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[Perspective] AI Is All About Typing the Right Phrase

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Abstract

This post explores the role of AI in creativity and problem-solving, while emphasizing the importance of maintaining a balance between human and artificial intelligence. The author cautions against relying too heavily on AI, which can lead to a loss of human creativity and originality. To strike a balance, AI can be used as a tool to enhance our creativity while ensuring that our unique ideas and perspectives are not lost in the process.

AI can also assist us in problem-solving, but we must remain mindful of its role and not rely on it entirely. We should evaluate the solutions it provides and maintain control over our work. Ethical principles and human rights must be respected, including transparency, accountability, fairness, and privacy. AI systems must be explainable and address data biases, security, and privacy. A legal framework for the development and use of AI is crucial for protecting judicial rights.

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1. Introduction

What happens if you type “80's computer with pastel hues” into Dall-e, an AI-image-generator available on Microsoft’s Bing (https://bing.com)?

The resulting image may include details such as a bulky CRT monitor, chunky keyboard keys, and boxy plastic casing. The color palette may also reflect the muted tones and pastel hues that were popular in the 80s and 90s. Additionally, the image may feature floppy disks or cassette tapes, which were common storage methods during that time. The desktop background may be a simple pattern or pixelated image, and icons on the screen may be blocky and pixelated as well. The image may also include physical objects such as a stack of papers or a Rolodex (https://en.wikipedia.org/wiki/Rolodex) on the desk, reflecting the prevalence of physical documents and organizational systems before the digital age. But off course you may get different result when you type the same phrase the second

time.

Overall, an image of a retro computer setup from the 80s or 90s could evoke nostalgia for those who experienced that era of technology, and provide an interesting contrast to today's sleek and minimalist designs. That's the world we live in now.

2. AI in earth science

The application of Artificial Intelligence (AI) in earth science has been ongoing for some time, and as a result, many fields have been able to reap the benefits of this innovative technology. From real-time air quality forecasting to the identification of wildfires in UAV imagery, and from predicting stream-flow to detecting microorganisms, the use of AI has revolutionized the way earth scientists approach their work. With the integration of raw geological data and the use of deep learning-based models, researchers have been able to gain a deeper understanding of stratigraphic structures and geological profiles, leading to improved mineral exploration and geological analysis. Overall, the use of AI in earth science has opened up new avenues for research and innovation, and has paved the way for continued advancements in this field.

The paper provides a comprehensive overview of the current state of artificial intelligence (AI) in Earth sciences, examining its current status, use cases, challenges, and opportunities. The paper delves into the many exciting ways in which AI is being used in Earth sciences, including its potential to revolutionize the way we study and understand our planet. Additionally, the paper discusses some of the challenges that must be overcome in order for AI to be fully integrated into Earth science research, including issues related to data privacy, ethical considerations, and the need for continued innovation and research. Despite these challenges, the paper concludes that the potential benefits of AI in Earth sciences are vast, and that continued investment and research in this area is likely to yield significant benefits for both the scientific community and society at large (Sun et al., 2022).

There are several examples of earth science software that use AI. One such example is the Autonomous Science Agent (ASA) software (Chien et al., n.d.). This software is used on the Earth Observing One spacecraft to autonomously detect

and respond to science events occurring on Earth such as volcanoes, flooding, and snow melt. The package includes AI-based software systems that perform science data analysis, deliberative planning, and run-time robust execution. Another example is the use of AI in biogeochemical interactions with sea ice (Kim et al., 2021). This study combines AI with state-of-the-science Earth system models to better predict future regional climate responses. Additionally, the use of AI and machine learning methods have demonstrated practical usage in several spheres of Earth system science including the hydrosphere, geosphere, biosphere, and cryosphere (Ouadfeul et al., 2023). AI and Machine Learning (ML) have become very useful tools in many areas of Earth science studies because of their capability to process large amounts of data and improve predictability.

3. AI redefines creativity

Creativity no longer lies solely in physically drawing a retro computer. Instead, creativity means coming up with a command phrase to ask AI to create something for you.

Creativity has been redefined in the age of artificial intelligence (Wingstrom et al., 2022). It is no longer limited to physically drawing a retro computer or designing a new product from scratch. Instead, creativity has taken on a new form where it means coming up with a command phrase to ask AI to create something for you. This new form of creativity requires a different set of skills such as machine learning, data analysis, and programming. In fact, creativity and technology have merged in a way that was once unimaginable. One can now create something that has never existed before at the click of a button.

