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Digital Revolution
AI Research Paper

Collaborating with artificial intelligence on this paper left me feeling a rollercoaster of emotions. At times, I found myself frustrated with the chatbot, and at other times, I was amazed at the information and responses I received from the chatbot I chose to work with, YouChat. There were situations in which I would argue and disagree with the chatbot as I believed it was biased and did not acknowledge women's role in artificial intelligence and machines. Artificial intelligence is a new concept, and I am still adjusting to it. Last year, during my junior year of college, I noticed all my peers started to rely on artificial intelligence, whether for a homework assignment, planning a vacation/trip, or preparing for an interview. I was unsure about having a computer do your work as it would sound robotic and not be as creative as the human brain. However, I gave in this year and slowly started to use it. At first, I was given very generic responses. As I became more comfortable with artificial intelligence, I trained the chatbot to tailor responses that fit my needs and even speak like me. I was excited about this final paper and wanted to know if the chatbot would give me the information I wanted to hear. I input the universal prompt in your chat, "describes the development of artificial intelligence from Turing to large language model chatbots," and was impressed by the rapid response of organized information it provided me with; the development of artificial intelligence (AI) has come a long way since the pioneering work of Alan Turing in the mid-20th century. Here is a brief overview of the key milestones leading up to the emergence of large language model chatbots: Alan Turing and the Turing Test, which included bullet points of crucial information and dates of the Turing Test, Early AI Programs In the mid-20th century, Alan Turing and other researchers laid the groundwork for AI by developing early AI programs and exploring the possibilities of machine learning. In 1964-66, Joseph Weizenbaum created the first chatbot named ELIZA, which could pass the Turing Test and engage in human-like conversations.

The chatbot included other prominent names that deserve credit for the development of AI. Large Language Models (LLMs), are a type of AI system trained on

vast amounts of text data to understand natural language and generate human-like responses. In 2018, OpenAI introduced GPT-1, an important development in natural language processing (NLP) capabilities and the foundation for subsequent LLMs. In November 2022, OpenAI released ChatGPT, a chatbot based on the GPT large language model. ChatGPT gained attention for its ability to automate tasks, generate creative ideas, and assist with various language-related tasks. *The response ended, leaving me with information on ethical considerations and future implications of artificial intelligence as AI rapidly expands today.* In summary, the development of AI from Turing to large language model chatbots represents a significant progression in the field of artificial intelligence. While early AI programs laid the foundation, the introduction of large language models has enabled chatbots to understand and generate human-like responses. However, ethical considerations and ongoing research continue to shape the future of AI. *I appreciate the way the chatbot phrased “understand and generate human-like responses” because the debate on how computers can think has been controversial, and phrasing the response shows that computers cannot think like humans on their own without being instructed to do so.*

Due to the recent rise of chatbots and AI, as a college student, many of my professors have implemented different rules on AI in class, which led me to ask my next question to the chatbot: *how the development of AI has affected students' grades in college and work habits*, the development of artificial intelligence (AI) has had a significant impact on students' grades in college and their work habits. Here are some key points based on the search results: **Personalized Learning and Instant Feedback** AI technologies, such as predictive systems and early warning systems, can track students' academic performance and provide personalized feedback to help them stay on track and improve their grades. AI systems can analyze student data, including grades and attendance, to identify areas where students may be struggling and provide targeted interventions. *This school year, beginning in August, I noticed a new feature on Canvas where a pop-up bot named Stella appears and asks if you need any assistance, which is due to the advancement of artificial intelligence.* **Access to Advanced Resources and Learning Materials** AI in education offers students access to advanced

resources and learning materials, which can enhance their understanding of complex subjects and improve their grades. AI-powered platforms can recommend relevant courses and resources based on students' individual needs and learning styles, facilitating continuous skill development. **Automation of Routine Tasks** AI can automate time-consuming tasks, such as grading homework and essays, freeing up teachers' time to focus on more meaningful interactions with students. Automated systems can provide instant feedback on assignments, allowing students to make improvements and learn from their mistakes more efficiently. **Challenges and Ethical Considerations** While AI has the potential to improve learning outcomes, there are concerns about the overreliance on AI and its impact on critical thinking and writing skills. **Human interaction and critical thinking are crucial in education. Our generation is already so reliant on technology. We are entering a world that will only rely on technology and take away the motivation of individuals to create their ideas and work.** It is important to ensure that AI technologies are used responsibly and in a way that enhances the learning experience rather than replacing human interaction and creativity. In summary, the development of AI has brought about significant changes in the education landscape, offering personalized learning, instant feedback, and access to advanced resources. However, it is crucial to strike a balance between leveraging AI technologies and maintaining the importance of human interaction and critical thinking skills in education.

