

第9回 2023年度英語ライティングコンテスト

【2023年度テーマ】

Artificial intelligence (AI) such as ChatGPT offers potential benefits as well as dangers.

What do you consider to be the main benefits and/or dangers of such technology?

【2023年度入賞者】

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※特別賞については、該当者なし

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第 1 位 Hikaru SAITO (齋藤 光)

Navigating the Pitfalls in AI-Driven VC Investments: Algorithm and Human Investors

The advent of artificial intelligence (AI) enabled significant breakthroughs in technology like ChatGPT. Not surprisingly, a variety of business sectors including finance is increasingly aware of AI's potential today. For instance, Bank of America has used their AI assistant Erica since 2018 (BOA, n.d.) while Deutsche Bank recently started to use AI to detect employee misconduct (Shaw & Gani, 2023). Adoptions as with these companies can increase the efficiency and profitability of some organizations. However, AI does not seem to serve as a panacea for the whole financial sector, especially not for the venture capital (VC) industry. VC makes private equity investments primarily in startups and has had a serious problem for decades: the gender gap in investment for women. Considering AI's reliance on historical data and the industry landscape in VC, AI may rather lead to increased discrimination against women when VC investors make an investment decision.

Despite the initiatives to leverage insights of AI for more equitable investment decisions, the nature of supervised machine learning can result in biased algorithms. Generally, the AI development process is classified as either supervised or unsupervised learning. Supervised machine learning refers to the creation of certain patterns out of historical data, which in turn, enables AI to give predictions in response to new data input. Reviewing existing implementation of such machine learning, most AI tools seem to be vulnerable to algorithmic bias for their intrinsic nature. For example, PitchBook, a private market database launched *VC Exit Predictor* in 2023, but the AI-powered investment tool is designed to predict the performance of candidate companies only based on Pitchbook's data from the past (Wiggers, 2023). The reliance on such historical data suggests that some bias exists in algorithms in those investment assistant tools. A study conducted by Antretter et al. (2020) also suggests that AI-made decisions tend to show bias against women, reflecting the existing gender discrimination. The

reproduction of inequality through machine learning is so serious that even AI-enthusiastic authors like Baghchehsara (2023) show concerns about bias against minorities. Although they are optimistic about the future of VC changed by AI, they touch on the limitation of AI in terms of removing social inequality reflected in the learnt data set (Baghchehsara, 2023). Historically, as evident in findings from Geiger (2020) and Lang & Lee (2020), the VC industry has been characterized by an old-boy network and male domination. To illustrate, recent statistics indicates that 79.3% of U.S. VC investment is made for business entirely owned by men (PitchBook, 2023). Considering such an industry condition of investment, databases used for machine learning can reproduce gender inequality and algorithms may deny the potential success of women.

In addition to the potential danger intrinsic to AI engineering, it is uncertain that VC investors today can coexist with such AI tools for equitable and diverse decision-making. Some data-driven investment advocates, however, recently argued that the use of AI can decrease bias during the decision-making process (e.g., Houser & Kisska-Schulze, 2022). Their argument seems optimistic, and the supporters arguably overlook the risk not only in developing AI but also in using it for investment decisions. To be more specific, when VC investors adopt a biased algorithm for their decision-making, the adoption causes another challenge in their judgment—confirmation bias. Confirmation bias occurs when VC investors seek and use information that ‘confirms’ their thoughts. Assuming the AI investment advising tool prefers male business owners in the generated response, the robot-based suggestion can psychologically discourage VC investors from funding women. As Kanze et al. (2017) present, VCs have the propensity to seek negative aspects in investment for women significantly more than their male counterparts. In this scenario, a biased decision-making process worsens today’s gender inequality in VC investment. Plausibly enough though, robot-based VC fund advocates may claim that alternative algorithms may become independent from historical data shortly. However, it cannot be ignored that some researchers like Hernandez et al. (2019) reveal that human investors tend to show aversion to algorithmic investment decisions. The existence of algorithm aversion is experimentally

supported by research conducted by Niszczoła & Kaszas (2020) and Filiz et al. (2022). Those studies imply that investor's gut feelings override the robot when their opinions conflict with each other, and the investors may be dismissive of AI suggestions in the end. Hence, no matter how sophisticated insights are provided by algorithms, VC investors might not be able to fully leverage their potential for gender equality.

