AI CHATBOTS
FUTURE AND CHALLENGES

The recent emergence of chatbots is a clear indication of the incredible transformation that artificial intelligence is currently undergoing. This is facilitating the new-age chatbots utilise Artificial Intelligence and Natural Language Processing to simulate human-like conversations and automate responses to customer queries, making it easier for users to find information without human intervention. Consequently, they are enhancing their ability to predict user requirements and provide accurate responses over time.
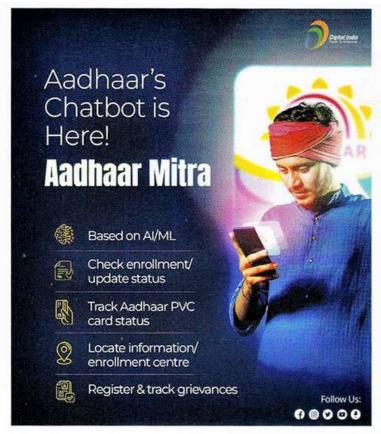
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Chatbots are not an entirely new phenomenon. Even before the recent disruption in the market, you may have encountered them, say, while exploring a website. You may remember that tiny window that suddenly appears at the bottom right of the webpage and inquires, 'May I help you?' That is a bot. Chatbot, to be more precise. Though this one may have been a conventional chatbot with limited capabilities to converse with humans, understand user input and provide accurate information. Moreover, it could only understand text-based input.

In simple terms, a bot is a piece of code, a programme, or an application that can conduct pre-defined tasks using a database of pre-existing responses or a limited knowledge base. They are unable to give appropriate answers to complex queries or questions that the developers did not know might be asked.

The recent emergence of chatbots is a clear indication of the incredible transformation that artificial intelligence is currently undergoing and creating. The new-age chatbots utilise AI and Natural Language Processing (NLP) to simulate human-like conversations and automate responses to customer queries, making it easier for users to find information without human intervention. They have progressed into more sophisticated, context-aware, and self-learning programmes that rely on machine learning and deep learning to create a detailed knowledge base of questions and responses. Consequently, they are enhancing their ability to predict user requirements and provide accurate responses over time. They are not limited to understanding text-only queries, as audio input has emerged as another popular mode of interaction with AI. Voice-based chatbots are interacting with millions of users worldwide almost in a manner that mimics human interactions.

Even though chatbots can be useful for each one of us, they are making a profound impact in areas such as healthcare, finance and banking, education, customer service, e-commerce, human resources, marketing, and social media. With the success of generative AI, these chatbots have also started showing their creative, analytical, and conversational sides and they are poised to play a vital role in the world of media, the arts, literature, and day-to-day productivity.

Future of Work

The way we work and create content is being revolutionised by chatbots. Recently, a tech giant has announced the integration of a powerful generative AI technology to its various applications. This chatbot can automate a range of tasks across multiple Apps. For instance, it can generate a first draft for a user to edit and iterate on, saving considerable time in the writing, sourcing, and editing processes. It can also summarise chat conversations, extract key highlights and talking points, and add recent contacts to emails. It can also assist in creating presentations by incorporating relevant content from a user's past documents, analyse trends and generate professional-looking data visualisations in seconds. This demonstrates the potential of a future where digital and human intelligence work together to achieve outcomes that are currently beyond our imagination.

One area that is facing huge change thanks to generative AI is Internet search. New capabilities are being introduced to search applications, including those of handling queries in natural language. We have used keyword-based Internet search so far, but an era of conversational Internet search has started where we can just talk to the search using queries like, 'Name the most popular tourist spot around Delhi and suggest a fast, convenient, and cost-effective way to explore it.'

The race of AI chatbots is not limited to the big tech companies, as hundreds of AI chatbots have been launched by companies of all sizes in the recent past. However, it is one of the most happening spaces in the technology world today, and we will continue to witness exciting developments and innovations that will transform the future of work in the years to come.

Use-Cases of Chatbots

When applying for a job, candidates may not be aware of the significant role technology plays in the screening process. It can assist in interacting with the candidates, scheduling interviews, and even conducting initial job interviews. When a company receives a large volume of resumes, it becomes challenging to determine which applicants are most suitable for the job. Artificial intelligence,

and now AI-based chatbots, can analyse resumes and score them based on the job requirements, shortlisting the most suitable candidates. If a highly qualified candidate's skills do not precisely match a particular role, AI chatbots can identify other job openings within the company and recommend the candidate for those positions. In fact, AI technology is involved in almost every aspect of the recruitment process, from job creation and advertisement to candidate selection, enabling HR departments to identify a diverse pool of qualified candidates. Even after the candidates are hired, the chatbots can help in answering employee queries around internal processes, payroll, facilities and benefits, compliance requirements, policies, and so on.

