AI (Artificial Intelligence) in Daily Life

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Abstract

Natural language-based interfaces are frequently used in user contact with virtual assistants to overcome accessibility issues that some user groups may encounter. Although there are worries about how AI may affect jobs and possible biases in the use of virtual assistants, the technology has promise in a number of areas, such as everyday work support and mental health therapy. This paper evaluates the uses of AI in daily life in a comprehensive and informative manner.

Introduction

Developments in networking, hardware, algorithms, and sensor technologies have accelerated the creation of cybernetic programs, such as social robots, chatbots, and virtual assistants. Natural language interfaces (NLI) are being quickly adopted by major tech firms who anticipate a big change in user experience design.

There are possible advantages and disadvantages to task automation, ranging from medical help to housework. Task automation may result in problems including joblessness, risks to one’s safety, and privacy difficulties. With uses spanning from companionship to health care, artificially intelligent assistants as well as social robots are becoming more common, changing daily lives and inspiring multidisciplinary research in applications of artificial intelligence.

Natural language-based interfaces are frequently used in user contact with virtual assistants to overcome accessibility issues that some user groups may encounter. Although there are worries about how AI may affect jobs and possible biases in the use of virtual assistants, the technology has promise in a number of areas, such as everyday work support and mental health therapy. This paper evaluates the uses of AI in daily life in a comprehensive and informative manner.

History of automation

The Greek mythology states that Talos, a robotic statue, was created by the god of innovation and technology, Hephaestus. Talos was sent by Zeus himself to safeguard Europa. Although automata have existed since the dawn of civilization, AI has recently begun to be more thoroughly defined and implemented. The scientific investigation of command and interaction in both living beings and machines is what Norbert Wiener defined as cybernetics in 1948 (Wiener 1948). Since then, this definition has been refined to encompass a number of computer science fields, such as artificial intelligence and robots.

In order to determine if robots can accurately mimic human behavior and, consequently, think, Alan Turing designed the "Imitation Game" (also known as the Turing Test) in the 1950s. Turing projected the existence of these machines by the end of 2000. With the rise in popularity of chatbots and AI assistants, people now believe that this is an incredibly doable undertaking. One of computer science’s original objectives is to mimic human behavior. AI was defined as "the potential of a machine to replicate intelligent human behavior" using these definitions (Russell & Nerving 2009).
Advances in low-cost sensor manufacture, algorithmic developments, networking infrastructure, and hardware shrinking are focusing more and more attention on cybernetic programs, such as chatbots, virtual assistants, and social robots. These are many AI applications that simulate various aspects of human cognition, most notably naturalistic speech. Businesses like Amazon, Apple, Google, Samsung, and others are adopting NLI, or natural language interfaces at a very rapid pace. It has been predicted that NLI interfaces, including conversational agents that operate in robots and virtual assistants, will represent the next significant change in user experience designs (Moore & Arar, 2018).

Virtual assistants are used by 44% of smartphone users, according to a survey (Verto Analytics 2017); this is a higher percentage than the 34 percent of smartphone owners who have installed online search applications. Smart displays, desktop computers, cellphones, speakers (such as the Amazon Echo, Google Home, and Apple Homepod), and other gadgets are frequently equipped with virtual assistants.

A robot that is able to comprehend, relate to, and engage with users is referred to as a "social robot." In addition to having the capacity to move various parts of their bodies mechanically, social robots can also serve as virtual assistants. According to Chen (2017), there are four main uses for residence or social robots now on the market: health and treatment, education, public areas and workplaces, and residential environments. Jibo is one commercially available example of these robots.

Additionally, there are programmable humanoid robots, like NAO robot, that can function as social robots. Virtual assistants and social or household robots are becoming more and more popular. Our everyday lives will be drastically altered by house robots and virtual assistants, as a result of growing computing power, an older population, and more customized lifestyles. There will be more opportunities for cross-disciplinary research that focus on AI applications.

