Contribution of Social Robots to Interact with Humans and Others in Taking Over Entire Job Functions, Such as Greeting and Basic Customer Service in the Workplace

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Abstract

This article is based on the contribution of social robots and their interaction with human beings. This study has highlighted the entire concept of social robots and it has been described that social robots are one of the assembling technological concepts that use artificial intelligence, sensor circuits, devices, and mechanical parts. These kinds of robots behave like a human and it has all the artificial and updated necessity such as an artificial mind, artificial sensations, voice, and other essential things. On the other hand, these technological instruments can able to provides suggestions to individuals and also communicate with them. This process helps people to create an easy lifestyle and also proceed to work smoothly.

This study has also highlighted the impact of social robots in industry and the workplace. It helps to improve the work procedure and also influences the employees to do better work in the working area. It can be said that these intelligent robots help to improve the working culture and also makes an impact on the working environment. Accordingly, this article also focused on the various types of social robots and their benefits. This article also discussed the innovative and effective robots that influence the working atmosphere people can easily get suggestions from these modern technologies. This paper has used a secondary qualitative method for the study and it helps to provide the essential knowledge that raises the authenticity of the research paper.

Keywords

Artificial vision, artificial hearing, artificial touch, artificial intelligence, hitchBOT, Kismet, Social robot.

INTRODUCTION

A social robot is a combination of technologies that include artificial intelligence technologies, mechanisms, updated software, devices, and other things. This study will focus on the description of social robots and also will discuss their interaction with human beings. These kinds of robots generally use various kinds of parts such as a control system, drivetrain, manipulators, cameras, and other mechanisms and technologies. According to Elastic Nanotubes, Electroactive Polymers, motors, and piezo motors are the fundamental needs of robots. Nowadays people are trying to use the facilities of robots due to they can provide services without zero percent of human error.

This article also discussed the different kinds of social robots and also discussed the function and benefits. All the robots have some significant characteristics and vital functions. These kinds of social robots are used in different industries to decrease the load of work and laborers and also assist to get accuracy from the work. On the other hand, these technologies can be able to create a relationship between humans. Some researchers examine the effectiveness of this robot-human relationship and they observed that this relationship helps people get rid of their stress, depression, and anxiety. Moreover, the workplace is the area, where people spend their maximum time in a day. Some industry has taken initiative to implement robotics in their working area. It has several advantages such as, it can reduce working pressure, providing solutions, giving training, improving production, reducing cost, and others. Accordingly, employees can change their working process, and thinking, increase decision-making, engage with the job, applies creativity in the workplace. Moreover, it is beneficial for the customers due to providing the services. The social robot can able to interact with customers and provides a satisfactory reply to their queries. According it can greet the customers on their special day and it is available 24*7. Those factors increase the retention rate of the customers and make an effective impact on the organizations. This study will also highlight the facilities or contributions of social robots in the workplace that may make a renaissance in the technological world, industry, and workplace.

LITERATURE REVIEW

Concept of social robots and their interaction with humans

In the modern era, a Social robot is one of the famous artificial intelligence that is designed to interact with other robots and humans. Social robots are designed for interacting with humans that are impacting the world by converting

digital data with robot programs for gaining meaningful interaction. A scientist makes robots for various purposes and includes various kinds of power full technologies, devices, sensors, and many circuits. Artificial intelligence, microphone, cameras, control system, drivetrain, and manipulators are the basic components of social robots[1]. On the other hand, to create robots, the robot scientist need requires to input Elastic Nanotubes, Electroactive polymer, motors, and piezo motors in the body of the robots. According to, the Air muscle is one of the powerful devices that provides the force of pulling and it also behaves as a biological muscle. These social robots behave like a human and also interact with humans. It makes a huge impact on human psychology and also promotes modernization. Researchers try to investigate the effects of the relationship between humans and robots. From several studies, it has been seen that these kinds of robots create an easy lifestyle for human beings and also improve their daily lifestyle. In the workplace, the social robot has a major role and it can able to do innovative work and also better than humans.