AI chatbots can transform the healthcare sector by offering numerous services to both healthcare providers and patients. They can function as virtual aides, offering assistance to patients with their healthcare inquiries. Their 24x7 availability makes basic healthcare accessible to people at all times and all places, and reduces the workload faced by the healthcare system. The substantial number of patients they can interact with at the same time signifies a phenomenal capability which cannot be matched by professionals. Patients can seek answers from the chatbot about their symptoms, medications, and treatment plans and receive primary medical guidance. Chatbots can also help in scheduling appointments, monitoring and following up on patient's health, educating the patients on health topics, offering mental health support, and providing emergency responses in critical situations.

AI chatbots are playing a dominant role in handling customer queries and requests across sectors and industries. Customer service chatbots can be integrated into various digital channels, such as websites, mobile apps, social media platforms, and messaging applications to help people with their inquiries and provide support. Often, they are the first customer care representatives to attend to a customer's call or respond to a chat message. Once their job is over, they hand over the call to a human professional or forward the text message to the right people for further action. The new, AI-enabled chatbots, however, are equipped with newer skills and capabilities. Many times, they can have efficient, intelligent, and informed conversations with the customers, and the interaction may not need any kind of human intervention.

Making Services Accessible

E-commerce companies are using AI chatbots to help their customers locate products that match their needs by asking questions about preferences and showing relevant products. They can also help them navigate through processes such as placing orders and making payments. In the post-sales scenario, they can manage automated tasks such as collecting customer feedback and processing product returns, replacements, or refunds. All of this can lead to an improved customer experience and increased sales for the companies.

Education is a key area where AI chatbots are becoming increasingly relevant. Generative AI can help in the digital transformation of our education system and make it more efficient and accessible. It can help with content creation, the translation of educational material into multiple languages, and even play the role of a tutor or instructor where there is a lack of teaching resources. Conventionally, chatbots have been helping students with basic tasks such as sharing personalised learning recommendations and dealing with academic and administrative queries. They have also been helping the institutions and educators manage

administrative tasks such as fee collections and automated reminders.

The banking sector uses AI chatbots as a way of reducing costs and enhancing customer satisfaction. The primary reason for their popularity is that they can minimise the expenses of providing initial support. Chatbots can address basic customer queries, while complex ones can be forwarded to human agents for further assistance. Currently, banks are adopting a hybrid approach, utilising both chatbots and human agents to manage customer support. Enabled with AI, the chatbots are becoming more advanced and competent in handling complex customer queries. We can assume that in the not-so-distant future, they will handle a larger proportion of challenging customer inquiries, which will further decrease the need for human agents and their associated costs. Chatbots will also be helping banking professionals in their internal administrative tasks, such as summarising a customer's profile, analysing eligibility for banking services such as loans, and flagging potential security and privacy breaches.

Challenges

The biggest concern about AI chatbots is that their increasing use can result in a considerable number of people losing their jobs since AI is gaining capabilities to match human output and intelligence. Only time will tell how we as a civilisation will adapt to the emerging trends in the technology space: whether we will use AI and its agents as our assistants, tools, or actual replacements for human labour.

We have two schools of thought with differing views. One of them thinks that once the hype around it subsides, AI will be seen as the result of a natural process of development and innovation. When the Internet and computers first arrived, many people had similar fears, but with the passage of time, we learned to use them as tools for human empowerment and productivity. The same may happen with AI.

The second school of thought feels that the power and capabilities that AI can acquire over time are beyond what we can visualise, especially considering the speed with which things are happening. If we do not put a break on its uncontrolled development, AI can become a challenge for its creator itself. However, both schools of thought realise that its continued development in a controlled and planned manner under reasonable human supervision, limitations, and guidelines may be the safest bet.

Other challenges that AI chatbots are associated with include their improper responses due to misunderstandings, their lack of emotional intelligence, which may result in biases and a lack of empathy, and their compromises on privacy. There are also some ethical issues, and over-dependence on technology is another concern as it can impact our emotional, intellectual, and physical health. In a nutshell, we must take advantage of the emerging technology revolution, without forgetting the limits we are not supposed to cross. ❑

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