**Automation of tasks**

Helping people with everyday tasks like cooking and dishwashing has long been one of the expectations placed on computers and robotic devices in the home. Robots that are effective at performing household chores include those that mow lawns and vacuum homes. These services fall under the task automation category. As was already noted, task automation has many potential uses, but there are also certain hazards involved.

First, users may be more likely to become obese and inactive if mechanical labor is substituted for human labor. Unemployment amongst skilled assistants who provide comparable services, such as house gardeners, is another often cited issue. This is still a matter of dispute among sociologists and academics (Walsh 2018; Su 2018).

Second, mechanical mistakes involving a hard-bodied robot coming into touch with a human body that is rather brittle might have devastating consequences, necessitating extreme caution and risk evaluation. More study on safety is required in light of recent publications (Cerrudo & Apa 2017) that explore the physical harm that robots can inflict on their owners.

Third, task automation introduces benefits and drawbacks for applications related to health. Medical robots and virtual assistants connected to health have been the subject of current study by the health care sector (Borenstein et al., 2018). For example, there are robots made to fulfill both emotional and sexual demands. For those who struggle to develop closeness and interpersonal interactions, these technologies may be helpful. However, this presents certain ethical issues (Javaheri et al., 1905), such as the worry that users of sexual aides would become more socially isolated.

Apart from these difficulties, gathering data to meet specific requirements could put users’ privacy and security at risk. This is particularly the case for systems that aggregate large datasets containing user information that is inherently private and frequently confidential, like user data and recorded voice conversations that are exposed to third parties in particularly private areas (like their bedrooms).

Designers and legislators should take into account unanticipated health hazards, security and safety concerns,
moral conundrums, and system privacy in order to lessen these difficulties. For example, taking privacy issues into account while putting their algorithms into practice and designing their system entirely offline from a server (Rawassizadeh et al. 2018), which entails protecting all data gathered locally.

**User communication**

Virtual assistants and social robots often consist of a personality-driven software component that allows for the naive integration of emotions and mostly uses voice interfaces for natural language-based communication. These elements should help social robots and virtual assistants avoid usability problems that are relevant to mobile health apps (Sharit et al., 2014). For instance, information is frequently represented by graphs and statistics in mobile health applications, even though graph illiteracy is a serious issue even in affluent nations. This suggests that these apps are likely to underserve a number of user categories, such as elderly users and individuals with inadequate numeracy and mild visual impairment.

Conversely, in terms of accessibility, conversational agents are used by robots and virtual assistants to communicate with people Klopfenstein et al. (2017). Therefore, these systems may converse or communicate with users in a manner similar to that of doctors or other healthcare practitioners, rather than only displaying graphs and figures. Communication with some marginalized people can be facilitated by interaction based on natural language, particularly those who have cognitive or visual disabilities or who are illiterate in numbers or graphs. We merely give the example of one area where these platforms might benefit marginalized communities—mobile health applications. With the same mindset, several different kinds of apps may be built for marginalized populations.

A growing body of research has shown that people’s addiction to video games and cellphones has detrimental effects (Sioni et al. 2017). This contentious theory has its roots, at least in part, in computer entertainment. For example, the gaming industry has shown that people have a deep commitment to virtual pets such as Tamagotchis. Virtual assistants and artificial pets have a lot in common, particularly when it comes to psychological connection.

In fact, a lot of people think that there are more hazards involved with human-machine interactions than benefits. People who possess compassion, emotional intelligence, and an abundance of social and cognitive skills tend to form bonds with other people. Virtual assistants and robots may be able to meet people’s demand for company. Studies on children’s interactions with robots (Westlund et al., 2018), smart speaker systems (Druga et al., 2017), and AI assistants (Lovato and Piper, 2015) have been conducted.

Virtual assistants serving as professional therapists or coaches, for example, to improve mental health, are another example (Fitzpatrick et al. 2017). They can be applied to treat or lessen physical, mental, or cognitive problems. They may converse with users and offer feedback in the direction of reaching particular objectives; they frequently mimic human speech by utilizing natural language. They may provide comments either proactively or reactively, much like a human coach. These services seem promising.

