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Let's Look on the Bright Side of ChatGPT

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Artificial Intelligence (AI) and ChatGPT (Chat Generative Pre-trained Transformer) have become increasingly popular subjects in recent times, captivating the interest of many individuals.[1] I, too, have recently developed an interest in AI; however, I must confess that I am a novice with limited knowledge in this field.

As a beginner, I was taken aback to discover that numerous research papers had already presented outcomes obtained through the application of machine learning algorithms years ago. Even if you search in our *Journal of Korean Medical Science* right now, there are many papers related to AI, machine learning, and ChatGPT.[2-5] Alongside conventional statistical analysis methods like "we utilized SPSS (or SAS or R) for regression analysis," the use of machine learning algorithms had become a customary methodological description. This realization left me feeling a sense of shame for my previous ignorance of AI. While I initially believed I was entering the field belatedly, I now recognize that it is crucial to have a firm understanding of terms and concepts, rather than solely focusing on coding. And, among many AIs, I decided to focus on ChatGPT, which can be used in real life right now.

The scientific community is currently experiencing a series of paradigm shifts, forcing us to confront a critical decision between adaptation and potential obsolescence.

Although ChatGPT is a developing AI model, my observations while reading the latest papers on ChatGPT have revealed a consistent focus on its drawbacks and limitations.

Yes, it is indeed true that ChatGPT possesses present limitations and associated risks.[6-9]

Using ChatGPT as an illustration in scientific writing brings forth evident limitations and risks. Primarily, there exists a potential for plagiarism. Furthermore, reflecting the most recent knowledge proves challenging as ChatGPT's training data is only up to 2021, lacking the ability to perform real-time internet searches. It is also good at lying (Actually, it is important to note that while the term "lying" is often attributed to ChatGPT, it is actually a misnomer as ChatGPT does not possess consciousness. A more precise characterization of this phenomenon is "hallucination".).

Recently, a contentious discussion has emerged regarding the issue of authorship in relation to ChatGPT, ultimately resulting in the consensus that authorship is not allowed to it in the end. The main reason is that ChatGPT has no sovereignty. Also, based on the criteria

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of the International Committee of Medical Journal Editors (ICMJE), ChatGPT cannot be acknowledged as an author due to its inherent lack of accountability.[10-12]

But in any case, I don't think these limitations should deter you from using it. On the contrary, I recommend adopting a contrasting perspective and highlighting its positive aspects. ChatGPT is an evolving model with substantial potential for further advancements. It would be regrettable to not fully harness its capabilities in our medical research endeavors.

ChatGPT can be effectively linked to the use of Excel and PowerPoint (**Fig. 1**). Additionally, it serves as a valuable aid in various aspects of academic writing such as outlining, planning, self-reviewing, and proofreading of papers. Notably, ChatGPT possesses a strong grasp of programming languages like Python, allowing you to simply articulate your desired outcome, and it will generate the corresponding code for you (**Fig. 2**).