Figure 1: Types of different social robots used for interacting with humans
(Source: 2)

Different famous social robots that are helping to develop interaction with humans are, hitchBOT a social robot that attempted to hitchhike across the United States in the year 2014. Kismet is a robot head that understands and exhibits emotions whenever interacting with humans. Tico is a robot developed for improving children's motivation in the classroom. Different social environmental interactions are developed with social robots that are also beneficial for the learning development of humans[2]. These social robots are able to work in any hazardous conditions aiming towards

safety and knowledge development for humans. In the situation of high heat, highly radioactive areas, deep seas, and deep oceans social robots are used for promoting fewer difficulties for humans by working in these places. Recognition of human-robot touch is important for gaining proper growth toward the promotion of different interactions with humans.

Social robots are divided into different parts aiming towards different functions are work conditions. These parts are industrial robots, these social robots are used in different industries for reducing the workload of laborers and also help to add accuracy to the work. Different heavy object lifting and other heavy works are done by human robots and also help to develop manufacturing and assembly of the work. Medical robots are the vastly used robots that are helping patients to rehabilitate from different diseases and also helping to develop neurological impairment in humans. Elder care and companion robots are also used as medical robots for developing mental and physical support for humans so that they are not feeling depressed or feeling socially isolated[3]. Helping in daily work the social robot can be a good friend for older people. Social robots are the most effective and diversified way for development that are essential for aiming toward better growth for humans. Different speech recognition technologies are developed by social robots that are helping to ensure proper growth in the issues of motor impairment that are able to provide a controlled atmosphere for promoting growth for humans in the sector of health. The autism-affected patients are gained helped by different social robots as they are able to solve the issues of autism in humans.
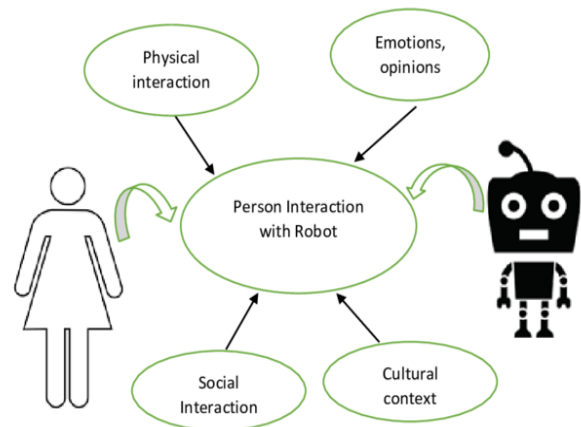
Figure 2: Different human-robot interconnection
(Source: 4)

Automatic driving facilities are developed with social robots that are beneficial for ensuring a safe path for humans by supporting driving in different conditions. A safe, secure, and comfortable environment is provided by social robots with the help of automatic driving facilities. In different rescue operations, social robots are used for ensuring the safety of life and creating a safe pathway for development. Social robots are also used for creating maps of different places that are dangerous for humans. Social robots are also used for space explorations that are aiming towards better

knowledge gathering for future generations and different new elements findings from space [4]. Agricultural robots are different social robots that are used for large-scale farming. In the food processing industry where hygiene is the main priority, these social robots are used for maintaining the proper way of hygiene policies in the industry. Artificial vision, artificial hearing, and artificial touch are developed by social robots that are ensuring the artificial senses are provided for ensuring interaction with humans. A visual environment is created for humans with the help of social robots adapting behaviors that are beneficial for providing entertainment and adopting different postures that are mirroring human behaviors. On the other hand, different social robots are also developed in such a way that they can interact with humans. Designed programming software is used for completing the interaction procedure that is beneficial for providing interactivity with humans. These are also beneficial for reducing loneliness for humans and planning growth [5]. Different voice-active working robotic systems are developed that are able to ensure growth by providing solutions for different things that are asked by humans. A human-like voice is provided for encouraging humans to grow in developing knowledge. The different manners of movement are also developed by the social robots that are essential for promoting a connection between humans and robots. Different participable responses provided by social robots are gaining a better way of understanding physical movement with the help of artificial speech which is essential for aiming toward a better future by providing an understanding of knowledge.

