



“Recent and Emerging Trends in Artificial Intelligence and Chat GPT”

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Abstract

Almost every few decades, a new invention drastically alters the course of human history. By innovations, we mean those that significantly improve the quality of life, like the internet or airplanes. What historical event will be the next pivotal one? It is here and is known as Chat GPT. The artificial intelligence research company Open AI developed it. A natural language processing (NLP) model called ChatGPT combines OpenAI's GPT-2 transformer-based language model with supervised and reinforcement learning methods to improve it (a method of transfer learning) using the GPT-3 group of large language patterns. I can definitely point out some recent and emerging advances in artificial intelligence (AI) and research pertaining to GPT-like models as of my most recent knowledge update in September 2021. Please be aware, though, that after then, the information might not be current. I advise looking at recent conference proceedings, scholarly publications, and reliable AI news sources for the most recent trends and research. These tools can boost student engagement, enhance learning results, and streamline office procedures. According to the study's conclusions, artificial intelligence (AI) has the power to revolutionize education by improving student learning experiences, enabling personalised learning, and automating administrative work. Everyone views Chat-GPT and artificial intelligence differently. Engineers and businesspeople view ChatGPT and artificial intelligence as a whole new world in which to develop goods, services, and solutions. Journalists and social scientists are worried about the effects on politics, the economy, society, and overall well-being. We have covered some of the essential information concerning AI and ChatGPT in India in this article.

Key Words: AI(Artificial Intelligence), Open AI (ChatGPT)

I. Introduction

Today's artificial intelligence smartly modifies the working process using grooming scenarios. As AI technology advances swiftly, it becomes increasingly obvious that it has the potential to revolutionize education. One of the most intriguing developments in AI is Chat GPT. Artificial intelligence (AI) has recently changed a

number of industries, including education. Open AI and Chat GPT are two well-known instances

of AI technologies that have the ability to completely change the way that education is provided. The educational system is said to be capable of being completely transformed by modern technology, such as the ChatGPT language model. Using ChatGPT in “education necessitates respect for privacy, equality and lack of prejudice, transparency in the use of ChatGPT”.

Key definitions for ChatGPT, an Open AI public platform, and its underlying technology.

Educational systems must have a clearly defined strategy and pedagogical framework in order to adequately incorporate and use large language models in learning environments and teaching courses.

Even though the application of AI in education has improved students' learning, more study is still required to fully realize the potential of Chat GPT and AI in this field. There is a study gap in determining the usage of these technologies today and in the future, as well as their impact on the educational system.

Artificial intelligence (AI) is the term used to describe the simulation of human intellectual functions by computers or computer systems. Artificial intelligence (AI) can imitate human abilities like communication, learning, and decision-making

II. Literature Review

Artificial Intelligence

[5] The creation of computer systems that are capable of doing tasks that frequently need human intelligence, such as learning, problem-solving, pattern recognition, and decision-making, is known as artificial intelligence. It involves developing models and algorithms that enable robots to perform tasks that often require human cognitive abilities, such as perception, language understanding, and reasoning.

ChatGPT

OpenAI's ChatGPT is a substantial language model that uses machine learning techniques to understand and produce language that is similar to that of humans. CHATGPT is an artificial intelligence-powered chatbot that can have a range of conversations with users, ranging from easy small talk to complex technical chats. One of CHATGPT's primary strengths is its ability to understand inputs in natural language, including slang, idioms, and colloquial phrases. As a result, it can be efficiently utilized to engage people in conversation about a range of topics, including customer service, education, and entertainment.

Current Artificial Intelligence Trends:

1. Transformer-based designs, such as GPT-3, have become a significant trend in artificial intelligence. These models have state-of-the-art performance across a wide range of applications since they are pre-trained on enormous volumes of data and then fine-tuned for particular tasks.
2. Addressing bias, fairness, transparency, and ethical issues in AI systems is becoming more and more important as AI systems are integrated into society. Techniques to detect and reduce biases in AI models are being developed by academics and professionals.
3. Deep learning models are black boxes, which raises questions concerning their interpretability. In order for people to understand the thinking behind an AI model's decisions, XAI focuses on making AI models more transparent and intelligible.
4. This strategy trains machine learning models over dispersed servers or devices while maintaining localized data. It allows for collaborative model training without exposing raw data, which helps to solve privacy concerns.
5. Medical image analysis, medication research, patient care, and diagnostics all make use of AI more and more. The effectiveness and precision of healthcare procedures could be greatly increased.

