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University Challenges: Artificial Intelligence and Ethical Issues

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ABSTRACT – The paper explores the challenges and problems that arise in the application of artificial intelligence and the latest ChatGPT technology at university. Recent discoveries in Natural Language Processing (NLP) have made it possible to synthesise and understand coherent text in an open way, translating theoretical algorithms into their practical application. The Large Language Model (LLM) has significantly improved the development of software for summarizing reports and authoring texts. However, recent empirical research has identified several ethical problems in the advanced ChatGPT model, highlighting its inherent shortcomings due to the ethical and social danger of irresponsible behaviour. These shortcomings include issues of compromising privacy, learning quality, transparency, and other ethical dimensions. To better understand and get rid of the practical aspects of ethical risks, it is necessary to do a system review and a user study on the ethics of how the ChatGPT model is currently used. In the meantime, the ethical aspects of using ChatGPT require careful planning and implementation, with clear guidelines on responsible use, in order to make the best possible use of the advantages of this technology while taking into account the risks and ethical dilemmas.

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KLJUČNE REČI - veštačka inteligencija, etička pitanja, nedostaci, opasnosti

POVZETEK – Ovaj rad istražuje izazove i probleme koji nastaju u primeni veštačke inteligencije i najnovije ChatGPT tehnologije na univerzitetu. Nedavna otkrića u obradi prirodnog jezika (eng. Natural Language Processing - NLP) omogućila su sintezu i razumevanje koherentnog teksta na otvoren način, prevodeći teorijske algoritme u njihovu praktičnu primenu. Veliki jezički model (eng. Large Language Model - LLM) značajno je unapredio izradu softvera za sumiranje izveštaja i autorizovanje tekstova. Međutim, nedavna empirijska istraživanja su utvrdila nekoliko etičkih problema u naprednom ChatGPT modelu i pokazalo se da ovaj model veštačke inteligencije ima svoje nedostatke u vidu etičke i društvene opasnosti od neodgovornog ponašanja koje uključuje pitanja ugrožavanja privatnosti, kvaliteta učenja, transparentnosti i druge etičke aspekte. Da bi se to ispravilo potrebno je uraditi sistemsko ispitivanje i korisničku studiju o etičnosti trenutne upotrebe ChatGPT modela kako bi se bolje razumele i otklonile praktične karakteristike etičkih opasnosti. U međuvremenu, etički aspekti korišćenja ChatGPT-a zahtevaju njegovo pažljivo planiranje i implementaciju, uz jasne smernice o odgovornom korišćenju, kako bi se na najbolji način iskoristile prednosti ove tehnologije, uz vođenje računa o rizicima i etičkim dilemama.

1 Introduction

Engineering education is constantly changing to keep pace with the latest advances in technology. Recent advances in natural language processing (NLP) have enabled open-ended text generation and comprehension, making theoretical techniques feasible. The LLM has greatly affected report summarising software and copywriters. However, LLMs may be prejudiced and poisonous, bringing ethical and societal risks and irresponsible outcomes. For accountable LLMs, large-scale benchmarks are needed. Several empirical studies show advanced LLMs have ethical issues.

According to Junaid (2023), the implementation of ChatGPT represents one of the most exciting events in modern history. Creators of educational strategies and teachers should find creative ways of using them, follow trends regarding the application of technology in education, and adapt the learning and assessment system to today's generation of students. Thus, for them, information and communication technologies, augmented and virtual reality, and artificial intelligence (AI) create a completely natural environment in which they live, learn, and work. ChatGPTs' availability and growing popularity make their use necessary to enhance the learning process, including language acquisition, research, and general teaching purposes (Junaid, 2023). Given the topic's current relevance and the increasing frequency of ethical questions, this paper aims to present the underlying ethical issues raised by the adoption of AI and ChatGPT in an academic environment, as well as provide recommendations for the implementation of ChatGPT in the teaching process.

2 Using ChatGPT in an academic setting

OpenAI (Open Artificial Intelligence), one of the most influential organisations in AI research, developed and presented ChatGPT, a language model. Deep learning techniques train the first version of the model in 2018 on a vast amount of textual data from the Internet. This version of ChatGPT was able to generate text that was almost indistinguishable from human-written text. Because the first version of the GPT model was successful, OpenAI decided to create ChatGPT-2, a significantly improved version of the ChatGPT model that was not fully available to the public due to concerns about potential abuse. In 2020, OpenAI made ChatGPT-3 available to everyone. At the time, ChatGPT-3 was the most advanced language model ever created, capable of performing a wide range of tasks involving natural language processing (Jürgen et al., 2023). ChatGPT-3.5 (free and paid versions), as well as ChatGPT-4 (paid versions), are currently in use.

Thus, this article examines ChatGPT in educational environments and relevant ethical issues. The authors Elham and Tajik (2023) state that it is necessary to take into account three visual contexts: the student context, the teacher's context, and the systemic context, but that all the mentioned contexts have the potential to deeply transform the visual practice.