In conclusion, AI investment tools may rather expand the existing gender inequality in VC investment for issues in AI itself (i.e., machine learning process) and human VC investors (i.e., confirmation bias and algorithmic aversion). Admitting those potential pitfalls of AI, the VC industry experts might even start questioning themselves again about what it takes to make an equitable decision in VC.

(797 Words)

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第 2 位 Yuhan XUE (薛 韵涵)

Navigating the AI Landscape: Promise and Peril in the Age of Artificial Intelligence

In a rapidly evolving technological landscape, Artificial Intelligence (hereafter, AI) has become both a beacon of hope and a source of concern. Influential figures such as Elon Musk advocate for a cautious approach to AI development, highlighting potential societal risks. This sharp contrast between the thrilling possibilities and potential hazards underscores the pivotal role of AI in the 21st century. It is a subject of paramount importance that warrants careful consideration. This essay endeavors to delve into the complex terrain of AI technology, exploring its positive impacts, negative consequences, and the crucial balance required for responsible navigation in this domain.

AI serves as a game-changer, bringing a slew of positive impacts to various sectors. In the healthcare domain, AI-powered diagnostic tools have paved the way for unprecedented precision and efficiency in patient care. A standout example is IBM's Watson for Oncology, meticulously crafted to aid medical professionals in tailoring cancer treatment plans. By delving into extensive datasets and clinical knowledge, Watson swiftly recommends personalized treatment options, offering a blend of accuracy and speed crucial in a field where time is paramount (IBM, 2023). Additionally, automation, a key feature of AI, has significantly upped productivity in these sectors. McKinsey's in-depth study sheds light on the potential of automation to drive global productivity growth, with estimates ranging from 0.8% to 1.4% annually (Chui, Manyika, Bughin, 2017). The integration of AI-driven algorithms in these sectors streamlines operations, trims errors, and boosts overall efficiency, culminating in economic benefits. Moreover, AI's favorable impact extends to environmental sustainability. AI algorithms play a crucial role in optimizing energy usage, curbing waste, and advancing the sustainability of cities. These algorithms facilitate intelligent grid management, streamlined waste collection, and data-driven urban planning, resulting in a diminished carbon footprint and a more environmentally conscious approach to urban development (Yıldız, 2021).

While AI holds great promise, it is not exempt from a range of challenges and concerns that merit careful consideration. A primary concern revolves around the potential for job displacement, stemming from the integration of automation and AI technologies across various industries. Despite their efficiency improvements, these technologies have the capability to replace tasks traditionally handled by human workers, sparking valid worries about job loss, especially in sectors heavily dependent on routine and manual labor (Bessen, 2018). Ethical considerations loom large in the AI landscape, particularly in the context of disinformation and deception. Deepfake technology, utilizing AI to manipulate video and audio recordings with malicious intent, can deceive and manipulate individuals, organizations, and even governments. Such manipulations not only erode trust but also threaten the

very foundations of truth and authenticity in our increasingly digital world (Urzo, Panico, Custureri, 2023). Furthermore, the issue of bias in AI algorithms has gained prominence. Research indicates that algorithms employed in critical domains such as hiring, lending, and law enforcement can inadvertently perpetuate existing societal biases, leading to unjust and discriminatory outcomes that reinforce disparities in society (Barocas, Hardt, Narayanan, 2019). As society leans more heavily on AI systems, the potential for security risks rises. These systems are vulnerable to cyberattacks and hacking attempts, exposing sensitive data and critical infrastructure to potential breaches and threats (Comiter, 2019). These concerns emphasize the imperative need for vigilant oversight and the formulation of ethical guidelines to steer the responsible creation and deployment of AI technology.

Navigating the extraordinary potential and inherent risks of AI is a multifaceted challenge that demands a comprehensive approach. Establishing robust regulatory frameworks is paramount, requiring clear guidelines for the development and deployment of AI to ensure adherence to ethical and legal standards (Brundage, 2020). Responsible AI development entails transparency in algorithms, data sources, and decision-making processes, allowing for scrutiny and accountability (Jobin, Ienca, Vayena, 2019). Moreover, fostering collaboration among governments, industry, and academia is crucial to collectively address the challenges and opportunities presented by AI (The White House, 2023). By promoting a culture of responsible innovation and ensuring that AI technologies are developed with ethical considerations at the forefront, society can harness the potential of AI while effectively mitigating its associated risks.

