

# GUIDE TO GETTING GOOD UHHGPT RESULTS

#### **ABSTRACT**

This document provides a compact guide to using UHHGPT, the University of Hamburg's version of ChatGPT, and highlights its strengths, risks, and limitations. It explains how the model works, possible biases and the limits of data quality, as well as the importance of reflective use in the higher education context. In addition, it points to ethical, legal, and ecological aspects of AI use. Finally, it offers guiding questions to support individual decision-making about whether using UHHGPT is appropriate in a given situation, and it provides tips for formulating effective prompts.

**AUTHORS:** Gunda Mohr, Gabi Reinmann, Martin Semmann

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## **ESSENTIAL BACKGROUND KNOWLEDGE**

For efficient use of UHHGPT, it is helpful to be aware of a few aspects in advance:

- UHHGPT is a language model that strings together words and short character sequences
  (= tokens) based on probabilities. This means that results are not reproducible and the
  chatbot (UHHGPT) cannot logically distinguish between right and wrong. In this sense,
  UHHGPT resembles a parrot that imitates language patterns without understanding their
  content.
- 2. The **data** used to "train" the chatbot comes primarily **from the internet**. Accordingly, the chatbot does not "know" the contents of non-digital sources. In addition, there are biases and distortions on the internet, as well as fake news and stereotypical response patterns that were unintentionally included in training and can therefore also be reflected in the results.
- 3. Humans have "trained out" undesired results according to certain specifications so that the chatbot no longer outputs them. However, this kind of **censorship / content moderation**, which is intended, among other things, to protect against toxic content, also leads to new distortions, biases, and omissions.
- 4. The chatbot's training data is **not up to date**. For example, the chatbot cannot provide correct statements about events that took place only a few months ago.
- 5. The model was **trained primarily on English-language texts**. Although the system can generate responses in multiple languages, including German, the quality of its German-language outputs is partly based on translation and is prone to errors in technical terminology or language-specific nuances. This can lead to inaccuracies, especially for technical or rarely used terms.
- 6. The chatbot is **not a database** like bibliographic databases, in which books are assigned to specific subject areas. Literature references generated by UHHGPT are often general classics or frequently cited sources, but they are neither reliable nor complete. Other tools, rather than UHHGPT, should therefore be used for literature searches. The State and University Library (Staats- und Universitätsbibliothek Hamburg) and the subject libraries at Universität Hamburg offer information, advising services, and training sessions on literature search and information literacy.
- 7. UHHGPT takes the **course of the current chat** into account when generating its responses, which can be both helpful and detrimental. The number of tokens grows with every message; this increases costs and slows processing. Superfluous or irrelevant information in the chat history can impair answer quality. For longer question—answer sequences, it is therefore advisable to start a new chat with more focused information.
- 8. The **number of tokens** that UHHGPT can process at the same time is **limited** and depends on the respective model. For longer inputs or extensive chat histories, only part of them may be taken into account. This is, for example, also the reason why the translation of shorter texts usually produces good results, whereas the translation of very long texts tends to be less useful.

- 9. For data protection reasons, UHHGPT does not store user inputs and cannot learn in a personalized way across multiple sessions. Accordingly, UHHGPT does not adapt over time to individual needs or to the specific framework conditions at Universität Hamburg. Another consequence of this lack of storage is that users are personally responsible for backing up important content from the chat history elsewhere if they want to reuse it later.
- 10. Because the "freely" available training data for chatbot training is largely exhausted, no rapid improvements in quality are to be expected. In fact, training on low-quality data or on AI-generated texts can even lead to a deterioration in answer quality.

## **DECISION TO USE UHHGPT**

Whether using a chatbot is helpful or not depends on several factors. If the following guiding questions can be answered with yes, the use of a chatbot can be beneficial; if some or all answers are no, the use of a chatbot is not advisable:

QUESTION	YES	NO
Does it <b>not</b> matter significantly whether the chatbot's results are right or wrong?		
Does my input contain <b>no</b> sensitive or personal data?		
Is my input free of copyrighted works?		
Is it likely that the chatbot's training dataset contains high-quality and suitable information for my question?		
Am I able to judge the correctness and quality of the chatbot's response myself?		
If my own knowledge is insufficient, do I have other options to check the quality of the chatbot's response, and the time needed to do so?		
Is the damage caused by a factually incorrect answer from the chatbot limited and, if it occurs, can it be remedied?		
Am I willing to take responsibility for the results?		

Reflective use of AI also includes engaging with social, legal, and ethical questions, for example with respect to individual development of skills and personal autonomy, data protection and copyright, risks of misuse, and the working conditions of people in the Global South who are involved in training AI. Finally, it is important to use resources responsibly, since the energy and water consumption involved in training and operating large AI models is extremely high.

### **STRENGTHS AND RISKS**

UHHGPT shows its **strengths** in university teaching and learning in particular when it does not matter significantly whether the output is right or wrong—for example, because AI is being used here as part of individual development of skills or to vary and enrich human work processes. Here are a few examples from the <u>Prompt Workbook</u>:

- utilizing the chatbot as a text-based game to "consider different perspectives",
- using the chatbot as a "reverse thinking coach" to find new courses of action,
- thinking through an issue with the chatbot as a "questioning coach",
- preparing for discussions by using the chatbot as an "advocatus diaboli".

In some cases, the use of UHHGPT is fundamentally and directly associated with **high risks** and should therefore be avoided. These include, for example:

- using UHHGPT to assess student work, since the chatbot does not produce reliable results and the consequences of grading and assessment can be far-reaching,
- "shortcuts" in learning during the early stages of a degree program, when the goal is to build a solid knowledge base that is otherwise missing later on, making it impossible to use AI in one's own discipline with critical judgment,
- developing content with UHHGPT when no reliable options exist to verify the outputs, although their correctness is highly relevant.

# **FORMULATING PROMPTS**

A prompt is the specific text input or request that users (e.g., students, staff, or instructors) address to the AI model. The prompt serves to activate or deliberately steer the system in order to obtain the desired information or results.

For prompts, the same applies as for other task descriptions: the better the prompt is formulated, the better the result. In terms of content, the prompt should include all the information needed to solve the task. This includes, for example:

- the role that UHHGPT should take on,
- the context of the task,
- the specific task and its goal,
- the individual work steps,
- the target audience for the result,
- relevant conditions and constraints,
- the desired format, length, and style of the result,
- if applicable, an example that illustrates the desired result.

Regarding the form of the prompt, the following can be helpful:

- formulate the request very precisely and clearly,
- submit the request in English,
- separate text sections within the prompt,
- use positive phrasing,
- for complex tasks, work with several prompts in sequence instead of entering too much at once,
- if applicable, continue working in a new chat in a focused way using the intermediate results,
- ask follow-up questions and, for example, ask for optimization of the result.

Examples of prompts can be found in the Prompt Workbook (<u>German version</u> / <u>English version</u>), which can serve as inspiration for developing your own prompts.