

The Feasibility Study of Artificial Intelligence ChatGPT in Translation Field

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Abstract: ChatGPT is a kind of natural language processing technology based on generative artificial intelligence, which has powerful ability of language processing, judgment and correction. The development of artificial intelligence has greatly promoted the progress of machine translation, that is, in order to improve the efficiency of translation, artificial intelligence translation technology came into being, so ChatGPT has also gained keen attention in the translation field. However, the challenges and problems brought by new technologies are also prominent, and how to make better use of new technologies to promote the development of translation studies is an important issue that needs to be solved at present. Therefore, this paper discusses the feasibility of artificial intelligence ChatGPT in translation field from the aspects of its application, dilemma and countermeasures.

Keywords: ChatGPT; Artificial Intelligence; Translation Teaching.

1. Introduction

At the end of November 2022, the American artificial intelligence company OpenAI developed and launched a new generation of artificial intelligence general Chat robot ChatGPT (full name Chat Generative Pre-trained Transformer, short for ChatGPT), once the product came out, It went viral all over the world. It obtains a large amount of data from news media, government agencies, academic groups, social networking sites, encyclopedias and other channels through manual and automatic crawling, adopts deep algorithms to independently learn and understand the domain knowledge and grammar rules used in human communication, and further strengthens learning based on manual feedback to optimize and adjust the results. ChatGPT is a landmark artificial intelligence deep learning system that automatically generates conversation results that are more in line with human habits. These capabilities make ChatGPT a promising prospect for translation applications. Studies have shown that ChatGPT can effectively improve translators' language skills [3]. ChatGPT has been upgraded from the primary stage of grammatical or syntactic processing of natural language text to the advanced stage of logic, semantic and emotional processing, from the operation of language form shell to the selection and judgment of language content and thought essence. Chatgpt is a knowledge processing tool with huge computing power, initially thoughtful and intelligent, and will have an all-round impact on foreign language translation. Therefore, this paper mainly discusses the feasibility of artificial intelligence ChatGPT in translation field from the aspects of its application, dilemma and countermeasures.

2. Implementation Principle and Basic Characteristics of ChatGPT

2.1. Implementation Principle of ChatGPT

The implementation principle of ChatGPT can be summarized as follows:

First, ChatGPT is based on Large Language models (LLMs). LLMs is able to read and learn large amounts of text data and infer connections between words in the text, and its

ability will also improve with the continuous improvement of computer computing power and input data sets and parameter Spaces, thus ensuring a sufficient amount of data required by ChatGPT.

Secondly, through in-depth research, ChatGPT has a strong self-attention mechanism. ChatGPT continues to upgrade, from the existing GPT-1, GPT-2, GPT-3 development to today's GPT-4.5, and the data scale and computing power are also growing rapidly, which makes ChatGPT have a more diversified knowledge base and a stronger self-attention mechanism.

Finally, ChatGPT can perform reinforcement learning from human feedback. It makes the model's output better aligned with the user's intentions by introducing a new approach that incorporates human feedback into the training process. Specifically, it can be divided into three steps: The first step is to create a data set and train a supervised policy model, that is, randomly input questions into the collected data and give the expected output results by the annotator, adjust the model parameters based on the supervised training, and generate an initial language model that can be used to tune the training. The second step is to train the reward model, that is, input questions into the initial training model and output a variety of different results, which are then prioritized by a human tagger, thus generating a new label dataset, which is then used to train the reward model, a process that can more effectively expand the number of databases. The third step is model tuning, that is, through reinforcement learning algorithm, a question is randomly selected in the data set and a corresponding answer is generated, and a scaling reward value is determined for the answer based on the reward model of the previous step, and the reward is fed back to the model for fine tuning and optimization, and through continuous repetition, the ChatGPT model that can meet the needs is finally trained.

