student
- Work with a modern tech stack in a young and diverse Team
- Long-term opportunities in a growing business

### **About Trustami**

Trustami is a technology startup in the heart of Berlin. Trustami offers online vendors to leverage their existing reputation and reviews and thus help to create trust in e-commerce. The company was founded by TU-Berlin graduates and post-docs and still employs some research products focused on using machine learning to create safer environments on the web. An example research project in cooperation with TU-Berlin is SOFIE, which aims to detect fake online reviews.