However, this new form of creativity has its own set of challenges that must be addressed. For instance, there is a concern that relying too heavily on AI can lead to a loss of human creativity and originality (Leos, 2022). Therefore, it is important to strike a balance between using AI as a tool to enhance our creativity and ensuring that our own unique ideas and perspectives are not lost in the process.

4. What should we do?

4.1. Understanding our needs and limitations

As we continue to witness the ever-increasing capabilities of artificial intelligence, it is becoming more and more apparent that we need to take advantage of its potential to assist us in problem-solving (Atske, 2022). AI can provide us with unique insights and solutions that may have been difficult to come up with otherwise. By utilizing AI in this way, we can work more efficiently and effectively, freeing up our time and resources to focus on other important tasks (Gardner, 2021).

However, it is essential that we remain mindful of the role that AI plays in our work. While it can be a valuable tool, it should not replace our own creativity and decision-making abilities (Leos, 2022). We should not rely on AI to do all of the work for us and should take the time to understand and evaluate the solutions that it provides.

Ultimately, we are the ones who understand our own needs and limitations. By recognizing what we are and are not capable of, we can work alongside AI to achieve the best possible outcomes. This balance between human and artificial intelligence is crucial in ensuring that we remain in control of our work and can continue to innovate and create in new and exciting ways.

4.2. Prioritizing our unique ideas and perspectives

To prioritize unique ideas and perspectives, it is important to consider multiple perspectives and draw upon a range of ideas (Leach et al., 2003). People with a sophisticated perspective on the nature of science are likely to have access to a number of epistemological ideas, deployed according to the context (Leach et al., 2003). Therefore, it is important to consider different perspectives and evaluate them based on their originality and uniqueness (Grohman et al., 2006). Additionally, it is important to keep the idea pool fresh through new talent, which is important for the orientation to new perspectives and new ways of thinking (Katsirikou and Skiadas, 2001). To ensure that all stakeholders are considered, it is important to use a multi-stakeholder contingency approach (Ortenblad and Koris, 2014). This approach involves examining the relevance of different aspects/types of the learning organization idea to higher educational institutions (HEIs), from three ideal-typical stakeholder perspectives: the managerial perspective, the employee perspective, and the societal perspective (Ortenblad and Koris, 2014).

Thus, seeing the potential of AI, we should immediately start incorporating its capabilities to help us solve problems (Rosen, 2023). With a clear understanding of our own needs and limitations, we can work alongside AI to achieve the best possible outcomes while ensuring that our own unique ideas and perspectives are not lost in the process. Based on those position, we propose the following interactions between human and AI (Figure 1).

4.3. Always scrutinize

To scrutinize how AI works, one must consider ethical/moral, legal, and technical opportunities and challenges (Cath, 2018; European Parliamentary Research Service, 2020). Responsible AI is concerned with the design, implementation, and use of ethical (ethical dilemma), transparent, and accountable AI technology to reduce biases, promote fairness, equality, and facilitate interpretability and explainability of outcomes (Brand, 2022; UNESCO, 2020).

To ensure that AI is used with due respect to ethical principles and human rights, key principles such as transparency, accountability, fairness, and privacy must be followed (Brand, 2022; UNESCO, 2023). Additionally, AI systems must be explainable, and data biases, data security, and data privacy must be addressed (Siau and Wang, 2020). It is also important to note that the use of AI without sufficient transparency and possibility for human scrutiny could threaten judicial rights (Risse, 2019). Therefore, it is crucial to have a legal framework for the development and use of AI in society (Brand, 2022).

I would like to offer three practical steps for scrutinizing results generated by AI:

1. **Write down all your ideas:** Take some time to write down all the ideas that come to mind, no matter how small or

unconventional they may seem. The extent to which this is true hinges largely on your existing knowledge, and a considerable amount of reading may be necessary to fill any gaps. Utilize AI to explore each concept by issuing commands like "brainstorm this" or "provide me with five facts related to this topic."

2. **Evaluate your ideas:** Once you have a list of ideas, evaluate each one based on its potential impact, feasibility, and alignment with your personal values and goals. The precision of self-evaluation would similarly hinge on one's previous understanding or knowledge. Remember to conduct your own search using traditional search engines or scientific databases as well.
3. **Seek feedback:** Get feedback from others whose opinions you value and trust, but ultimately, make sure the final decision is yours. Having access to a community of peers or a discussion group would be crucial during this stage. Social media platforms could be utilized to share your perspective and gather insights from others on the same topic.