2.2. Application Characteristics of ChatGPT

In general, the main characteristics of the model in the application process can be summarized as follows:

Firstly, have comprehensive judgment and processing ability. Because of its massive database, powerful computing power and efficient training model, ChatGPT can not only

collect, organize and analyze existing text data autonomously like existing artificial intelligence models. Moreover, it can further assist human beings to complete various tasks such as content creation, report writing, academic paper writing, program code writing and language translation with high quality, and even complete some complex logical reasoning work in some scenarios. In addition, through the continuous training of the supervised strategy model, ChatGPT will also have a certain logical judgment consistent with human values, so that it can refuse to answer some unreasonable or improper requirements, so as to avoid being used by some people and contribute to its own application value.

Secondly, have the ability to actively adapt to human commands. ChatGPT changes the previous human-computer interaction mode, and integrates functions such as "human preference knowledge" into ChatGPT, so that it can more accurately understand human purpose intentions, understand human language expression, and thus better understand human commands. In the new human-computer interaction mode, ChatGPT's "human-like capability" will also be further improved, and it will be able to better personalize interaction with users, thus improving the user's experience.

Thirdly, with adaptive learning and reasoning ability. By inserting the method of training return model into the daily use of ChatGPT, it can have strong adaptive learning ability, and can constantly revise, improve and optimize the output result according to the user's feedback intention, which enables it to infer the user's next intention according to human communication habits, and constantly optimize the output result. To generate answers that satisfy users.

3. Possible Applications of ChatGPT in Translation Field

With the development of information technology, as a new type of artificial intelligence, ChatGPT can translate texts between different languages to achieve cross-language communication and international trade. Compared with traditional translation methods, ChatGPT's translation is more accurate and smooth, and it can better retain the meaning and style of the original text. It has a wide range of possible application prospects in the field of translation. This technology also has a wide range of application prospects in tourism, business, international exchanges and other fields.

3.1. Improve the Function of Intelligent Translation Management

ChatGPT is widely used, and the translation function is widely used in all applications. The principle is that ChatGPT is capable of deep learning algorithms to further learn human language and thus translate the language. In the intelligent translation carried out by ChatGPT, its functions mainly include: first, machine translation. ChatGPT is capable of multiple language translation, input one language into the machine translation, and use the tool to obtain another language translation. Second, terminology management. The term management function of ChatGPT can improve the accuracy of translation. By using ChatGPT to manage relevant translation terms, you can better improve the accuracy of translated text. Third, translation quality assessment. In the process of actual translation, it is a difficult and complicated task for translation workers to evaluate translation quality, and the application of ChatGPT can effectively evaluate translation quality. Studies have shown

that AI chatbots can assist students in setting learning goals [1] and evaluating students' L2 vocabulary level [2], which is conducive to independent learning. Users enter text into the tool, and ChatGPT compares the translated text with the source text and makes more effective suggestions. Fourth, language recognition and content generation functions. ChatGPT has effective language recognition function. By recognizing the corresponding language, it can generate the corresponding text and realize real-time translation of multiple languages, thus improving the editing of translation. Fifth, workflow assistance. Because ChatGPT has the ability to translate complex text, the use of the tool makes it easier for workers to carry out workflow management, thus enabling better translation, translation queries, terminology management and other functions. Translation is a creative language activity with strong practicability. Translator competence consists of language competence, text competence, disciplinary competence, cultural competence, transformation competence [4], instrumental competence, strategic competence and cognitive competence [5]. To improve your translation skills without a lot of practice is like trying to learn to swim without going into the water. Of course, practice should also be scientific. It is best to first find some difficult to meet their own level and have Chinese translation materials for translation practice. One's own translation is checked against another's. First, see if they are accurate in understanding, then see if their expression is in line with the Chinese language habits, and find out the shortcomings.

3.2. Integration of Multiple Intelligent Translation Efficiency

ChatGPT has the function of intelligent translation, the adoption of intelligent translation is the use of artificial intelligence technology, natural language processing technology and machine learning algorithms, so that the computer can translate according to the text content. In the translation process, the source language text is mainly divided and understood, and the corresponding text is generated. Intelligent translation can effectively improve the efficiency, accuracy and fluency of translation, so that cross-language and cross-text communication is more smooth. Among them, ChatGPT's specific applications in intelligent translation include:

First, instant translation. Users will be able to translate in real time while communicating and having conversations with ChatGPT. In the actual application process, whether oral communication or written text communication, as long as the relevant source language is input into ChatGPT, the desired language translation content can be obtained. This real-time translation function can be effectively applied to travel, business communication and cultural communication.

