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CHATGPT USAGE: A LINGUIST’S PERSPECTIVE

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Abstract: The article discusses a popular computer program that simulates human conversation: ChatGPT. Chatbots with integrated natural language processing (NLP) can appear to understand questions and respond in a manner that seems knowledgeable. Developed similarly to computer-assisted translation tools, the developers moved from rule-based architecture to AI-supported tools using NLP and machine learning (ML) to power seemingly more intelligent conversations (e.g. Apple’s Siri, Google Assistant, Samsung’s Bixby and Amazon’s Alexa). ChatGPT, according to the common wisdom, stands out from other virtual assistants and has the potential to improve the way we interact with technology. Based on several queries conducted with ChatGPT to test its usefulness, we give an analysis of the results, which is followed by a discussion of the pros and cons of its use, with an emphasis on its usage in the educational context, in which students and teachers should be aware of the possibilities and limitations of LLMs.

Keywords: *AI; ChatGPT; DeepL; LLM; machine learning; machine translation; SDL Trados*.

Introduction

They do not think, they do not understand yet they are used by millions willing to comprehend or at least know. An innate human driving force fuelling progress is often being satisfied by discourse that is neither reliable nor infallible. Modern natural language processors (NLPs) can indeed output answers in a fluent language; on the other hand, realistic and natural-sounding language has the power to fool us into believing that the answer is based on facts when it is more likely based on fiction that lacks evidence and relies on hearsay, half-truths or, occasionally, plain stupidity no matter how hard the bot has been previously trained or fine-tuned by humans who try to prevent it from being biased and discriminative.

As the tool has become increasingly popular with students and professionals in different fields, the risks of bypassing the rigorous process of analysing, questioning and synthesising information critically have also become evident. Based on our research, the accuracy of information provided by ChatGPT is an important concern and so too are reduced originality, risk of misinformation and ethical concerns. We believe educators have a crucial role to play in guiding students and the public on how to use tools like ChatGPT responsibly by emphasizing the importance of critical thinking and original content creation, while also making

them aware of dimensions such as critical thinking, digital literacy, information literacy, creativity, privacy and data security.

First, we provide an introductory literature review on AI and LLMs, and then, based on several queries conducted with ChatGPT to test its usefulness, we provide an analysis of the results. This is followed by a discussion of the pros and cons of using ChatGPT, with an emphasis on its use in the educational context, in which students and teachers should be aware of its possibilities and of the limitations of LLMs in general. In the last section, we offer recommendations for future research and acknowledge the limitations of our research.

Literature Review

When Poibeau (2017) wrote about machine translation tools, i.e. tools capable of producing translations from the source language to the target language, he pointed out that this was a very ambitious plan, because: "The analysis of language cannot be separated from the analysis of knowledge and reasoning, which explains the interest shown by philosophers and specialists of artificial intelligence as well as well as cognitive scientists" (p. 2).

Turing (1950, p. 433) believed that a machine can be considered intelligent if a person having a conversation with a computer is unable to say whether they are having a conversation with a human being or a machine. An oft-cited part of Turing's well-known and important essay might have lost some of its relevance today, as we know more today about language, the human mind and thinking than ever before. As our experience shows, we are still out of reach from the intelligence component in the phrase "artificial intelligence", despite occasional marketing pitches trying to convince us otherwise. At best, we may speak about artificial narrow or limited intelligence. Maybe our greatest mistake was to include the word "intelligence" in the equation (Murdoch, 2007). According to Minsky (1988: 51), to understand the human mind is one of the hardest tasks any mind can face.

Sieja and Wach (2023: 110) examined the up-to-date literature on the topic of generative artificial intelligence (GAI) and reported that there are two distinctive views on ChatGPT. Some researchers only see its groundbreaking potential, while sceptics raise questions about AI becoming rogue technology with disastrous consequences.

Table 1

Advantages and Disadvantages of Generative Artificial Intelligence

Advantages	**Disadvantages**
Automated content generation, improved content quality (Schweidel et al, 2023)	Lack of regulation of the AI technologies (Pagallo et al., 2022)
New product design and creative amplification (Doanh et al., 2023)	Job losses (Rawashdeh, 2023)
Time and cost savings (Dumrak & Zarghami, 2023)	AI-related technostress (Kumar et al., 2023)

Personalized content (Gao & Liu, 2023; Jaiwant, 2023)	Algorithmic bias, prejudice and absence of quality control (Janssen et al., 2020)
Optimization, enhanced efficiency and productivity (Wamba-Taguimdje et al., 2020)	Disinformation, deepfake content, social manipulation (Karinshak & Jin, 2023)
Data synthesis and market research (Doanh et al., 2023)	Privacy and personal data violation, human rights violation and social surveillance (Zhang et al., 2023)
Enhanced knowledge and discovery (Sundaresan & Zhang, 2022)	Weakening ethics and goodwill (Peres et al., 2023)
Improved customer experience (He & Zhang, 2023)	Widening socio-economic inequalities (Efe, 2022)

Source: Adapted from Sieja and Wach, 2023: 110.