New Trends in Models Like GPT:

1. Researchers are striving to develop GPT-like models that are even bigger and more effective. These models have the capacity to discover more intricate patterns and produce results of higher caliber.
2. New models are combining several sorts of data into a single framework, such as text, graphics, and audio. This makes it possible to create AI systems that can comprehend and produce material in a variety of formats.
3. In the future, models may concentrate on producing interactive and dynamic replies to allow for more believable and interesting discussions between humans and AI systems.
4. AI models that are easily adapted to fit certain customers or niche industries are becoming more popular. This can result in interactions that are more relevant and customized.
5. Researchers are investigating methods that enable models to learn from a limited number of examples or change their approach to a problem without losing their prior understanding. This might increase the adaptability and flexibility of AI systems.
6. There is rising interest in creating more energy-efficient architectures while maintaining high performance because to the energy requirements of large AI models.

LLM API commercialization

[1] While OpenAI currently has the most well-known large language model, many businesses are likely to start providing APIs for these models in the future. With 540 billion parameters, Google already has the PaLM model, and it will likely soon offer an API for it. The Bloom model is freely obtainable at Hugging Face. A number of businesses are now growing or have already been established to provide this service, and this is true even as I write this essay.

We should anticipate that huge language models will become a commodity offered by numerous organizations in the upcoming years. This technology will be included into a wide range of goods with a wide range of applications:

1. **A medical record system**, for instance, may automatically comprehend a patient's medical history and indicate any medications that can interact unfavorably with a condition the patient may have. This is an example of improved intelligence and reasoning in products.[2]

2. **Improved product learning and assistance in context:** For instance, when you are attempting to understand the user experience of a new coffee maker, it merely speaks to you and responds to your inquiries on how to produce the ideal espresso shot. [3]
3. **Consumer goods now allow for programming:** As an illustration, you could simply instruct your thermostat to begin heating or cooling the house to my default temperature when my calendar shows that I will be working out at a nearby gym when my GPS location indicates that I will be less than a mile from home.

New Things made possible via LLMs

This is by far ChatGPT's most intriguing and surprising feature. Building goods that were challenging, if not impossible, to build before is now achievable thanks to LLMs. And there are currently several items available on the market:

1. You can automate some customer support, in-product help, and customer care jobs.
2. The market is flooded with LLM-assisted products that can assist you in producing persuasive blog posts or sales copy. These do save a lot of time even though they are not ideal.
3. ChatGPT has been a fantastic tool for people to learn about new subjects on which information is available in the public domain. Similar to a search engine, it can be helpful if you are researching a specific disease or your upcoming trip to a faraway region of the world. However, unlike search engines, this tool can occasionally synthesize information by applying simple logic.
4. Using the Codex (another GPT-style LLM tailored for writing code), many developers claim a significant increase in productivity.
5. This time-saving application reads lengthy emails or papers and highlights the important information. Imagine a doctor who is pushed for time who has to comb through hundreds of pages of medical records to obtain the necessary information. Although the technology is not entirely secure to utilize for such important jobs, I believe this will have a significant impact in the future.

III. Research Methodology

A documentary study was utilized to investigate the possibilities of AI in education and provide information on how Open AI and ChatGPT can be

applied now and in the future to improve teaching and learning outcomes. [5] The documentary research technique involves going through papers and other information sources to learn more about a certain event or issue. Using this research methodology, a wide range of topics, including social, political, economic, and cultural issues, can be investigated. The image below depicts the steps involved in doing documentary analysis research.

1: Step is to conduct documentary analysis research.

In the first step, the research question is determined: The initial step in doing documentary analysis research is identifying the study question. The impact of Open AI and Chat GPT on education, both now and in the future, is the subject of this research question. It need to be precise and narrowly focused on a certain issue or subject. The second step is selecting the information sources. This may require reading and analyzing documents, pulling out relevant details, and organizing the data in a way that makes it easy to analyze. After all, the data analysis is the next step. You might need to do this by identifying trends, themes, or patterns in the data using qualitative or quantitative methodologies. The analysis may also involve comparison to identify patterns and differences among several sources of information. Recommendations and conclusions drawn from the analysis were also included in the approach. Overall, documentary analysis is a helpful research method for finding out more information on a range of topics. It is essential to confirm that the results are backed up by a thorough analysis of the facts and that the data are reliable and valid.

2: Key words used to identify sources

Using keywords can help you find crucial information in the documentary that is relevant to your question or subject. By examining the frequency and distribution of keywords, the researcher can identify the main themes in the documentary. The analysis must be systematized, therefore keywords are essential. Keywords help systematize the study by providing a clear framework for the researcher to organize and classify the data.