2.1 ChatGPT for teachers and students

Teachers can use ChatGPT to reduce their workload, gain insight into the interests and progress of their students, and innovate the learning process (Jürgen et al., 2023). Teachers can automate grading, detect plagiarism, and simplify administration with the help of existing AIEd (Artificial Intelligence Education) systems. AI-based applications can allow teachers to gain insight into student progress and provide additional guidance and support. Before the introduction of ChatGPT, there were a number of AI-based tools that made it easier for students to write in English and improve their writing skills (e.g., Grammarly). People are increasingly adopting automated writing evaluation (AWE), automated essay scoring (AES), and automated written corrective feedback (AWCF) as alternatives to streamline the writing process. New AI-powered writing applications can serve as a flexible and time-saving addition to the curriculum by combining AWE, AES, and AWCF functions into one integrated application (Koltovskaia, 2022). The use of ChatGPT offers a remarkable potential for enhancing students' intelligent teaching systems (ITS) (Zawacki-Richter et al., 2019). The cited authors believe that ITS is one of the more promising advantages of AI when it comes to the transformation of education, as it represents one of the most effective tools for personalised teaching. Revolutionary paradigm of adaptive, personalised learning is expected to emerge as big data technology advances in the

power of learning analytics. New technologies will be able to record and interpret students' characteristics and emotional state in every aspect of their learning in real time, resulting in personalized adaptive learning (PAL) (Hongchao et al., 2019). It is important to mention that ChatGPT's impressive capabilities, as well as its limitations, reflect the fact that it functions by generating ideas based on what it has previously read and processed (Vázquez-Cano et al., 2023). As a result, he can act competently or show an essential, deep understanding of the subject about which he generates the text.

3 The ethical implications of using ChatGPT in an academic setting

In the paper (Jürgen et al., 2023), the authors focus on the implications of this technology for higher education and discuss what learning, teaching, and assessment in higher education will look like in the context of using a tool like ChatGPT. The use of ChatGPT in facial processing raises a number of ethical questions. As of 2021, this chatbot can answer questions in natural, vernacular-like language and imitate writing styles using the Internet Archive. Microsoft has committed billions of dollars to this project, with plans to integrate it into their Bing search engine in February 2022. The plan also included the integration of ChatGPT into the office suite, despite ongoing worries about the potential risks of artificial intelligence (AI), including the dissemination of misinformation and bias. Elon Musk, among other prominent figures in the technology world, has advocated for the suspension of these artificial intelligence systems, citing concerns that their development has spiraled out of control.

The Nesta Foundation's report (Baker & Smith, 2019) enumerates applications targeted at students, teachers, and systems, while also highlighting the potential risks associated with the use of AI in education. Educators need to weigh the impact of ChatGPT on students, including the potential denial of an authentic learning experience through over-reliance on AI. It is critical that educators and educational institutions ensure that ChatGPT-generated tasks comply with ethical and educational standards. The most frequently mentioned ethical challenges when using ChatGPT in a face-to-face context are explained in the following chapter.

3.1 Data privacy and security

AI-generated tasks often require the collection and storage of student data, which can raise privacy and data security concerns. Educational institutions face the challenge of protecting and responsibly using the data used to generate tasks. Therefore, it is imperative to prioritize privacy and data security, ensuring the protection of students' data and its exclusive use for educational purposes (Jürgen et al., 2023). Therefore, ChatGPT language model should be investigated whether it complies with the General Data Protection Regulation (GDPR) which regulates the way in which we can use, process, and keep personal data. The authors have confirmed that the application had breached data, such as user interviews and payment information. The supervisory authority asserted that there was no legal basis for the mass collection and storage of personal data for the purpose of 'training' the algorithms underlying the platform (Jürgen et al., 2023). It is also believed that, due to the lack of user age verification, the application exposes minors to absolutely inappropriate answers compared to their level of consciousness development.

3.2 Quality of learning

There is a potential concern that ChatGPT will not consistently deliver high-quality face-to-face experiences (Koraishi, 2023). Although AI can generate content, it does not have an in-depth understanding of the pedagogical principles that underlie effective teaching.

Consequently, teachers need to make sure that the quality of AI-generated tasks is in line with their educational goals. Also, proactive measures are necessary to minimise all potential discriminatory effects. While transparency is crucial, educational institutions should be transparent about their use of AI and its limitations (Koraishi, 2023).

According to Junaid (2023), the quality of ChatGPT and other AI generative systems depends on the data they use for self-training, and he believes that these systems are susceptible to bias or even the generation and dissemination of false information. Some authors (Deng & Lin, 2023) mention the implications of this innovation and investigate how to adjust the engineering education ecosystem to ensure that the next generation of engineers will be able to realize the benefits offered by generative AI while minimizing any negative consequences. It is also believed that, due to the lack of user age verification, ChatGPT exposes minors to inappropriate answers compared to their level of consciousness development.