In a series of articles published on the topic of AI and large language models (LLMs) in *The Economist* magazine's *World Ahead 2024*, Gerbu (2023: 112) wrote about the AI summer, the time when there is a lot of funding in the field and every second news headline is about AI, and AI winters, when funding and enthusiasm ends due to the disappointment of undelivered overpromises made during the AI summer. Gerbu was aware that the summer is mainly enjoyed by those profiting from it, namely researchers getting funding to work on the dominant paradigm and the companies providing LLM-based platforms. Others involved in AI research are mainly exploited (workers labelling data that power these systems, content moderators who filter out toxic content). Gerbu rightfully observed two extremes to which individuals are pushed: they either believe in unfounded claims about the AI utopia or in AI apocalypse, depending on which group of chatterers they listen to and follow.

Kaczmarek (2023) complemented Gerbu (2023) by demystifying ChatGPT further. By definition, he wrote, it operated in a way that perfectly fitted Frankfurt's (2005) definition of "bullshit". Whenever the chatbot provided answers about topics it had no idea about, it tried to convince us of something without regard to the truth, because it simply did not know what was true and what was not. In Kaczmarek's opinion, a language model, no matter how big (and bigger is not always better), has only one ability: it can write seemingly convincing sentences. Kaczmarek explained the inner workings of the present model: the most important part of such a language model's "learning" is the reinforcement learning with human feedback, which aims at making the final product of a ChatGPT conversation sound as good and convincing as possible to the human interlocutor. Thus, the stochastic parrot, as Kaczmarek called it, randomly assembles sequences of linguistic output it has detected in the huge learning database according to probabilistic information about possible ways of linking words into sentences, but without any connection to meaning.

Kaczmarek went on to say that when a parrot of the ChatGPT calibre repeats what it has learnt (not in the true sense of the word "learn" – perhaps a better verb is "to regurgitate"), it outputs only what it knows about what language looks

like but has no idea about how we humans use and understand language. The information it gets from people during practice does not help to improve the model, because the added information just adds another layer of deception. Programmers only tell the model how people want to have the discourse served. Nice-sounding sentences, however, often do not contain any valuable information.

In his essay on the usability and delusions of ChatGPT, Kaczmarek describes some hands-on experiences with the bot. On several occasions he was completely disappointed by the chatbot's response: for example, he asked it to write a poem for a girl he met online and the poem was incomprehensible; on another occasion, the chatbot was unable to solve a simple mathematical calculation; the bot was also unable to answer a simple question that a seven-year-old would be able to answer; and it was unable to interpret texts that required abstract reasoning and extensive knowledge of context and linguistic conventions.

Kaczmarek also wrote on the model's ability to replace computer programmers. In this area too, Kaczmarek argued that there were more problems than benefits when outsourcing such activity to the bot. When ChatGPT helped experienced programmers and programmers with good logical skills, it often took more time for the programmer to correct mistakes and get used to what had been created than if they had done the work themselves. He also suggested that it might have been better if we turned to Google for answers, if not for any other reason than because it is much less energy-hungry and reassured us that we were not doomed to failure yet, except perhaps programmers, who would be forced by ignorant managers to use ChatGPT and expected to increase their productivity by at least 50%. We would only be lost, Kaczmarek added, if we started believing in plausible-sounding pseudo-profound nonsense.

Shanbhogue (2023: 18) described the rapid adoption of the ChatGPT technology. Her work is based on McKinsey's (2023) report on the economic potential of generative AI in which the consultancy suggested that three-quarters of such use of generative AI could fall into four areas: customer operations; marketing and sales; software engineering; and research and development. In addition, the report mentioned other possible uses, like coding by using Microsoft's tool Copilot or writing or drafting marketing copies. Shanbhogue also noted that despite the wide adoption, we should not expect all businesses to become enthusiastic adopters overnight and recommended that businesses should assess gains and costs of using the new technology. In the same issue of *The World Ahead 2024*, Scriven (2023), the US technology editor for *The Economist*, believed that generative AI would go mainstream and that data-centric firms in health care and financial services would profit first.