Second, multilingual translation. Because ChatGPT has high intelligence and can handle multiple languages, the tool can be used to achieve translation and transformation between multiple languages, especially for commonly used English, Chinese, Russian, Japanese, Korean, French and even minority languages, ChatGPT can be used for multi-language translation, and the translation results are accurate, efficient and smooth.

Third, cultural adaptability. In the process of using ChatGPT for multi-language translation, it can not only realize the translation and transformation between different languages and texts, but also combine the characteristics of local culture, language and customs for conversion, and fully

consider the cultural differences and idioms in the process of language translation. ChatGPT can learn the language and culture by storing a large amount of language data, so that the translation can be more in line with the cultural customs of the target language, with a high degree of humanization.

Fourth, the application of translation software. ChatGPT has been widely used in the field of translation, and many translation software have begun to use ChatGPT technology to further improve the efficiency and quality of translation. Google Translate, for example, has introduced ChatGPT technology to improve its translation capabilities.

Fifth, cross-language communication. ChatGPT can act as an efficient translation assistant, which can effectively help people to translate and communicate in real time in cross-language communication, and can be used in many international conferences and business exchanges.

Sixth, network translation. In the Internet, the use of ChatGPT can automatically translate web pages and articles, so that people can understand different language information when surfing the Internet. Automatically translate web pages and articles so that people can more easily access information in different languages.

3.3. Promote the Feasibility of High-quality Translation

We are in the midst of a revolution led by AI technology, especially in the field of translation technology, and the rapid development of ChatGPT technology is changing the way we work and learn. ChatGPT's impact on AI-assisted translation is huge, especially positive.

First, it is conducive to improving the accuracy of translation. To a certain extent, ChatGPT can effectively improve the accuracy of translation. The huge data processing and collection functions, combined with machine learning algorithms, can greatly improve the efficiency of translation.

Second, it has the characteristics of fast turnover. In general, it takes a long time for human translation to complete the text translation, and sometimes the translation may take several days due to the difficulty of the text. In contrast, ChatGPT translation is instantaneous and can complete the translation in a few seconds with high turnover.

Third, it is more versatile. Powered by artificial intelligence, ChatGPT has other uses besides translating text, and since ChatGPT is a general-purpose language model designed for machine translation, ChatGPT can perform a variety of language-related tasks, including text editing, email composing, and so on. ChatGPT is capable of performing a variety of complex tasks, generating languages, managing conversations, and more.

Fourth, process data at scale. ChatGPT can process a large amount of language data, and its learning mode and recognition mode can process a large number of translation tasks, improving the accuracy of translation, and improving the fluency of translation in large-scale data processing. It has a great influence. In addition, the large-scale data processing ability enables it to have a massive corpus and online resources, which enables it to continuously optimize its translation ability and be more realistic in practical scenarios. Fifth, realize intelligent context conversion. The model can improve the ability of context understanding and the efficiency of context conversion. In the process of translation, it can not only translate a single sentence, but also combine the context of the translated text. ChatGPT's powerful information processing capability enables it to maintain the

consistency and coherence of the translated text during the translation process, making the translated text more suitable to the actual situation.

Sixth, it can achieve personalized customization according to user needs. ChatGPT can adjust and optimize relevant functions according to the user's feedback and guidance in the actual use process. According to the user's translation habits, it can better understand the user's preferences, and provide users with more personalized translation services to achieve personalized customization.

4. The Application Dilemma of ChatGPT in the Field of Translation

In a revolution led by artificial intelligence technology, especially in the field of translation technology, the rapid development of ChatGPT technology is changing the way we work and learn. However, the challenges and problems posed by new technologies are equally prominent. Although ChatGPT seems to have taken the translation world by storm, its knowledge database is limited to translations of information provided by the company it founded, and lacks an understanding of linguistic context or nuance, so language experts remain skeptical of its translation accuracy.

