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# Introduction

## Chatbot and short History

"Intelligent agents" refers to both computers and software that can make and study smart hardware and software. Every day, AI is becoming more and more important. Artificial intelligence can do a wide range of jobs, from simple physical work to more complicated tasks. A robot is just an AI system that looks like a person. It is also one of the easiest and most popular ways for intelligent people and computers to talk to each other. (Bansal & Khan, 2018)Smart bots, talking agents, digital helpers, and artificial discussion beings are all names for chatbots. Chatbots can act like people and make people laugh, but that's not what they were made for. They can be used for things like school, learning, running a business, and online shopping.The chatbot talks to users through their social network without them having to leave the message app, which checks who they are. (Shawar and Atwell2007) The message system includes safe and reliable ways to pay, and the alert system lets inactive users get back in touch with themselves. (Hosseini, et al., 2023) Group chats can share and use chatbots. There isn't much data needed, and robot experience is easy to share. Developers gain from reliable communication, quick and easy production cycles, version fragmentation, and interface design that is as simple as possible. (Klopfenstein, et al., 2017)

Eliza was the first robot that was ever written down. It was made in 1966, and the idea was that it would act as a counsellor by asking questions about what the user said. (Weizenbaum, 1996)In 1972, a personality-filled robot named PARRY was created to be better than ELIZA. The computer ALICE was made in 1995. It passed the Turing Test, which is given every year, in 2000, 2001, and 2004 and won the Loebner Prize. It was the first time that a machine was called "most human." ALICE uses a simple pattern-matching algorithm, and its intelligence is built on Artificial Intelligence Markup Language (AIML), which lets writers describe the parts that make up the chatbot's intelligence. (Wallace, 2009)

## Significances of chatbot

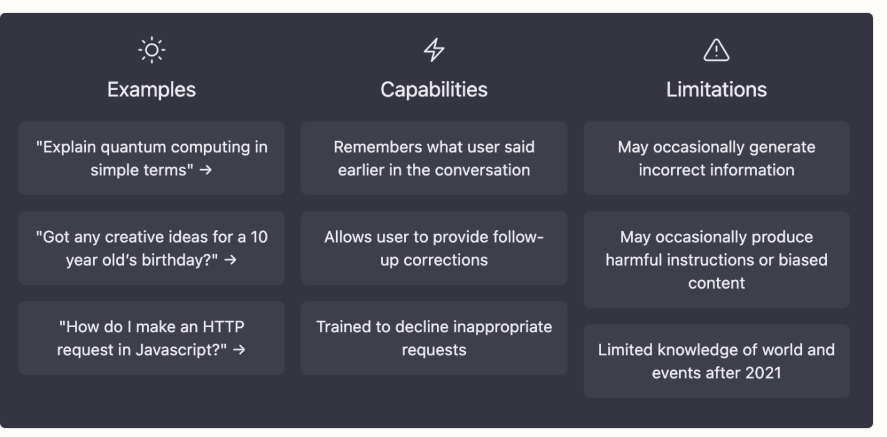
There are many important robots, and many people use them every day for simple tasks and other things as well. Chatbots can also be used to teach, help people feel better, and keep things safe. Teenagers who are good with technology spend a lot of time on social networking sites and instant messaging apps like Slack and Facebook Messenger. In this world, Chatbots are being used more and more to help students talk to each other. Chatbots might be able to give students the right information right away, like evaluation standards, due dates, and where to find suggested resources. Not only can these Chatbots help students and get them more involved, but they can also help teachers do less work so they have more time to work on courses and study. (Cunningham-Nelson, et al., 2019)The Intelligent Healthcare Chatbot, or HECIA, was one way that a chatbot was used. She was a robot set up in a hospital to help doctors and nurses save time. People who work in hospitals are said to spend 4500 hours a year showing people where to go. HECIA was designed to send patients to different parts of the hospital, take into account their symptoms, and either diagnose them or send them to a doctor who could help them figure out what was wrong. (Kasinathan, et al., 2017)