In the article written by Bertics (2023: 79), the author predicted that researchers are improving AI models in three areas: size, data and applications. With regard to size, bigger is not always better; as for data, figuring out the right mix of training data is still much more of an art than a science, and regarding new applications that may appear in the near future, the author emphasised the importance of learning how to use them more effectively and consequently, giving the models an extra round of training using narrow data sets tailored to the task

at hand. When assessing the value of ChatGPT and similar tools, scientists most often focus on the usefulness, accuracy, acceptance, relevance, understanding bias and redundancy of answers (Liu et al., 2023). Had the space restrictions allowed this review of literature could be extended by Kelleher's (2019) insightful account on deep learning, Denning and Tedre's (2019) introduction on computational thinking and, Coeckelbergh's (2020) work on the ethics of AI.

Testing ChatGPT

A qualitative research project has been carried out focusing on exploring the capabilities of ChatGPT. by examining the AI's proficiency in translating content from English to Slovenian and its skill in interpreting poetry. Following the translation and interpretation stages, ChatGPT's effectiveness was analysed by directing it to compose both a short and an extended essay based on the poem. This study aimed to assess the linguistic accuracy, interpretative depth, and literary expression of ChatGPT, providing insights into its applicability in language processing and literary analysis within the field of AI. Our initial experience with ChatGPT was related to translations. We selected two samples of text, one simple (a paragraph from a magazine) and a slightly trickier one (a paragraph from a philosophical essay written by Harry G. Frankfurt (2006, pp. 15–16; translation in Appendix 1[1]) and asked ChatGPT and DeepL to translate it from English to Slovenian. A closer look at the translations revealed that we did not have a winner. Translation is at least a craft or at best an art. Neither ChatGPT nor DeepL were artists, nor did they possess the minimal characteristics of a good craftsman in the field of translation. Knowing that our readers are probably not fluent in Slovenian, we will only point out the main deficiencies of translations provided by ChatGPT and DeepL: 1. both translated paragraphs needed a lot of editing to make them sound like coherent Slovenian discourse; 2. for reasons unknown to the author of this text, some parts of the more complicated text were translated better by DeepL, and others by ChatGPT; 3. both the selection of appropriate words, phrases and collocations and the selection of verb form were often wrong; 4. the time needed for editing the text by a human was always longer than the time needed for the translation of the whole text by a human; 5. the linguistic coherence of both translations was beyond acceptable; 6. the use of grammatical tenses was not appropriate in the Slovenian translation; 7. it appears that neither ChatGPT nor DeepL would pass an exam in a B.A. translation programme; 8. the tone and style of these translations were beyond acceptable; 9. Slovenian is a less common language, which partly explains the poor quality of translations provided by ChatGPT and DeepL. These findings came as no surprise, although we did expect a more fluent language.

In December 2023, we submitted a poem to ChatGPT with a fake author (William Carlos Williams) and asked it to interpret it in the form of an essay. The poem read (slashes were used for line breaks):

When he sets off on a journey,/What should he take with him?/Memories?/

[1] Note: Frankfurt's paragraph is given below in Appendix one. Other responses provided by ChatGPT are available from the author upon request.

Shaving accessories?/Something will accompany him/To make it difficult for him to come back./Addresses of friends,/Photos maybe?/Nothing. Let it be a long journey/And something will surely accompany him,/To make it easier for him to return.

ChatGPT provided a long and a short version of the essay; both versions had one thing in common – they were too gentle on the author, and they saw things that did not exist in the poem. The literary interpretation of the poem was akin to human discourses on topics we know little about. The fact that the author was not William Carlos Williams was overlooked and the vocabulary used consisted mainly of big words found by ChatGPT in its database. ChatGPT managed to provide a discourse many undergraduate students would be proud of, although we doubt it would make happy a comparative literature teacher in a higher education setting, as the lack of any critical-thinking ability was obvious.

Discussion

Machines can show conversational capabilities similar to humans with very little intelligence (think of Eliza, a chatbot built in the 1960s, or have a look here if you are too young: https://web.njit.edu/~ronkowit/eliza.html, to become familiar with an early test case for the Turing Test.). Eliza, too, provided the illusion of understanding what someone said and was able to maintain a seemingly intelligent conversation. Machine learning and its latest evolution called "deep learning" have only improved the speed and fluency of the speech production capabilities of machines. Our experience with ChatGPT 4 proved that the tool can be used for simple tasks but cannot be trusted in tasks that require a deep understanding of background context or sophisticated reasoning. The responses may seem accurate but are still in essence nonsensical and misleading.