4.1. The Psychological Dependence on Translation Technology

Everything has two sides. The use of ChatGPT can improve translation teaching and independent learning, but the use of technology will indirectly make the teachers and students of translation rely on technology. According to a questionnaire, 80.4% of the 41 translation majors think ChatGPT is helpful to translation, but 68.2% of the students think ChatGPT will become dependent on the use of the questionnaire, and they will unconsciously use translation technology in the translation process, and then modify and edit. It can be seen that most students worry about technology dependence when using ChatGPT in English translation courses. Therefore, teachers and students should be alert to the technology and not rely on it when using ChatGPT. In addition, at present, ChatGPT has officially launched the ChatGPT-4 version, to achieve a larger upgrade, has been able to meet the voice input, large text input (PDF recognition), image OCR recognition input and other ways, and then generate content. However, ChatGPT genuine open source software originated from overseas, and users need to use overseas mobile phone numbers when registering, which is difficult for domestic users to achieve. In response to this problem, many language model pages have been developed in China, whose functions and usage are similar to that of ChatGPT registered abroad, which can be used by registering with your domestic mobile phone number, but the number of free uses is limited. One of the more famous is the Wenxin Yi Yi tool developed by Baidu company, which is a knowledge enhancement large language model, the function is similar to ChatGPT, can achieve literary creation, copywriting, mathematical logic calculation, Chinese understanding, multi-modal generation and other aspects of the function. With such AI assistance, learning office efficiency will be rapidly improved. However, the use of tools should be moderate, and excessive use of technology-assisted translation may lead to technology dependence.

4.2. Increase the Digital Gap in Translation

The concept of Digital Divide was put forward in 1989, "in

the context of the information age, in the process of transformation from industrial society to information society, due to different subjects (countries, regions, industries, enterprises, people) in the Internet and other emerging information technology access and use gaps." This has led to a series of phenomena, such as uneven technology popularization, unequal economic development, uneven knowledge distribution and social differentiation." [4] The emergence of ChatGPT is in the context of the information age such as big data and Internet +. The emergence of this technology has aroused widespread discussion around the world. Since ChatGPT was released two months ago, its registered users have passed 100 million, becoming the fastest growing technical tool in human history. As mentioned above, ChatGPT can be widely used in various industries, and the use of translation technology plays an increasingly prominent role in foreign language teaching. Therefore, the ability to master ChatGPT is very important for translation teachers and students. At present, the rapid development of social science and technology, educational technology means are also increasingly updated, the future artificial intelligence technology will also show up in various industries. In the era of artificial intelligent-generated content, a good command of ChatGPT can effectively help teachers and students improve their translation ability and make use of technology to empower them. The lack of relevant knowledge or skills of ChatGPT will make the digital gap between teachers and teachers, students and students widening, which is not conducive to the personal development of teachers and students in the future. Therefore, teachers and students should take the initiative to learn and master new translation technologies to improve their information literacy, constantly narrow the gap brought by the digital divide, better cope with the digital world, and enhance their adaptability to the future digital society.

4.3. Deepening the Ethical Issues of Translation Technology

With the rapid development of artificial intelligence, science and technology have given human beings unprecedented power. People continue to enjoy the convenience brought by science and technology, and the effective application of ChatGPT in the teaching of translation courses is a ready-made example. It can effectively improve the efficiency and quality of translation, but at the same time, it also brings about the ethical problems of translation technology. Technical ethics of translation is the projection of technical ethics in the field of translation, and it is an integral part of translation ethics. The ethics of translation technology is an urgent problem in translation studies. In the past, translation was an ethical relationship between the translator (the subject) and the object (the object) of translation, and the translator only needed to deal with his own problems and translate according to the needs of society. However, the application of ChatGPT to translation teaching will make this phenomenon different from the past. After inputting the command "Does the translation process using ChatGPT have translation ethics issues?" in ChatGPT, the reply was "ChatGPT is an artificial intelligence dialogue robot based on language model, which does not have corresponding translation ethics and moral awareness, and automatically generates reply content based on algorithm and big data statistical training." It can be seen that ChatGPT knows that it has no awareness of translation ethics. Moreover,