## Types of chatbot

Since 1966, there have been many different kinds of robots on the market. We use chatbots a lot in our everyday lives, and there are three main kinds of chatbots. There are chatbots that work with menus and buttons, chatbots that work with keywords, and chatbots that work with context. Each of the robots is important in its own way. In chatbots with menus, the information is shown in the form of boxes or drop-down options. These robots are based on the idea of decision trees, in which you make choices to get the answer you want. In Keyword Recognition, they look for certain words or lines to do what you want. They pay attention to what the user types and do something about it. The bot uses algorithms to figure out what to say to the user. It does this with the help of AI and a list of keywords chosen by the user. The contextual chatbot is one of the most cutting-edge types of bots you can use today. They use Machine Learning and Artificial Intelligence tools, such as speech recognition and text-to-speech translation systems, to figure out how the user feels. The bot gets smarter and changes as it meets more people. (Gupta & Hathwar, 2020)

## ChatGPT and it’s history

ChatGPT is a robot that uses OpenAI's GPT-3 language model. Its goal is to make text replies that sound natural based on what the user says and the context of the conversation.OpenAI ChatGPT was built using a large database of conversations between people. It can respond to a wide range of ideas and questions. The robot could be used to help customers, come up with new content, translate words and phrases, and give answers in different languages. When we look at chatGPT's past, we can see that chatbots like chatGPT have been around since 1966. The first robot, called ELIZA, was made during this time. ELIZA acted like a psychologist by asking questions about what the person said. The first online chatbot, ALICE, was made in 1995. It was built on ELIZA. ALICE used sequence-matching to let people talk about any topic on the web. It took years to get better before it won the Loebner Prize for computer software that is most like a person. ALICE was built with AIML, a new language that was made for this reason. ALICE had 41,000 templates and linked patterns, while ELIZA only had 200 keywords and rules. ALICE wasn't smart, and she couldn't feel or act like a real person. (Adamopoulou & Moussiades, 2020). In the 2010s, researchers were able to use deep learning techniques to train huge neural networks on very large sets of text. This totally changed the field of natural language processing. OpenAI's Generative Pre-trained Transformer (GPT) is a deep learning model that can make text that looks and reads like human writing. 2018 was its first year. OpenAI released GPT-2 in 2019, which is a better version of their old text generator. OpenAI released GPT-3 in 2020. It is one of the biggest and most advanced language models ever made. ChatGPT is based on the GPT-3 architecture, which uses the latest results in natural language processing. It can make words that sound natural and human in reaction to a wide range of inputs and instructions. The history of ChatGPT is intertwined with the history of natural language processing, which has made a lot of progress in recent years thanks to the growth of deep learning and the ability to analyse more data. (Zhou, et al., 2023) They made a list of what different modern systems can do and what their limits are. They also compared the three systems. In this study, these three apps are compared to keep studying robots.First, LaMDA's AI Kitchen's "imagine" structure makes it interesting to hear what the chatbots think about life at an innovative organisation. This review questions how creative the methods are. Second, BlenderBot has a unique design that uses agents from different places. Third, they used ChatGPT to write essays and sent them to a well-known method for finding plagiarism because they were worried about school. Meta AI has just made BlenderBot, a robot with a language model with 175 billion parameters, available to the public. BlenderBot is different from other robots because it can search the web on its own to find information. In August 2022, after about 70,000 encounters, BlenderBot was ready to be used.Google launched LaMDA (Language Model for Dialogue Applications) in their AI Kitchen in August 2022. It came with three companion programmes: "Imagine," "List About It," and "Talk About It (Dog's Edition)." OpenAI put out their robot ChatGPT on November 30, 2022.ChatGPT works like a conversation and can send information in a way that is easy to understand and looks a lot like human writing. On January 30, 2023, they improved the system's ability to deal with facts and numbers. The end of ChatGPT is set for 2021. (O'Leary, 2023)



## ChatGPT function with Diagram

OpenAI has made a language model for AI called ChatGPT, which stands for "Chatbot based on Generative Pre-trained Transformer." It works with methods from natural language processing (NLP) and deep learning. The Transformer Neural Network is what ChatGPT is built on. In this system of nerve cells