In conclusion, AI is a double-edged sword, offering both remarkable promises and daunting challenges. The ongoing debate about AI's societal impact remains at the forefront of technological discourse. This paper has explored the positive aspects of AI, where it transforms healthcare, enhances efficiency through automation, and improves various sectors. However, this paper has also uncovered the negative side, including concerns about job displacement, ethical dilemmas, algorithmic bias, and security vulnerabilities. Balancing the scales in the AI era requires a comprehensive approach, involving robust regulations, ethical guidelines, and transparent development practices. The fusion of human ingenuity and AI's capabilities holds the potential to create a harmonious world that truly benefits all the society.

(795 words)

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第3位 Toranosuke UGAJIN (宇賀神 虎乃介)

AI and Education: Maximizing Benefits, Mitigating Risks

With the advent of ChatGPT, there is much debate about Artificial Intelligence (AI). ChatGPT is a “large language model that is trained on massive amounts of text data and is able to generate human-like text, answer questions, and complete other language-related tasks with high accuracy” (Kansneci et al., 2023,p.1). The influence of ChatGPT extends to various fields, among which education is significantly affected. Some argue that AI technologies such as ChatGPT should be regulated in the field of education from the perspectives of privacy, misinformation, and a diminishment of students’ thinking abilities. However, with an understanding of risks and responsible use, AI will soon be a vital component of education (Mhlanga, 2023).

Some people argue that using AI in education is dangerous regarding personal data and information security. In fact, in March 2023, Italy banned citizens from using ChatGPT, due to the illegal collection of personal information (Bertomeu et al., 2023). Although privacy issues may never completely disappear, their existence alone is not a conclusive reason to refrain from employing AI in education. Privacy issues are not unique to AI. Looking back on history, privacy concerns have existed with the evolution of technologies. However, other technologies and policies that aim to protect people’s privacy have also been developed simultaneously. For example, in the early days, people were concerned about the potential privacy risks of ICT education, which is a digital education with tablet and computer technologies. However, with proper privacy measures, it has rapidly gained

widespread acceptance in recent years (Das, 2019). In Japan, for instance, the tablet adoption rate in elementary and middle schools has exceeded 96% (MEXT, 2021). Likewise, the increasing adoption of AI in the field of education is predicted with improved policies and technologies addressing privacy concerns related to AI. Indeed, OpenAI, which develops ChatGPT, has enhanced privacy policies and safety measures. As a result, Italy lifted the restriction on using ChatGPT in April 2023 (Bertomeu et al., 2023).

Others argue that AI has a potential risk of providing misinformation, thus using AI is unsuitable for education. While AI occasionally produces incorrect answers, this issue is not exclusive to AI, and there are available solutions. First and foremost, it is crucial to educate proper literacy of AI; it is not about blindly trusting AI. Students can enhance their critical thinking skills by acquiring proper literacy in AI (Kansneci et al., 2023). Besides, some companies have developed AI specialized in education. Pearson, a British education and publishing company, has been engaged in AI-based education projects for over 20 years. The company rigorously scrutinizes information that AI learns to create AI suitable for education. For example, Pearson's AI system learns from only published and highly reliable textbooks. Consequently, Pearson's AI provides only verified and peer-reviewed information (Chatterley, 2023). In other words, through acquiring literacy about AI, and education-specialized AI technologies, it is possible to overcome the misinformation problem.

Lastly, some support the idea that there is a lurking danger of AI posing obstacles to learning. Several educators are concerned about the diminishment of students' ability to think because they can

easily outsource their assignments to AI. Additionally, the difficulty in telling whether a text is written by a student or generated by AI leads to an increase in plagiarism (Rudolph et al., 2023). On the other hand, incorporating AI into education provides an opportunity to develop new education styles and evaluation approaches to test students' knowledge. Furthermore, to have a good command of AI, proficiency in writing, reading, and thinking is essential. AI, in turn, assists students in acquiring these skills by providing personalized and effective learning experiences. In addition, AI brings numerous benefits to education. For instance, it saves teachers' time in creating personalized feedback and materials and also allows them to focus on other aspects of education such as interactive communication. Moreover, AI can serve as a conversational partner in language learning, facilitate group work, and provide support for the education of children who are unable to attend school (Kansneci et al., 2023). Since AI adoption progresses in the workplace, incorporating AI into education is beneficial as well for students as it prepares them for joining the workforce.

In conclusion, while AI implementation in education has some potential risks, if educators and students understand its limitations and risks, it will innovate education. In the era of spreading AI, it is crucial to shift our perspective from fearing AI to considering how to leverage AI in education. Introducing AI technology into education with research and careful decisions has a potential to brighten the future of education. (767)

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