ChatGPT can be seamlessly integrated into KakaoTalk, a widely-used Korean messenger, by creating an AskUp channel. This integration facilitates natural conversations, simulating a discussion with your colleague (**Fig. 3**). Furthermore, you have the option to install a Chrome
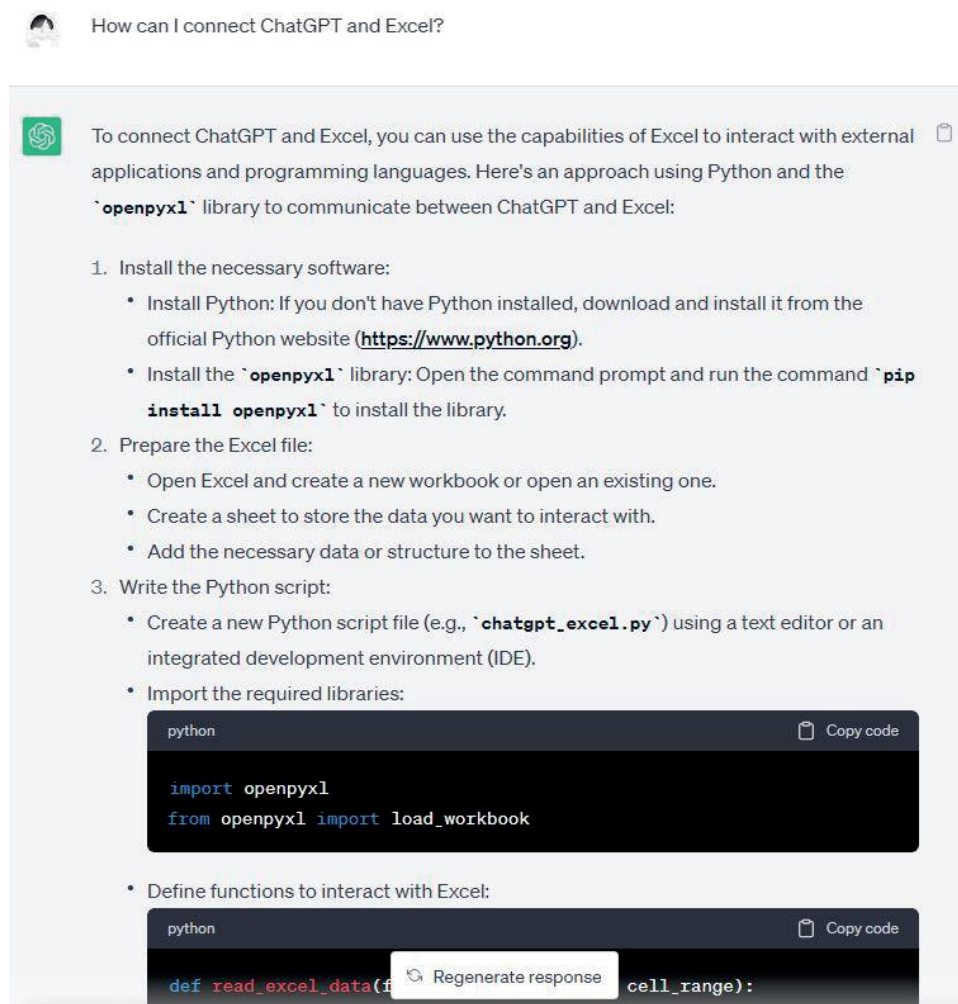