They do, however, carry certain concerns, including the potential for widespread unemployment and the potential for user prejudice toward particular goods, services, or viewpoints. Current conversational agent implementations are less inclined toward open application development than devices that offer graphical user interfaces. Consequently, the default functionality offered by their providers is the only options available for current systems. Users’ mindsets can be influenced by biases.

For instance, a company may contemplate promoting a certain pop-culture expression that occasionally goes against societal norms and values, or it may want to profit from its technology by providing material that serves its organizational objectives above the accepted standards of the user community. A virtual assistant may, for instance, play music at random or broadcast commercial songs that encourage drug use and violence.

**Futuristic Aspects of AI in daily life**

Virtual assistants are going to advance in utility and integration into our daily lives beyond booking reservations and carrying out basic conversations. They must not only know what is required before we ask, but
also be aware of the setting of our talks and respond appropriately. Imagine that the children’s classes are canceled due to a snow day. Your phone would automatically ask if you’d like to shift your appointments to the following day, recognizing that you had to stay at home with your kids. Your entertainment system would also automatically recommend movies for viewing and e-books for reading.

Best of all, when you are out digging snow, your smart speaker will suggest meals for lunch. On the other hand, picture how much more enjoyable it would be to return home after a business trip if your mobile device could automatically find a car that is waiting for you at the airport based on your habits, location, and travel schedule. There are countless options. Furthermore, interactive speech may start a discussion more effectively than fingertips on glass. Take the banking industry as an example. Now that communication is no longer restricted by geographical boundaries, we might picture a future in which banking either completely vanishes or expands beyond its historical boundaries. A variety of modalities, such as smartphones, laptops, smart speakers, and linked appliances, will redefine the concept of money where physical borders formerly delineated bank offices for both customers and institutions.

Today’s consumers expect smooth and reliable digital experiences whether they are making financial transfers, downloading music, or making online purchases. These days, consumers choose the terms and times for what they desire. Financial institutions need to learn from the digital environment and exercise caution when utilizing voice technology to improve daily financial operations and further develop the mobile experience. They shouldn’t just mimic branch and mobile payments through pre-recorded audio conversations. Virtual assistants are capable of much more than just a simple robotic voice. What may occur if AI had empathy and contextual awareness? Consider a day when this ambient technology gets to know us so well that it can serve as our personal CFO, always guiding us toward the greatest financial results over time, taking into account its knowledge of our home, our lifestyle, our longevity, and our health. Will we have enough faith in it to let it decide for us automatically? The way that society views and accepts machines will play a big role in that.

**AI and its uses in current lifestyle**

Robots are utilized in nursing homes and hospitals to prevent elders from feeling isolated, and robots for education are also used to aid kids with their English language proficiency in Japan, a country where humanoids are accepted more readily. Some people have even gone so far as to fall in love and form relationships with robots, as seen by the holographic AI avatar Hikari Azuma created by the massive Japanese messaging app Line. AI gives us the chance to completely rethink the value exchange as well as the user experience. Beyond the conventional data silos, artificial intelligence (AI) can create a comprehensive 360-degree picture of a consumer’s daily life based on prior habits and actions by combining a wealth of data sources.

Machines and humans can coexist together because of their shared capacity for learning, processing, and augmenting. And Amazon suggests that this future might not be all that distant after all. In reality, Amazon is striving toward a time when people will be able to have natural back-and-forth conversations with smart speakers as well as other connected gadgets thanks to artificial intelligence and machine learning.

**Conclusion**

In the future, it is anticipated that virtual assistants will become more seamlessly integrated into daily life and exhibit empathy and contextual awareness. If society is able to overcome ethical concerns and foster confidence in these technical breakthroughs, artificial intelligence (AI) has the potential to play a bigger role in molding and improving human experience—from managing daily routines to providing financial advice.

We have the ability to build a future in which our voices together may improve humankind and where our daily acts and ideas are motivated by a sense of purpose. Perhaps it’s not technology that constrains us, but rather our ability to imagine beyond the boundaries of what is now possible and our readiness to put our faith in robots.

**References**


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