Diagram

Description automatically generated

In this Transformer neural network, there are certain rules that GPT must follow. Machines can't understand words, so during input embedding, they turn words into vectors. There is also something called a "embedding space" where similar words are grouped together based on their physical meaning and words are turned into vectors. When the same word is used in different lines, it has a different meaning. This is because positional encoding keeps embedding space in words according to their meaning. In multi-head attention, there is attention and self-attention, where every word in the line is looked at to see how it fits with other English words. In the second feed-forward neural network, each attention is treated individually. This network accepts attention vectors one at a time, and each attention vector is independent of the others. It then changes the vector into a form that the next encoder or decoder layer can understand. So, the training process is like changing from one language to another. First, a certain language goes through the encode layer, and then another language goes through the decode layer. And when the machine does output embedding, it turns the word into a vector, just like the encoder part does. And in the multi-heading part, the encoder decoder pays attention to how much the output embedding vector is linked to the input embedding. After that, each attention vector is sent to the feed forward unit. There, all the attention is sent to the next processor or layer in a way that is easier to understand. And the linear layer is another source for the linked layer to use to make the outer decoder vector bigger. And in the end, softmax turns all the vectors into words, and the last word is taken as the one with the highest chance. ChatGPT works the same way as this method. (Ankit, 2023)

Timeline

Description automatically generated with medium confidence

# Literature Review

## Review 1

Gupta . et. al. in 2023 has done simple research in which ChatGPT was instructed to "give novel systematic evaluation ideas" for aesthetic, craniofacial, microsurgery, and hand plastic surgery themes to cover its diversity. The open AI model was given 10 overall comprehensive reviews and 10 focused on 2 aspects for each issue. ChatGPT has shown that AI can correctly respond to user input, but not perfectly. ChatGPT uses humanistic aspects to improve its behavior and task completion. (Gupta, et al., 2023)

## Review 2

Rahaman , 2023 in this article presents ChatGPT, a new concept that bridges the gaps between business, technology, entrepreneurship, and innovation. The research showed that using ChatGPT can increase the effectiveness of a wide range of business, economic, and entrepreneurial activities. It is essential to keep in mind that ChatGPT has to be made more robust; it still makes a number of mistakes and provides inappropriate answers. (Rahaman, 2023)

## Review 3

H. Holden Thorp in 2023 was published an article in that It found facts, but its scholarly writing needs improvement. The ramifications for education may encourage academicians to reconsider their courses and provide AI-resistant homework. That may be better. Academic reviewers caught 63% of ChatGPT-created abstracts in recent research. “ChatGPT sometimes produces plausible sounding but inaccurate or nonsensical answers,” the website notes. Machines help people form hypotheses, plan experiments, and interpret outcomes. (Thorp, 2023)

## Review 4

This survey for chatgpt where author was Mohammad Hosseini who did survey in education and medical line where in survey that less than 50 % of the people used chatgpt. With response there are positive and negative response that chatgpt helped in fixing a lot of problems but also with negative that this caused also plagiarism. And also that most of the chatgpt users are medical and research trainees in their training and also ChatGPT was considered damaging to education since it might be exploited to discover quick solutions and replace hard effort and comprehension. ChatGPT-like technologies were seen to put clinical reasoning at risk. (Hosseini, et al., 2023)

## Review 5

Jan Homolak in 2023 posted an article where it was shown that ChatGPT scored 66% and 72% on Basic and Advanced Cardiovascular Life Support examinations, respectively, and passed the US Medical Licencing Exam. They were famously lousy at context and subtlety, which were essential for safe and successful patient care, which included applying medical information, concepts, and principles in real-world contexts. Frey and Osborne believed that while administrator health care positions are likely to be automated, physician and surgeons jobs were just 0.42% likely to be automated. (Homolak, 2023)

## Review 6

Yejin Bang in 2023 submitted a report which was shown that ChatGPT was technically evaluated utilising 23 data sets for 8 typical NLP application tasks. These data set including a new multimodal dataset test ChatGPT's multitask, multilingual, and multimodal capabilities. ChatGPT averages 63.41% accuracy in 10 logical, non-textual, and commonsense reasoning areas. (Bang, et al., 2023)