Impact of Social robots in the workplace

Social robots and automation make an effective impression on the industry. It has been observed that it plays an innovative role in operations and production processes as well. Nowadays some industries adopt social robots to control the entire functions of the industry, greeting the members and also participating in the training program. It helps to do the work fast and people also get inspired to use technology. It can be said that these kinds of innovative ideas increase the decision-making power of humans. Accordingly, those also participate in providing suggestions in a difficult time that helps to provide a solution. From several studies, it has been seen that there is some positive impact of social robots in the workplace [6]. It provides safety, boosts productivity, and is time-saving to the employees, and also influences people to donate 100% effort to the workplace. In current years maximum companies use the social robot in their job functions. They control the entire job procedure and also maintain the employees through intelligence. These robots can able to allocate job, maintain essential files, and provides opportunity and suggestions for the working process as well. On the other hand, social robots are also able to express their responses, understand and read the human response and also react as per the expression.

High	**3) Feeling robots** Robots capable of: • perceiving emotions • acting on the emotional readings • mimicking empathic feelings and comforting human actors • building rapport	**4) Robo-sapiens** Robots capable of: • blending/bridging emotional and rational thinking • understanding human actors through mutual learning • acting in creative and experience-based manner • sensing, comprehending, acting
Low	**1) Mechanic robots** Robots capable of: • performing repetitive, predictable and tedious tasks • doing manual work • functioning solely according to preprogrammed functions	**2) Thinking robots** Robots capable of: • rational decision making • acting in logically consistent manner • deductive logic • real-time big data processing
	Low	**High**

(Affective resources — vertical axis; Cognitive resources — horizontal axis)

Figure 3: The value of social robots

(Source: 7)

Job functions, such as greeting and basic customer service in the workplace are essential elements of social robots that are aiming towards better growth in the business. These can help to generate goodwill for the companies with the help of social robots the companies can provide a better environment for their consumers. Robots are effective and can be used in an efficient way to develop growth in the business world. Longer hours of work can be provided with the help of

different robots as they are able to gain growth in the future for the companies. Compare to humans robots are quick and efficient which is beneficial in the workplace for properly ensuring the work[7]. In difficult environments, robots can easily work by eliminating different obstacles that are affecting humans. The capabilities of an organization can be increased with the help of robots that are used in the workplace. Social robots are able used as a trainer for employees. Specially designed software programs are used for providing better training to the employees and also able to solve doubts. Unbiased recruitment is also provided with social robots that are judging the candidates based on their potential and choose the correct person for the job. Medical science and nutrition are provided by the social robots that are helping to achieve a better future through the diagnosis of different diseases that are aimed towards a better future for the people. Different stress-releasing elements are provided by the social robots that are helping to promote growth for the

employees by maintaining productivity levels. As receptionists, social robots are used that are helping to provide valuable information for the visitors and also ensure a proper greeting for the visitors[8]. As a teaching assistants, social robots are used that are helping to provide an accurate way of learning the interaction and one-on-one attention with students. As an educational tool social robots are used in an effective way to ensure progress in learning. Different countries are using social robots as workers in industries which is beneficial for providing better development in every sector[21]. The majority of using social robots in south Korea and Switzerland is the least density of robot workers in the country as per the data that developed from the survey of manufacturing industries held in the year 2019. These data are beneficial for understanding different objectives of using social robots in industries that are helping to gain growth and provided a visible difference in the country in every way.