there is also an obvious warning on the ChatGPT page: inducing ChatGPT to generate illegal and illegal harmful information will be severely punished by the judiciary. This suggests that teachers and students of translation majors should follow translation ethics and ethics when using ChatGPT, be wary of machine-generated content, treat the translated content objectively and neutrally, and ensure that the technology is intended to facilitate teaching, not disrupt normal translation courses. At the same time, the state and government should formulate corresponding legal norms to protect the use of ChatGPT, and the translation industry should also issue corresponding translation ethics norms to guide translation practice. The study of the ethics of translation technology is a relatively new topic in translation studies, and the new ethical issues brought about by the development of translation technology need to be discussed in depth. Long-term reliance on ChatGPT for knowledge acquisition may lead to a single channel for students to acquire knowledge, lack of critical review of knowledge sources, and will encounter great difficulties in building a systematic knowledge system, developing critical thinking ability and forming knowledge security ability.

5. ChatGPT's Coping Strategies in the Field of Translation

In order to deal with the series of risks that may be caused by ChatGPT, through the above discussion, this research mainly proposes targeted solutions and countermeasures from the following aspects to solve the dilemma of artificial intelligence ChatGPT in the field of translation, so as to promote the further development of machine translation in the era of artificial intelligence.

5.1. Continuously Strengthen the Practical Ability of Translation

The application of ChatGPT in the translation course can improve the translation efficiency and improve the comprehensive quality of teachers and students. However, the translation course itself is a practical course, and teachers and students who use ChatGPT for auxiliary translation many times in the translation course will have a psychological dependence on technology. In order to solve this dilemma, teachers and students can try to strengthen translation practice. First of all, teachers should consciously increase students' translation practice in class, search for translation materials from different disciplines for students to translate, and gradually get rid of their dependence on technology by increasing the number of independent exercises. In this process, translation ability will continue to improve. Secondly, students are encouraged to take Catti(China Accreditation Test for Translators and Interpreters) Level 2 and Level 3, which is an examination of translation and translation ability sponsored by Translators Association of China. In the process of preparing for the examination, teachers and students are encouraged to take part in the examination. They will promote their own translation skills in different translation materials. These types of examinations require teachers and students to complete independently without the help of any equipment, and they can gradually overcome the psychology of relying on translation technology in the preparation of the examination. Finally, the competition promotes the improvement of translation ability. Support and encourage translation teachers and students to actively participate in

national translation competitions for college students, such as Han Suyin Translation Competition and translation and translation competitions held by various provinces, so that teachers and students can continuously hone their skills in multiple participation exercises and gradually overcome the psychological dependence on technology in the competition..

5.2. Continuously Improve Information Literacy

Throughout the history of human development, every major social change cannot be separated from the support of technology. The application of ChatGPT in translation courses will undoubtedly change the previous teaching mode and make translation technology occupy a place in the classroom. However, the digital gap between users and non-users in the translation classroom will be further widened by the translation technology represented by ChatGPT. Therefore, teachers and students of translation majors should continue to improve their information literacy. Information literacy is essential for teachers and students of translation majors. According to Wang Shaoshuang's research on translators' information literacy, technology application ability is one of the essential abilities. "Every translator should choose the right technical tools according to the translation task, which can effectively make up for the limitations of his own experience and knowledge, and better adapt to the requirements of translation work." The path to improve the information literacy of teachers and students majoring in translation can be explored from the following aspects: First, schools should strengthen the investment in network resource equipment, further improve the hardware level of electronic equipment, and configure computer-aided translation laboratories and simultaneous interpretation laboratories suitable for teachers and students majoring in translation. Secondly, students majoring in translation should set up courses related to translation technology and continuously improve their information literacy in professional courses. Finally, teachers and students of translation majors should make use of network resources to continuously learn translation technologies related to translation majors, such as machine translation, computer-aided translation, post-translation editing, corpus construction, etc., so as to continuously improve information literacy and lay a solid foundation for future development of information literacy. In today's era of artificial intelligence, big data and information technology, information literacy is indispensable for every translation teacher and student, especially for every translation major student to be familiar with and able to apply common translation technologies, such as computer-assisted translation, ChatGPT, corpus establishment and search, Internet search technology, etc. The improvement of information literacy and technology application ability is necessary to reduce the digital divide gap.