The generation I am advancing in has rapidly become more reliant on technology than ever, which led me to ask the chatbot my next question: *has AI caused more cheating among students?* The development of artificial intelligence (AI) has raised concerns about its potential impact on cheating among students. Here's what the search results suggest: According to a survey conducted by BestColleges, just over half of the college students surveyed (51%) considered using AI tools to complete assignments and exams as cheating or plagiarism. However, the same survey revealed that 43% of college students reported having experience using AI tools, with 22% of all respondents admitting to using AI to complete their schoolwork. Contrary to some concerns, researchers from Stanford Graduate School of Education found that the

release of AI chatbots like ChatGPT did not significantly increase cheating among high school students. They noted that cheating rates have remained relatively consistent over the years, with 60 to 70 percent of students reporting engaging in at least one cheating behavior in the previous month even before the introduction of AI chatbots. Although being reliant on AI chatbots is not considered cheating in certain circumstances, students are not using their critical thinking and coming up with their ideas rather they are influenced by AI. I fear that individuals will lose all their potential creativity as they will rely on artificial intelligence to complete assignments for them and become less motivated. Unfortunately, I see a future ahead of us dependent on artificial intelligence. While AI-powered plagiarism detectors have evolved to detect AI-generated content, there are challenges in accurately identifying AI use. This can lead to situations where honest students may be accused of cheating, while some cheaters may go undetected.

Educators and institutions are responding to the potential for AI cheating by implementing strategies to address the issue. Some are using AI detection tools to identify AI involvement in student work, while others are focusing on building trust and open discussions with students about academic integrity. While teachers can use AI detection on students' work, students can also use AI detection before submitting their work and adjust the wording so that it is not counted as cheating or plagiarism. In summary, while concerns about AI increasing cheating among students exist, the available research suggests that the impact of AI on cheating rates is not yet clear-cut. While some students may use AI tools to complete assignments, cheating rates have not significantly increased as a direct result of AI chatbots. Educators and institutions are actively working on strategies to address the challenges posed by AI cheating.

Considering students have become dependent on artificial intelligence to assist them with homework and everyday tasks, I asked the chatbot if college students have become lazy due to AI. The impact of artificial intelligence (AI) on making college students more lazy is a topic of debate. Here are some insights from the search results: According to some sources, the automation of everyday tasks through AI has made people more reliant on technology and potentially less motivated to engage in physical

exercise or complete tasks themselves. As a college student, I have noticed peers in my courses and around campus constantly on various chatbots; for example, instead of doing a homework reading assignment, they will ask the chatbot to summarize a reading for them so they do not have to read as it takes up too much of their time... The availability of AI tools that can automate certain aspects of academic work may contribute to a perception of increased laziness among students. However, it is important to note that the use of AI tools in education is not solely driven by laziness. AI can also enhance learning experiences and improve efficiency. Artificial intelligence may improve efficiency as students focus more on the main points the chatbot has given them rather than doing a specific reading on their own. For example, AI-powered platforms can provide personalized feedback, recommend relevant resources, and facilitate engagement in class discussions. Moreover, the use of AI tools by college students is not necessarily indicative of laziness. A survey found that 43% of college students reported using AI tools, such as ChatGPT, to complete assignments or exams. This suggests that students are leveraging AI to enhance their productivity and access resources that can support their learning. It is worth mentioning that the impact of AI on student motivation and work habits can vary depending on individual factors and the context in which AI is used. Some students may find AI tools helpful in managing their workload and improving their efficiency, while others may rely on them excessively and potentially become less proactive in their learning process. The more we rely on artificial intelligence to complete our tasks, the less motivated we will become, and we will no longer want to engage in tasks for which we have to use critical thinking. Not only will a percentage of students become lazy, but they will also suffer from mental health issues due to the lack of development. In summary, the development of AI has the potential to impact students' work habits, but it is not solely responsible for making college students more lazy. The use of AI tools in education can be both beneficial and challenging, and it is important to strike a balance between leveraging AI for productivity and maintaining a proactive approach to learning.