Fig. 1. Among the methods of synchronizing ChatGPT by linking it to Excel, there is a method of linking by writing a program in Python. Although it is a principle that users code directly, ChatGPT can provide a basic python program framework. Of course, more detailed adjustments and operations are up to the user.
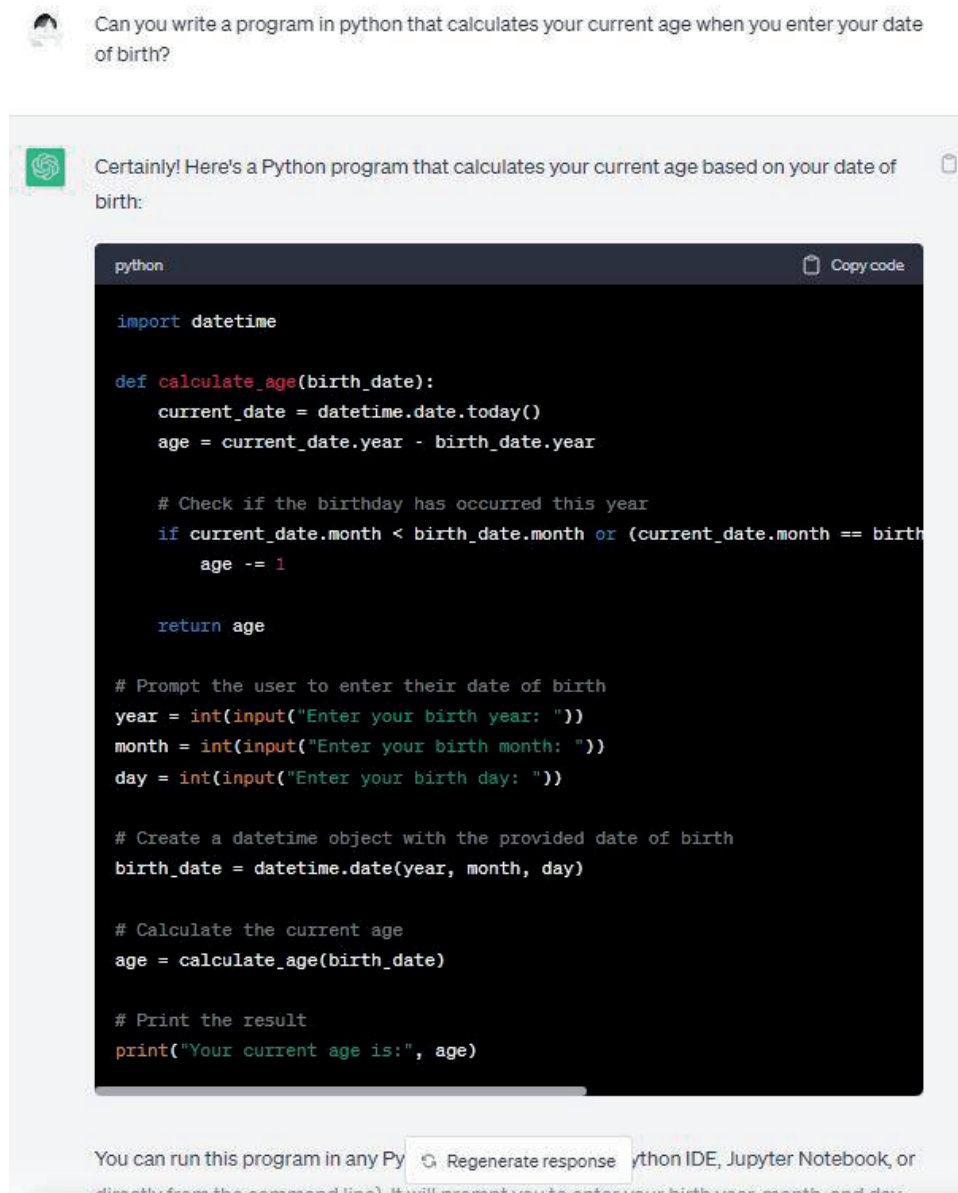
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Fig. 2. ChatGPT can create and provide a basic program even if the user is not familiar with coding. For example, if you ask to write a program in python that calculates your age when you enter your date of birth, it will be provided immediately.

extension called Talk-To-ChatGPT, enabling direct voice interactions with ChatGPT using your microphone (**Fig. 4**).