## Review 7

Tufan Adiguzel in 2023 write and published an article in that where AI tools might revolutionize schooling.ChatGPT is a popular tool for rapid replies to a wide range of problems, from simple to sophisticated. It sparked their curiosity and creates engaging learning environments with technologies like Smart Sparrow.Students receive specific activities and immediate feedback from their work and learning process. ChatGPT "might manipulate and deceive people," according to BEUC's Deputy Director General. Russia, China, Venezuela, Belarus, and Iran have banned ChatGPT for spreading US political propaganda. (Adiguzel, et al., 2023)

## Review 8

Fabio Motoki with other in 2023 wrote article that where their research proposed a unique empirical design to infer if AI systems like ChatGPT are biased (in our instance, political prejudice). In summary, researchers ask ChatGPT to address ideological issues by impersonating a political side. Researchers next compared these replies with its default responses, without naming a political stance, as most individuals would. This comparison measures how much ChatGPT default replies were connected with a political perspective.Researchers found strong evidence that ChatGPT had a considerable left-wing political bias using a questionnaire often used in political and ideological investigations. (Motoki, et al., 2023)

## Review 9

Ismail Dönmez, Sahin Idil, Salih Gulen in 2023 reviewed and wrote an article that ChatGPT was trained on books, articles, and webpages on news and fiction.Most applied research involves creating research summaries and literature synthesis, which ChatGPT should help with.The results showed that ChatGPT is a strong tool in education, but additional instructions should be made on how to utilize it securely. According to numerous academics, ChatGPT's capabilities have sparked public enthusiasm and panic since its inception, even if its replies were still defective and its limits were readily bypassed. (Dönmez, et al., 2023)

## Review 10

ChatGPT and seven CNS tumor experts received clinical, surgical, imaging, and immunopathology data. Two (20%) were gliomas with a low grade and eight (80%) were glioblastomas.The experts were given a questionnaire to evaluate ChatGPT's diagnosis for particular glioma types, adjuvant suggestions for adjuvant therapy regimen, the degree to which the chatbot incorporated the patient's overall functional status into decisionmaking, and the quality of the suggestions. Experts regarded ChatGPT diagnostic suggestions as bad. (Haemmerli, et al., 2023)

## Review 11

Malik Sallam in 2023 reviewed an article that where he had written that using PRIMSA criteria, PubMed/MEDLINE and Google Scholar were searched for English-language ChatGPT studies or preprints in medical education, research, or practice. 60 recordings qualified. 51/60 (85.0%) results showed ChatGPT improved scientific writing, equality, variety, and health care research.ChatGPT raised ethical, copyright, transparency, legal, bias, plagiarism, lack of originality, error, and hallucination issues in 58/60 (96.7%) recordings.misunderstanding, incorrect citations, cybersecurity problems, and infodemic danger. ChatGPT can transform healthcare education, research, and practice. (Sallam, 2023)

## Review 12

Hickey posted an article in about ChatGPT where the qualitative operational case study examined ChatGPT in early adopter teaching. The first phase of the three-stage study demonstrates that social media discourse was positive and that education was enthusiastic about its use. Some educators use ChatGPT warily. Second-stage ChatGPT examined educational change, response quality, usefulness, personality and emotion, and ethics. In the third and final stage, 10 instructive instances showed cheating, ChatGPT honesty and truthfulness, privacy deception, and manipulation. (Tlili, et al., 2023)