Even though one of the potential uses beyond merely saving time for some relatively undemanding tasks is its use in education and learning in general, caution is necessary regarding the accuracy and reliability of responses. The answer received from ChatGPT 4 related to poetry interpretation was completely useless, although it might have been slightly improved by adding additional prompts[2] to our inquiry. The use of ChatGPT for serious translation tasks should be avoided. Professional translators are better served if they stick to computer-assisted translation tools like SDL Trados or, in some cases, DeepL. SDL Trados includes translation memory (TM), i.e. previous translations by the translator and terminology management tools, which helps translators maintain consistency of translated texts, especially when working on large projects. LLM technologies differ substantially from those of computer-assisted translation (CAT) tools, as they incorporate advanced neural network architectures, which can translate texts between languages. Fluent and natural sounding as they may occasionally appear, they still lack human-like understanding and are often inferior to less sophisticated technologies that are incorporated in DeepL and SDL Trados.

[2] Prompts for translation: Please translate into Slovenian; prompts for interpretation and essay writing: Please interpret the following poem and write an essay. Subsequntly, we asked ChatGPT to write a shorter essay.

Recommendations for Future Research and Research Limitations

We hope our research might trigger additional research incentives in several fields. We envisage future research focusing on investigations describing the impact of using AI tools like ChatGPT on students' skill development (especially critical-thinking skills, problem-solving skills and digital and computer literacy skills). Furthermore, investigations into the impact of ChatGPT on language learning and communication skills could be undertaken. There is a risk of students becoming overdependent or over-reliant on ChatGPT, which may impede their ability to learn independently and lead to them becoming too lackadaisical – studies covering this aspect can also be considered crucial.

Our research was limited to a small number of real-life examples of ChatGPT 4 uses: translation, text interpretation and essay writing. We believe research work on the topic of AI and LLM in education should be encouraged. Understanding the impact of these technologies in education is crucial, as all stakeholders need to become aware of the benefits and challenges of these tools and their long-term impact due to LLMs' integration in education. Even if we do not know exactly how such integration could impact society, we should be prepared for possible changes in the labour market, lifelong learning, and in the nature of human interaction and communication.

Conclusion

Due to differences in language structure, grammar and cultural nuances translations from English to Slovenian using tools like ChatGPT can lead to awkward and unnatural results. Slovenian being a highly inflected language requires understanding of subtle linguistic cues that may not be explicitly stated in English. In addition, many English words, phrases or collocations do not have direct equivalents in Slovenian, which is why the model often had difficulties in finding the closest conceptual or contextual matches. As for the interpretation of the poem and essay writing, ChatGPT did a good job if the only criterion is fluency of the provided answer, but completely failed when interpreting the short poem, because the answer was not based on understanding the text in question but relied exclusively on previous interpretation of William Carlos Williams poetry.

Despite weaknesses observed through hands-on experience with the bot, we believe that the next AI winter is not imminent, as renewed optimism can last a bit longer this time. We also believe we should guide students in their efforts to use ChatGPT or any other LLM by giving them sound advice regarding responsible and effective use. Most guidance is needed in areas like accuracy and reliability, as the present system is far from being infallible in terms of plagiarism and originality, privacy, critical thinking, and over-reliance on ChatGPT. Our mission as educators has changed considerably during the last twenty years. We should help our students in their efforts to navigate the complexities of digital tools by assisting them to develop critical technological literacies.

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Appendix 1 – A paragraph from Frankfurt's essay On Bullshit in English and Slovenian

English text: When I try to put my finger on just why truth is important to us, what comes most readily to my mind is a thought that may perhaps seem unpromisingly banal but that is, nevertheless, unquestionably pertinent. It is the thought that truth often possesses very considerable practical utility. Any society that manages to be even minimally functional must have, it seems to me, a robust appreciation of the endlessly protean utility of truth. After all, how could a society that cared too little for truth make sufficiently well-informed judgments and decisions concerning the most suitable disposition of its public business? How could it possibly flourish, or even survive, without knowing enough about relevant facts to peruse its ambitions successfully and to cope prudently and effectively with its problems?

Slovenian translation (ChatGPT): Ko poskušam ugotoviti, zakaj je resnica za nas pomembna, mi najprej na misel pride misel, ki se morda zdi na prvi pogled banalna, vendar je vsekakor ustrezna. Gre za misel, da resnica pogosto poseduje zelo veliko praktično uporabnost. Vsaka družba, ki uspe biti vsaj minimalno funkcionalna, mora, kot se mi zdi, imeti trdno cenjenje neskončno proteanske uporabnosti resnice. Konec koncev, kako bi lahko družba, ki ji je malo mar za resnico, sprejemala dovolj dobro obveščene sodbe in odločitve glede najprimernejše razporeditve svojih javnih zadev? Kako bi lahko uspevala ali celo preživela, ne da bi vedela dovolj o ustreznih dejstvih za uspešno uresničevanje svojih ambicij in za preudarno in učinkovito spopadanje s svojimi težavami?

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