ChatGPT presents valuable utility in unraveling enigmatic and intricate cases, even in situations where the diagnosis is challenging. For instance, when dealing with a patient exhibiting a fever of unknown origin (FUO), you can input comprehensive symptom descriptions and relevant information, akin to a detailed case report paper. ChatGPT will then generate a response, offering potential differential diagnoses and insights (**Fig. 5**). Leveraging these capabilities fosters enhanced interdepartmental communication, serving as an effective tool for medical consultations.[13]
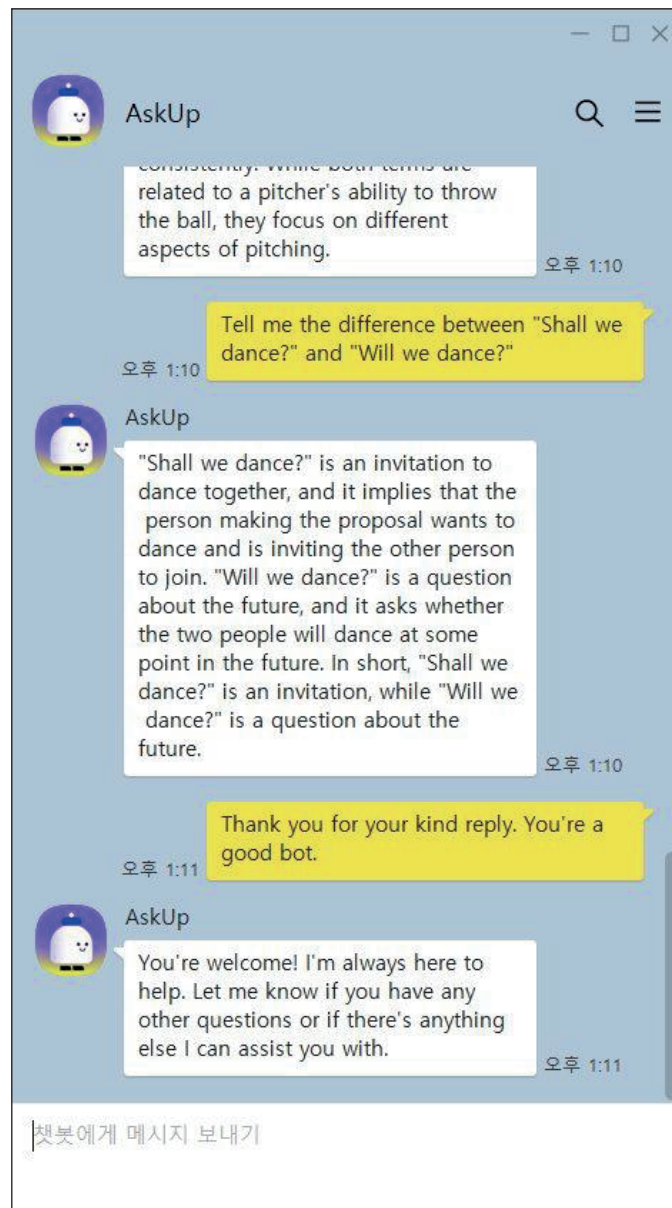
Fig. 3. You can have a discussion like a conversation by plugging AskUp with ChatGPT function into KakaoTalk, a popular messenger.