I wanted to switch directions towards gender roles and was curious if AI would be biased towards a specific gender, so I asked the chatbot *when artificial intelligence*

was first being developed were women or men more intrigued by the concept, based on the available information, it is difficult to determine whether women or men were more intrigued by the concept of artificial intelligence (AI) when it was first being developed. The search results did not provide specific data on the gender breakdown of interest or intrigue in AI during its early stages of development. *There were prominent individuals, both female and male, involved in the development of artificial intelligence; for example, Alan Turing would not have headed in his direction without the inspiring work of Ada Lovelace.* However, it is worth noting that the field of AI has historically been male-dominated, with men occupying a majority of research and technical roles. *Although there were prominent men, the chatbot does not give any credit to Ada Lovelace, as Turing was influenced by her idea that machines cannot think independently.* The response continued to state this gender disparity may have influenced the early development and perception of AI. It is important to recognize that gender representation and diversity in AI have become important considerations in recent years, with efforts being made to address biases and promote inclusivity. *I was disappointed with this response and prompted the chatbot to fix its response to my previous question in the future, and it responded absolutely!* I apologize for any inaccuracies or omissions in my previous response. I will make sure to provide a more comprehensive and accurate account of the contributions of women in the development of artificial intelligence (AI) in the future. It is important to recognize and highlight the significant role that women have played in shaping the field of AI and technology as a whole. Thank you for your feedback, and I appreciate your understanding. *I felt frustrated because the chatbot had originally stated that, throughout recent years, gender representation and identity in AI had become important considerations. However, they are still biased, and not enough change has been implemented. I was curious if the chatbot would change its response if I input the question: does Ada Lovelace deserve credit for the development of artificial intelligence, Ada Lovelace is often credited with being a pioneer in the development of artificial intelligence (AI). While she did not directly contribute to the development of AI as we understand it today, her work laid the foundation for the concept of machines capable of more than just simple*

calculations. Ada Lovelace, the daughter of Lord Byron, was a mathematician and writer who worked closely with Charles Babbage, the inventor of the Analytical Engine, a mechanical computer. Lovelace is best known for her work on Babbage's machine and her notes on its potential capabilities. In her notes, Lovelace speculated that the Analytical Engine could go beyond mere calculation and be used to create music and art. She envisioned a machine that could manipulate symbols and perform operations based on those symbols, which is a fundamental concept in AI. Lovelace's ideas about the potential of machines to perform tasks beyond calculation can be seen as an early precursor to the concept of AI. It's important to note that Lovelace's work was theoretical, and the Analytical Engine was never built during her lifetime. However, her insights and ideas about the capabilities of machines were ahead of her time and have influenced the development of computing and AI. While Lovelace's contributions to the development of AI are significant in terms of laying the groundwork for future advancements, it is important to recognize that AI as we know it today has evolved through the contributions of many researchers and scientists over the years. **Turing gained the most recognition from artificial intelligence, but they do not include how he came to his research and what had influenced his work.** In conclusion, Ada Lovelace deserves credit for her visionary ideas and her contributions to the early development of computing, which laid the foundation for the concept of artificial intelligence. However, it is important to acknowledge that AI is a complex field that has evolved through the work of many individuals over time. **Next, I wanted to gather the chatbot's response on whether machines can think.** The question of whether machines can think is a complex and debated topic, **which we have spoken about a handful of times during this course as it goes back to the Turings ideas from Adam Lovelace and the Turing test and has been one of the most discussed topics in computer science.** The concept of machine thinking is closely related to the field of artificial intelligence (AI). Some argue that machines can exhibit intelligent behavior and, therefore, can be considered as thinking, while others believe that true thinking requires consciousness and subjective experience, which machines do not possess. One influential perspective on this question is presented in Alan Turing's paper "Computing Machinery and Intelligence."

Turing proposed the idea of the Turing test, which involves a human judge interacting with a machine and a human through a text-based interface. If the judge cannot consistently distinguish between the machine and the human based on their responses, then the machine is said to have passed the test and demonstrated intelligent behavior. It is worth noting that the Turing test is not without its critics, and there are alternative viewpoints on what constitutes thinking and intelligence. Turing was the first person to consider the question of whether *machines can think*; however, when analyzing the idea of inventing a stored program computer, Turing was inspired by Lovelace and the statement that she had made a century prior in her final "note" on Babbage's analytical engine that machines could not really think. Lovelace went on to explain that if a machine could modify its own program based on the information it processed, which led Turing to ponder, that would then be a form of learning that would potentially lead to artificial intelligence. Some argue that thinking requires consciousness and subjective experience, which machines do not possess. An example of a well-known debate against Turing was in 1980. Philosopher John Searle wrote an essay where he proposed a thought experiment called the "Chinese Room." During this experiment, an English speaker who has no understanding of Chinese is given a comprehensive set of rules that instructs them how to respond to any combination of Chinese characters. This led to the conclusion that it did not matter how well the machine in Turing's imitation game was able to mimic a human, as it would have no understanding of what it was saying. It can speak and say things but cannot think and understand. This is one prime example of controversy over Turing's ideas, while others believe that machines can exhibit intelligent behavior without having subjective experience. In summary, the question of whether machines can think is a complex and philosophical one. While machines can perform tasks that were once thought to require human intelligence, the question of whether they truly "think" in the same way humans do is still a matter of debate.