Using a list of predetermined keywords, [6] the researcher can categorize the data and compare it across distinct documentary portions. Once more, using the right keywords can help your trustworthiness. The use of keywords can improve the trustworthiness of the analysis by providing a clear and objective technique of categorizing the data. This helps to lessen the likelihood of

irrational interpretations and biases. The key concept is that using keywords is necessary to increase efficiency.

Results and Discussion: Chat GPT and Open AI's Place in Education: Past, Present, and Future Uses AI and Chat GPT have the potential to have a significant impact on education both today and in the future. The role of OpenAI and Chat GPT in Education refers to the use of artificial intelligence (AI) technologies to improve and boost student learning. The objective of OpenAI is to create AI systems that are reliable and secure and that can be used to many different problems. However, OpenAI's Chat GPT is a specific class of language model that can generate responses to text-based inputs that resemble human speech. OpenAI and Chat GPT have a lot of educational applications right now. [4]

Systems for intelligent tutoring (ITS)

Using CHATGPT, intelligent tutoring programs that provide students with individualized learning opportunities can be developed. A student's progress can be monitored, and the curriculum can be adjusted to meet their needs. Additionally, with CHATGPT, students can get automated performance feedback. For instance, a chatbot built on the CHATGPT can be used to give students quick feedback as they solve problems or write essays. Once more, by providing students with a natural language interface to connect with the program, Chat GPT can support Intelligent Tutoring Systems (ITS). Students can ask questions and quickly obtain responses because to the conversational nature of the NLI, which can boost engagement and reduce frustration. It can use Chat GPT to provide students with tailored feedback based on their performance and academic advancement.

digesting natural language and learning. For example, machine learning techniques can be used to analyze student performance data and alter the tutoring materials to better meet their learning needs. Natural language processing can also be utilized to increase the accuracy and efficacy of Chat GPT's responses. Therefore, Chat GPT can dramatically improve the effectiveness and customization of ITS by providing students with a natural language interface to interact with, mimicking their knowledge, and providing tailored feedback and coaching depending on their performance and progress.

Learning languages with ChatGPT

Using CHATGPT, it is possible to develop interactive language practice applications for learning new languages. Using a chatbot

developed on CHATGPT is one way to give students conversation practice. The chatbot may simulate actual interactions with speakers of the target language in the real world and can also react to student input. This program will give students the chance to develop their speaking and listening skills in a safe environment. Chat GPT can help with language learning by providing students with a conversational environment to practice their language skills. By using Chat GPT, students can engage in more engaging and interactive vocabulary, grammar, and pronunciation training.

GPT and Personalized Learning Discussion

With the emergence of ChatGPT, tailored learning platforms that respond to the requirements of each student can be created. For instance, ChatGPT can be used to suggest educational materials to students depending on their interests and learning preferences. The ChatGPT can be used to offer students tailored feedback on their progress and propose additional reading or study materials. ChatGPT, a language model developed by OpenAI, can support personalised learning in several ways. Here are a few illustrations. With a personalized Learning Experience, based on a learner's replies to questions and interactions, ChatGPT may assess their unique requirements, strengths, and weaknesses and offer individualised recommendations and feedback to enhance their learning experience. This makes sure that the student receives useful content that is pertinent to their learning preferences. Adaptive learning: ChatGPT can change the complexity and pace of the content to keep learners challenged without overwhelming them by tracking their responses and progress over time. As a result, students' learning progress is accelerated, and they can build on their prior knowledge and skills.

Adaptive Vocabulary Learning: ChatGPT can evaluate a learner's vocabulary proficiency and produce a unique strategy for vocabulary development. The system can then offer daily vocabulary tasks that are appropriate for the learner's skill level and gradually get harder as they get better. For instance, ChatGPT can offer word lists and quizzes on the most often examined vocabulary items if the learner is getting ready for the exam. The other important aspect is customized writing feedback. By examining the writing's structure and substance, ChatGPT can offer feedback to students on their written projects. Following that, the system can offer tailored feedback on aspects like grammar, sentence structure, and word usage.

IV. Conclusion

This research has examined the function of Open AI and Chat GPT in education, examining both their current and potential future applications. By enhancing student learning, offering individualized instruction, and automating administrative work, these cutting-edge technologies have the potential to completely transform the education industry. Open AI and Chat GPT can help students have a more customized learning experience by evaluating their unique learning tendencies and offering tailored content and feedback. Additionally, these technologies can automate administrative duties like scheduling, grading, and administrative assistance, freeing up instructors' time to concentrate on teaching and improving their interactions with students.

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