Adopting an optimistic perspective, it is evident that ChatGPT holds boundless potential for future advancements. By harnessing its capabilities effectively, we can derive numerous benefits.[14-17] However, there is a singular crucial guideline to optimize the utilization of ChatGPT: asking questions with astuteness. This practice, technically referred to as "prompt engineering," can be distilled into three essential considerations, which are significant for regular users like us to bear in mind:

First, pose your questions in English. Inquiring in Korean may yield unreliable or potentially inaccurate responses due to the limited availability of Korean language resources. Although ChatGPT's proficiency in Korean may improve in the future, it is not yet at an optimal stage.
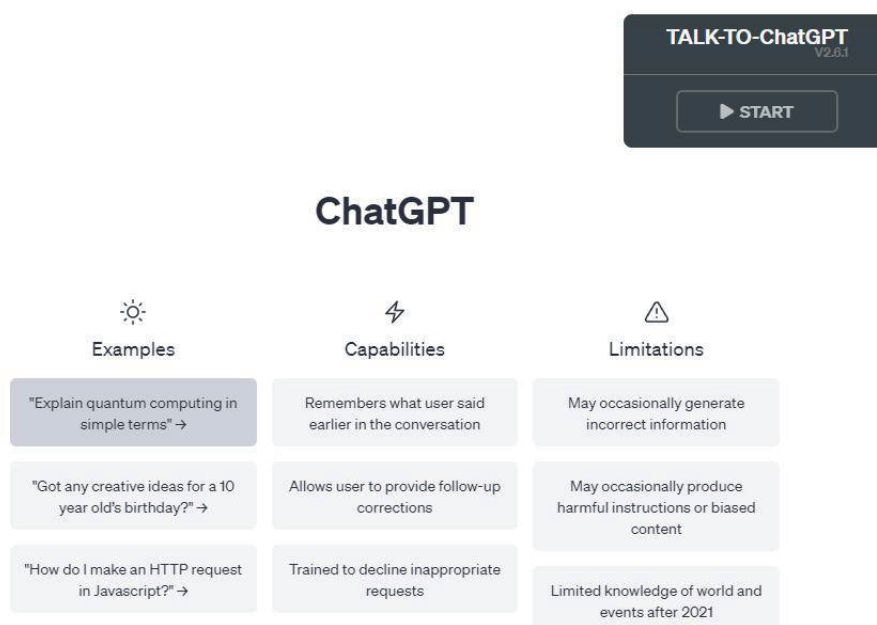
Fig. 4. If you install Talk-to-the-ChatGPT as a Chrome extension, ChatGPT will be able to talk to you. You can have a real conversation by speaking directly into the microphone instead of typing text. It will also be an ideal English conversation partner for English-as-a-second-language people.
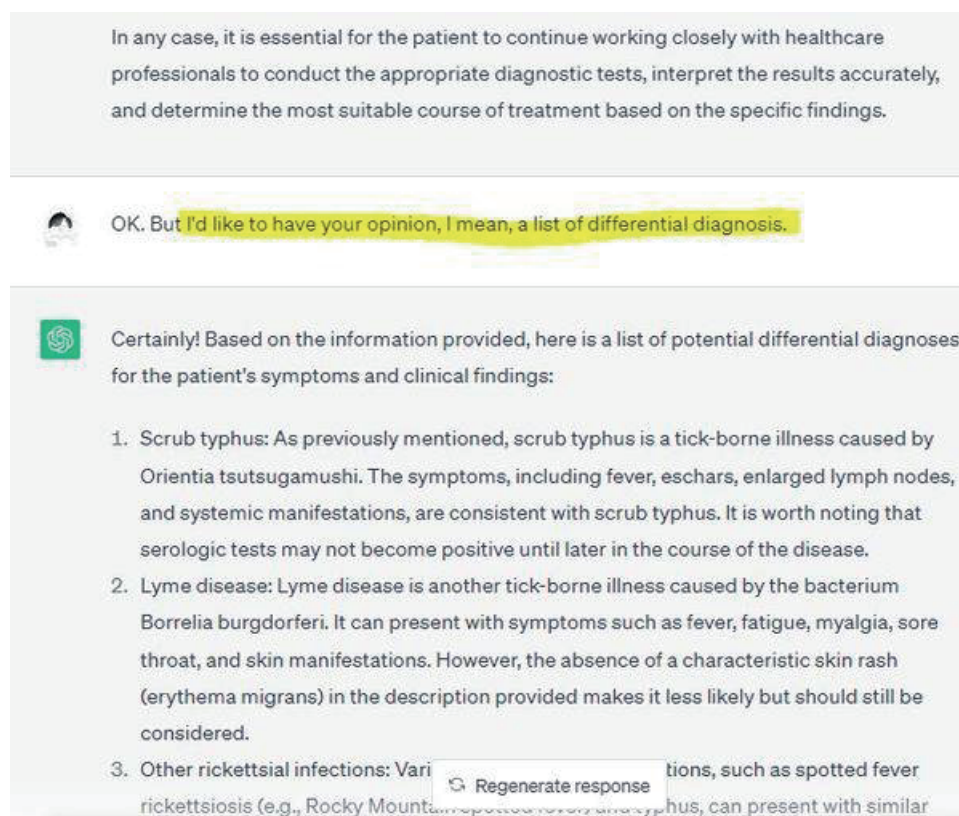

Fig. 5. You can assume ChatGPT as a medical consultation partner and have a serious discussion about a mysterious patient.

Second, formulate your questions in an extensive manner. Enhance the accuracy and practicality of the responses by including a comprehensive list of variables and parameters that could contribute to finding an answer. The longer and more detailed your question, the more substantial the response is likely to be.

Third, maximize the information obtained from ChatGPT. Utilize various techniques to extract as much data as possible. This can be achieved by clicking the "Regenerate response" option multiple times, modifying the question and asking again, or specifically requesting ChatGPT "Provide a list of at least five comments."

We are aware that the era of AI is swiftly approaching, and it is natural to feel a sense of unease about how much preparation is required. A similar sentiment emerged around 1990 when the computer age was looming, prompting questions like "Do I need to learn programming?" However, as history has shown, computers eventually became widely accessible, and today they are an integral part of our daily lives. I believe the same trajectory will unfold with AI. While it may initially demand specialized knowledge, over time it will seamlessly integrate into our routines. Undoubtedly, there will be disruptions, with existing job roles transforming and new opportunities arising. Nevertheless, we can take a proactive approach by familiarizing ourselves with the terminology of the field, which serves as a minimum preparation step. In addition to the ones I have mentioned here, ChatGPT's application fields will be more extensive at your discretion.

Therefore, let's look on the bright side of ChatGPT.

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