# Analysis

In this analysis, we looked at the different ways that chatgpt can be used. We found that LLM technology, which includes chatgpt, will dominate healthcare teaching, research, and practise. ChatGPT powers must be used safely and properly because people are worried about how they could be abused. Future problems might be less likely if LLM technology is used in a proactive way and ethical and legal issues are thought about. By getting around language obstacles, ChatGPT and other LLMs can speed up innovations in health care and make research more fair and inclusive. (Sallam, 2023) Health care education, study, and practise can all be changed by ChatGPT. Because it has some flaws, this AI programme should be used with care. ChatGPT can't write for scientific journals because the ICMJE/COPE rules don't allow it. ChatGPT is unique in that it can easily interact with people and talk about interesting things. This lets you have long, possibly endless conversations with the robot until the conversation is over. The model apologises, questions user presumptions, and rejects unacceptable requests. The people who made ChatGPT used a lot of real-world info from people to fine-tune GPT-3. (Chatterjee & Dethlefs, 2023) ChatGPT-made content may be wrong, misleading, or sound convincing enough for human writers to accept it without question. In the play by Edmond Rostand, Cyrano helped Christian de Neuvillette. ChatGPT's place in science is the same. For researchers, ChatGPT can write engaging content on any subject or edit a simple, unrefined draught in any style.Researchers will have to be much more careful about what they read in print, especially papers made by ChatGPT. (Stokel-Walker, 2023) Medical students can learn and practise with ChatGPT or a similar broad language model. ChatGPT pretends to be a patient so that students can practise making diagnoses and talking to people in a safe and controlled setting.Medical students can learn and practise with ChatGPT or a similar broad language model. ChatGPT pretends to be a patient so that students can practise making diagnoses and talking to people in a safe and controlled setting. Teachers and experts were fooled by it. (Hisan & Amri, 2023).

This ethically approved study sent a survey to people in the US who use ChatGPT at least once a month. The goal was to find out if there was a link between trust, desire to use, and actual use for health questions. From February to March of 2023, 40 people took part in the poll. Responses to a poll with a Likert scale were used to figure out Trust and Intention to Use, and Actual Use was the last variable. Characterization was done on study factors. (Choudhury and Shamszare, 2023) The ease of use and reach of ChatGPT could make scholars more productive. Since ChatGPT can receive and send material in different languages, it could help spread knowledge without being limited by the English language. But ChatGPT can have wrong or false information, which makes people worry about academic disinformation. The COVID-19 infodemic shows how dangerous it can be for doctors to share false information. (Liebrenz, et al., 2023) ChatGPT agrees with what past studies have said about how different language models may have similar ethics problems. Some LLMs screen personal information in an honest way. Second, release language models should be tried in a lot of different situations and with a lot of test samples. (Zhuo, et al., 2023). The fact that ChatGPT might be able to help streamline clinical workflow is good news, as it could lead to lower costs and higher output in healthcare. This was recently shown by Patel and Lam, who showed how ChatGPT can quickly make discharge summaries, which can help lighten the paperwork load in a hospital setting. ChatGPT and other LLMs can also have a big impact on health care by making it easier to diagnose, predict disease risk and result, and find new drugs. As a promising application for making decisions in radiology, ChatGPT did a good job of figuring out the imaging steps needed for breast cancer screening and figuring out what was causing breast pain. In this way that there is total transparency and can be seen clearly way in which is a less chances for the accountability issues in this chatGPT. (sallan, 2023)

# Conclusion

In conclusion, we are about to find that all the ChatGPT along with all the other chatbot and AI tools is developed since 1960s. with all these chatbot there were huge support in all the different fields which are scientific research, medical and education. These fields are the most important fields in our daily basis life and since 1960s Chatbot is doing it’s best for providing 100% fully support in these fields. Many researchers, scholars from different fields had done their research in that Chatbot to find out about that these AI tools like ChatGPT is compatible for using in a daily basis. And after research, many of them gave them a positive response along with some of negative response. In their research paper we found that how that researcher did their research in their own fields and find out all the Pros and Cons of the chatGPT and in which way that the chatGPT and other Chatbot can be used in the following fields and how much support these system provide to that fields. Along with the support in these fields that there might be seen some of the issues in chatGPT like trust, ethics and accountability issues. In this chatGPT there can be seen some of trust and ethics where that user can be able to find that all the necessary resources for his or her research in various fields. Not only in trust and ethics there can be seen some might or might not be issues in accountability where chatGPT may be able tot show all the details in the fully transparency where user can easily able to do some research with all the proper data but even though with all the transparency data there can be seen in some of the fault. But in the end that chatGPT is developed with all the proper training and testing where user can be able to do most of the things with the help of chatGPT and along with that chatGPT is learning new things and show the better result. In final it is shown that the chatGPT can be friends or foe both depends upon how the user uses the things according to their uses.

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