3.3 Plagiarism

ChatGPT lacks sources and citations, which is an important limitation. Using ChatGPT for writing academic articles and assignments is a significant disadvantage. However, OpenAI has already created a VebGPT prototype, which should also offer verified sources and citations. OpenAI created Elicit (<https://elicit.org/>), a tool based on GPT-3, to assist with literature reviews, research proposals, formulating research questions, and submitting academic articles from a repository of 175 million scientific papers (Zhuo et al., 2023). Currently, there is already text generator detection software (e.g., Writer, Huggingface, or GPTZero) that estimates the probability that a text is written by ChatGPT or another AI. Recent announcements indicate that Turnitin, a prominent anti-plagiarism software, has undergone improvements and will soon be capable of identifying whether a text originates from ChatGPT (Jürgen et al., 2023). ChatGPT can verify the originality of the text, yet it has the ability to alter the text, causing the anti-plagiarism software to report a low originality index. The irony lies in the fact that anti-plagiarism software employs artificial intelligence (AI) to evaluate the originality of assignments, while a separate AI can swiftly evade plagiarism detection software. The first AI bypasses the second AI, while the third AI evaluates him. A man's job is just to press a few keys.

4 Ethical use of ChatGPT in academic setting

To ensure that ChatGPT is used in a way that is safe, fair, and ethical towards students and teachers, it is necessary that all participants in the learning process adhere to ethical practices during the application of technology in a face-to-face environment. The reactions of higher education institutions to ChatGPT and GPT-3 were contradictory, ranging from prohibited use to inclusion in curricula. The question is how students, teachers, and higher education institutions should deal with ChatGPT. The general advice is not to use a police approach and not to focus only on the detection of academic misconduct, in the sense of detecting the use of ChatGPT, but to build a relationship of trust with students and use this technology to acquire usable knowledge (Herman, 2022). The simplest solution to the problem of using ChatGPT by students to pass exams or pre-exam requirements would be to use conventional tests where students write by hand, using only pen and paper. Teachers could also test students' knowledge of their own essays and conduct an oral exam, which would further increase the workload of higher education teachers. Additionally, teachers could request video or audio recordings of students discussing their essays or the writing process, as well as asking students to include personal experiences or perspectives in their papers that are difficult for AI systems to replicate.

General recommendations for teachers and higher education institutions are as follows: organise training for teachers on AI tools such as ChatGPT; update the academic integrity policy and/or honour code involving the use of AI tools; develop policies and clear guidelines on the proper use of these tools and the consequences of cheating; adapt and eliminate curricula, syllabus, and courses that do not make sense to students; enable students to write or work on topics that really interest them; and test students' skills and knowledge in real situations that are meaningful and fundamentally motivate students.

When digitrons appeared, people were concerned that men would lose touch with mathematics and mathematical operations. Today, every smartphone includes digitrons as an integral part of mathematics lessons. Students currently utilize ChatGPT for spelling and grammar checks, and in the near future, various tools like Word and Google documents will incorporate it (Warren, 2023). Students are usually "digital natives" who use technology effortlessly and much more intuitively than their teachers. Therefore, it is recommended to train students on academic integrity, develop ethical guidelines on the correct use of these tools and the consequences of cheating, improve digital literacy to increase employment opportunities, teach students how AI can enhance writing skills and generate new ideas instead of simply copying text, and explain the importance of using high-quality sources and protecting against disinformation.

In addition, it should be also noted that there is insufficient legal regulation when considering ChatGPT language model. Following a US complaint, user advocacy group BEUC also called on the EU and individual jurisdictions, as well as data protection agencies, to investigate ChatGPT and similar chatbots. Despite the EU's current efforts to enact the world's first AI law, BEUC is concerned that it may take years for the law to take effect, putting users at risk of incurring bills due to inadequate regulation of the technology. The BEUC group warned that society is currently not sufficiently protected against fraud that artificial intelligence can cause. There are also serious concerns about how ChatGPT and similar chatbots could deceive and manipulate people. These artificial intelligence systems require greater public scrutiny, but public authorities should reassert control over them. Several countries, including China, Iran, North Korea, and Russia, have already blocked ChatGPT.

5 Conclusion

The scientific community and the public are just beginning to see the effects that ChatGPT will have on the world, particularly in higher education. Huang and his associates (2022) state that it will take a decade for the academy to face this new reality: two years for students to understand this technology, another three years for professors to understand that students are using the technology, and then five years for university administrators to decide what and if at all they want to do something about it. Despite the lack of full justification for sensationalist reporting in the media, the authors emphasize the importance of monitoring its development and adapting to new approaches to learning, teaching, and assessment in higher education. It is important to understand that digital literacy education is critical and should include AI tools that should be part of the curriculum. Tan (2022) called for the humanization of academia by integrating empathy and kindness into learning and teaching. It is important to explain to students that writing is a form of thinking and that they are missing out on a critically important form of learning if they use ChatGPT or some other AI for writing. The teacher's task is to help students learn how to ethically use AI tools and understand their strengths and limitations. On the other hand, preserving the educator's role and maintaining human control and accountability are critical to ensuring that AI enhances the learning experience, not replaces it.

In addition, ChatGPT language model should be investigated whether it complies with the General Data Protection Regulation (GDPR) which regulates the way in which we can use, process, and keep personal data. It has been confirmed that the application had breached data, such as user interviews and payment information. The supervisory authority asserted that there was no legal basis for the mass collection and storage of personal data for the purpose of 'training' the algorithms underlying the platform.

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