5.3. Strengthening the Establishment of Ethical Standards for Technology

Based on the above analysis, the application of ChatGPT in English translation courses will bring about technical ethical risks. The study intends to put forward suggestions from the following aspects: First, the ethical standards of translation technology should be gradually completed with the participation, discussion and formulation of translation technology ethics experts, including the Translation Association of China, the Institute of Artificial Intelligence

Translation and Translation, legal and legislative departments, and translation technology research and development industries. Secondly, technology research and development companies design algorithms and provide technical services to support the further development of industry-wide translation technology and develop user protocols under this industry technical ethics standard. At present, the Translation Association of China is working on the Code of Ethics for Machine Translation (Draft for Comment), and it is expected that the first industry standard on the ethics of translation technology will appear soon. In addition, the legislative department can formulate relevant translation technology ethics laws according to the requirements of translation technology research and development companies, based on the advice of technical ethics experts or referring to foreign laws and regulations on translation technology ethics. The formulation of this law should take into account the interests of translation technology research and development companies and take into account the data privacy of users. Finally, ethics education in translation technology can be strengthened in English translation courses. According to the author's search and observation, in the current translation education and research, the education and research of translation technology ethics still lack of due attention, and there is still a large space waiting for further exploration. Therefore, more attention should be paid to the ethical awareness of translation technology in translation education. Therefore, in terms of data ethics, it is necessary to strengthen the review of training data, use diverse and balanced data to train ChatGPT, reduce the risk of bias and discrimination from the underlying corpus, and improve the neutrality and objectivity of data. In the process of using education-related data, transparency should be enhanced to ensure that data sources and use processes are legitimate; Raise awareness of data security and consciously safeguard the political, cultural and ideological security of data. In terms of translation ethics, on the one hand, we should strengthen translation data ethics education, guide students to protect the legitimate rights and interests of translation data stakeholders, and prevent translation data security from being damaged due to translation data infringement, data leakage, data abuse and data alienation. On the other hand, it is necessary to improve students' awareness of translation ethics through various methods, guide students to strengthen ethical review in post-translation editing, reduce the hidden bias and discrimination in machine translation, and improve students' practical ability of translation ethics.

6. Conclusion

To sum up, in the current era of science and technology, it should be clearly recognized that the rapid iteration and popularization of artificial intelligence technologies such as ChatGPT have formed new risks and challenges. In this regard, we can take the following three preventive measures.

Firstly, the technical ethics of translation practitioners should be improved. ChatGPT has been widely used and rapidly popularized in the field of translation, because of its convenient and powerful functions, translation practitioners are easy to see its advantages but not its disadvantages, over-relying on the powerful functions of ChatGPT, but ignoring the hidden potential risks. Secondly, improve the translator's search quotient and inquiry quotient. ChatGPT's translation generation function is relatively powerful, although it saves the translator's labor, but it may gradually devour the

translator's creativity. One of the most important strategies to maintain and improve translators' creativity is to strengthen the cultivation of translators' search and inquiry. On the one hand, although ChatGPT's translation is of high quality, it often makes mistakes and even has a phenomenon of serious nonsense. Finally, improve the supervision mechanism. ChatGPT and other artificial intelligence technologies are developing very rapidly and have very comprehensive functions, but their essence is still a tool, and there is no good or evil in itself, and the key to pros and cons lies in human use. Therefore, actively use multiple channels to improve the research and development and use of artificial intelligence regulatory mechanisms. ChatGPT is here, and there are bound to be more powerful artificial intelligence tools in the future, and the translation field may encounter a greater impact and a more uncertain future. Blind dependence will inevitably lead to crisis trouble, escape and anxiety naturally is not a good solution. Keep a clear head, face the industry situation, calmly reflect on human-machine ethics, scientifically understand the ethical risks of artificial intelligence technology, formulate a sound supervision mechanism, and strive to build a harmonious ethical relationship between man and machine, man and technology, create a favorable ethical ecology for ChatGPT and other artificial intelligence technology, restrain its disadvantages, and give play to its

advantages. It is a good way to realize good governance of technology.

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