Guidelines for Instructors Regarding AI in University Education
at Tokyo University of Foreign Studies

1. Background

ChatGPT, an AI (artificial intelligence) text generation system developed by OpenAI, was released in November 2022. It can answer questions in fluent natural language based on a vast amount of learning data, and can also create summaries and outlines in addition to generating text. It is widely accessible on the web and can be used in a conversational format, leading to explosive growth in its usage and having a significant impact on university education. This "Guideline" aims to provide a broad guideline for the use of AI in educational settings at this university, taking into account machine translation tools such as DeepL as well as text generation AI such as Bing Chat, with a focus on ChatGPT and similar text generation AI.

Please note that the contents of this "Guideline" reflect the current situation, taking into consideration that ChatGPT is still under development and various services that incorporate ChatGPT or other conversational text generation AI (such as Bing Chat) have been released. It is also important to note that this "Guideline" is not intended to provide guidance for academic evaluation purposes.

2. How AI Generates Text

AI text generators work based on large language models (LLM). LLMs are trained on a massive amount of natural language text using deep learning, which predicts the most likely words to follow a given sequence of words as input. This input is called a prompt, and if a partial sentence is input as a prompt, the AI can complete the sentence by predicting the most likely words to follow. It is also possible to input a question asking for an explanation of something, and the AI can output a highly probable sentence that answers the question. However, even with the same question, the output answer may differ due to subtle differences in the prompt, such as the position of a comma. It is also known that the accuracy of the answer can vary depending on the prompt, and prompt engineering, which is a method for obtaining highly accurate answers, is attracting attention.

However, the text generated by AI is based on the results of machine learning from given language data, so it is not necessarily accurate all the time. It has also been pointed out that undesirable expressions may be included in the output. Therefore, in new AI systems, machine learning (reinforcement learning based on human feedback) has been introduced to encourage the selection of more desirable responses. Based on human evaluation according to the 3H criteria (helpful, honest, harmless), the multiple candidate responses that the system is attempting to output are ranked in the order of desirability. With these improvements, the overall accuracy of text generation AI is improving every day, but since it is not necessarily possible to obtain complete answers or avoid mistakes, users need to be mindful of appropriate use.

3. Limitations of AI Text Generation

There are several limitations to AI text generation that are known:

1) AI may provide incorrect answers, even if they are different from the facts. It is always necessary to check the accuracy of the information by returning to reliable sources when considering AI responses. Additionally, AI may have difficulty in certain fields, such as providing inaccurate answers to mathematical problems.

2) AI responses may contain potential biases or errors. Since AI is trained based on data found on the internet, there is a possibility that biases and errors found on the internet may be inherited by AI responses. Additionally, the unconscious biases of evaluators may also affect AI responses during the reinforcement learning process.

3) In the case of ChatGPT, its knowledge is based on data learned from the internet up until September 2021, and it cannot answer questions about events that have occurred since then. However, Bing Chat is connected to the internet and therefore, can provide answers about the latest events.

4) ChatGPT cannot display the sources used for its responses, whereas Bing Chat can display the internet sources used for its responses.

4. Guidelines for the use of AI in university education

AI is undoubtedly a powerful tool for assisting students in writing, despite its limitations mentioned above. ChatGPT (or various other AIs that may emerge in the future) seems to have become a tool that students will be expected to master when they enter society. Therefore, in universities, it is necessary to educate students on appropriate usage and ways of thinking in the context of learning, rather than limiting their use. It is important to provide a balance between the philosophy and practice of educating students on the appropriate and effective use of AI while ensuring that AI use does not deviate from the primary purpose of university education, and that it helps to enhance students' critical thinking skills.

As for the use of AI in individual classes, the instructor should be allowed to determine whether to prohibit, restrict or actively utilize it, depending on the characteristics of the course. However, regardless of how it is used, the following points should be considered when implementing AI in the classroom:

- **Understanding of AI:** Instructors must have a basic understanding of AI. If they have not yet tried using AI, they should try it immediately. Especially when it comes to assignments that are planned to be presented in class, it is desirable to confirm in advance what kind of answer AI will provide.

- **Shared understanding with students:** At the beginning of the semester, instructors should explain to students their own thoughts on the use of AI in the class and engage in ongoing discussions with them on how AI can be involved as a rule in achieving the purpose of the course and its process.

- **Clear rules:** At the same time, instructors should establish clear rules for the use of AI in the course for their students. In particular, when presenting assignments during the semester, it is recommended to reconfirm the rules with the students.

- **Fairness of rules:** When establishing rules for the use of AI in class, please be aware of ensuring

fairness among students. Some students may not be good at using computers while for other students it may be indispensable to use them (due to disabilities, for example). Please give sufficient consideration to the characteristics of each student.

* **Ethical use of AI detection services:** There are services that can detect whether an article was generated by AI or not, but please be aware that there are cases of false positives (misidentifying articles written by humans as AI-generated articles) and false negatives (misidentifying AI-generated articles as human-written articles). Therefore, it is not recommended to fully rely on the results of these services.

* **Use of AI and personal information:** When using AI for questions and assignments, instructors should take measures to ensure that students' personal information is protected. It is important not to ask questions that include personal information because information included in questions addressed to AI will be incorporated in the AI database and may be used later to answer questions by a third party.

5. Resources for Understanding and Using Article Generation AI

* The website of OpenAI that developed ChatGPT. You can register here to use ChatGPT.
https://openai.com/

* Bing Chat, a search engine incorporating ChatGPT provided by Microsoft. To use this service, you need to register using Microsoft's browser, Edge.
https://www.bing.com/

* "ChatGPT: AI Education-related Information Summary" by Professor Rui Yoshida of the University of Tokyo, which summarizes the latest education-related information in Japanese.
https://edulab.t.u-tokyo.ac.jp/chatgpt-ai-resources/

    In particular, Professor Yoshida's video "Let's talk about using ChatGPT in education" is a useful reference for educators considering using ChatGPT in the classroom.
https://edulab.t.u-tokyo.ac.jp/2023-02-11-report-event-chatgpt/

* "The Evolution of AI and Japan's Strategy" by Professor Yutaka Matsuo of the University of Tokyo, provides a concise summary of the history of AI development leading up to ChatGPT and how AI works.
https://note.com/api/v2/attachments/download/a29a2e6b5b35b75baf42a8025d68c175

(*This document was created with the assistance of ChatGPT.)