In summary, scrutinizing AI requires considering ethical, legal, and technical aspects, ensuring responsible AI, and following key principles such as transparency, accountability, fairness, and privacy. And one thing to remember that a good AI starts with typing the right phrase or command, and that can only be done by human.

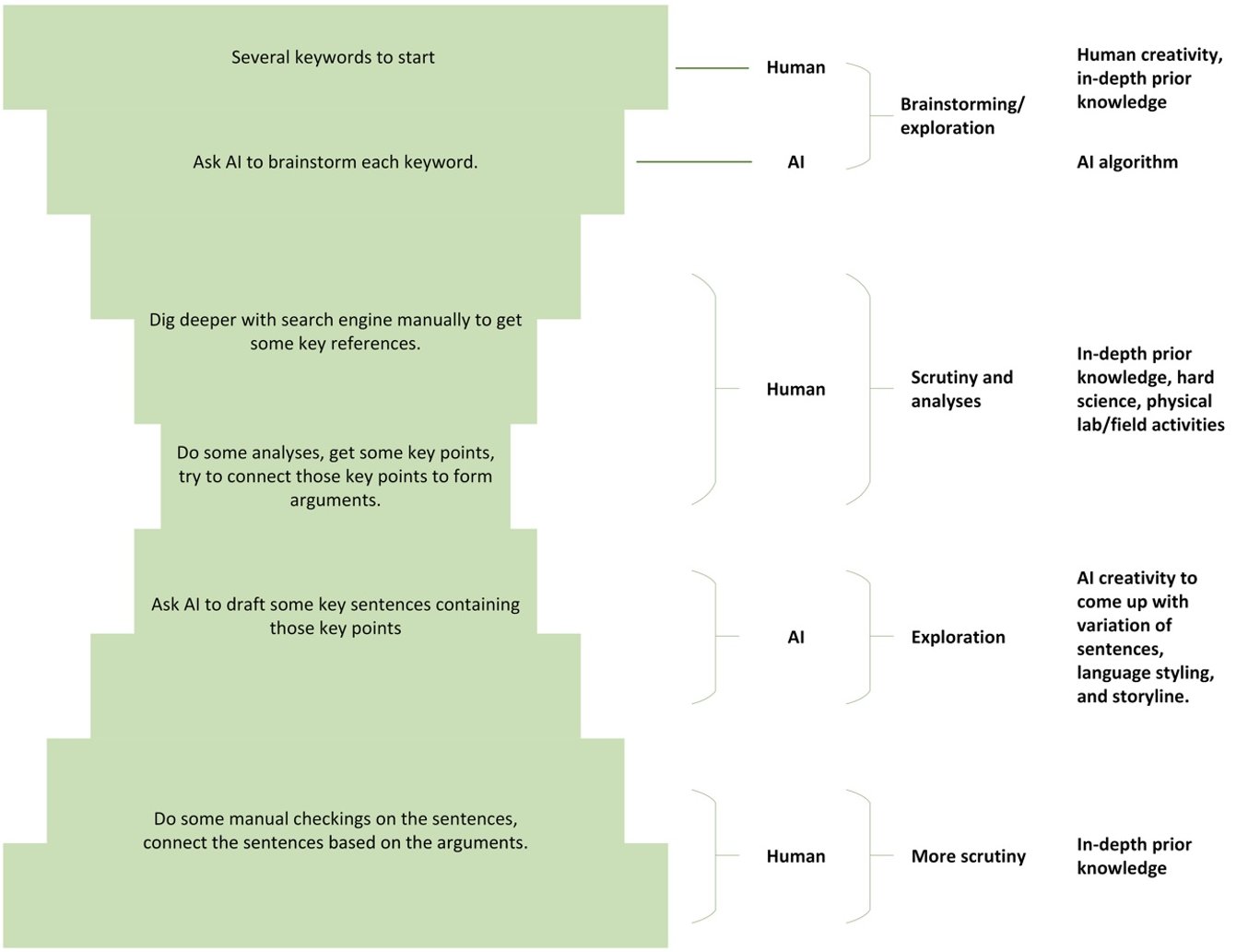

Figure 1. The proposed human and AI interaction in doing research or drafting an article

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