Figure 4: The countries are using robots as workers
(Source: 9)

Wizarding processes are done to complete a better understanding of human emotion which is helping to monitor one's behavior and ability to react more fluently to this. Social robots are helping to manage the physical and mental health conditions of a person that are essential for gaining positive growth in life. Encouraging students towards studies and exercise the social robots are inspiring people by completing their health goals for them. These health coach social robots are beneficial for promoting better growth in life which is essential for aiming toward a better life. In the

workplace, social robots are used as an essential part of completing any surveys within a short period and without any problems with the hectic way of collecting the data for surveys[9]. Communicating, ordering, and managing different work processes which can ensure the emotional and social intelligence of work by providing assistance and guidance in a positive way that is essential for overcoming any situation that may create any issue in life. Help and assistance can be ensured in surgeries and also in manufacturing different products. Social robots are also used

as a form of prosthetics for humans that are providing a better way of life by solving issues of difficult life barriers[20]. The productivity of an organization can be easily increased with the help of different social robots that are easily able to ensure growth. Managing safety and time saving is an important way to develop progress in productivity and growth that is essential for gaining a positive impact in the competitive business market and being able to ahead of competitors. Reduction of accidents and working in difficult conditions social robots are able to gain positive growth in society by impacting various ways of development in the workplace.

METHODOLOGY

In a research study methodology is one of the essential portions and the whole research work follows the patterns of methodology. Some common criteria can generally use in for provides the actual values of the research paper and it consists of research philosophy, approaches, design, data analysis, and collection process. This paper has based on the positivism philosophy. Observation is one of the fundamental bases and it helps to reach the goal and objective of the research study. Researchers use the philosophy as per their experience knowledge and subject assumption. In this paper inductive approach has been considered as a research approach that helps to provide an accurate and equivalent conclusion for the study. Design is another important part of this study and there are various kinds of research designs for the research study[10]. The case study design is the best way for this study due to it uses data and information from various sources. Generally, these provisions help to get the data from a different source and it also makes an impact on data gathering and the data examination process. The secondary qualitative process provides the provision to search the data from the internet source. The social robot interaction process is a versatile subject matter and this is a wide range topic. It can change the social perspective also which is why it is essential to know the mode of social structure and psychological aspects. Scientist research the entire things interact with humans and greet them. In the world, many companies use social robots and set machines as per their requirements and needs. The secondary process only helps to know all perspectives of the world[11]. This research process is used electronic journals, articles, newspapers, and magazines to gather the information.

This information is always available in google scholar and googles search engines. It can be said that this kind of information isis authentic and also extract information by maintaining an ethical and systematic manner. This process does not require more time and effort and any professional can use this way of research. On the other hand, this process is also budget effective due to this process does not require the to pay any kind of remuneration for the data. Accordingly, it can provide large amount of data set that plays a major role in the research work. Through this research process, researchers can give their full attention to the research work[12]. In this case, information is used previously in another study and that is why these data are more authentic. Moreover, the secondary research process provides an accurate structure for the study it guides the entire study and helps to maintain the actual patterns for the study[13]. This process of research allows us to gather data about socialism and social robot. It has been seen that social robots make a modernized impact on the workplace and it also affects people's psychology positively. All the above factors are more justified to choose the secondary qualitative method for the study or research work.

DISCUSSION

From this study has been seen that the social robot is one of the innovative technologies made by artificial intelligence, and other mechanical parts and devices. It has the capability to interact with humans and also behave as a human. Microphone, speaker, motors, cameras, and census are the basic thing that helps to build a robot [14]. Accordingly, it includes the computer algorithm and another programming language to process the entire system. In the modern era, social robots allow giving opportunities to improve the environment of the workplace and boost the working capacity of the employees[19]. On the other hand, it can be said that it makes a productive impact on the industry and employees are trying to adopt these functions that empower them to create innovation in the workplace [15]. Through using these kinds of robots people can effectively play their job roles. Social robots can able to greeting humans and also interact with humans. People are able to get suggestions from these technologies and it helps to work as a friend of humans. It has all the artificial capabilities like humans such as artificial taste, artificial voice, mind, artificial sensation, and many more things.

The three common functions of social robots are sense, think and act these are beneficial for promoting better functionary for gaining growth in the workplace and society. With the help of artificial intelligence (AI) and machine learning different self-aware and self-learning social robots are developed in the future which is beneficial for aiming toward better growth. The six most common types of robots are autonomous mobile robots (AMRs), articulated robots, automated guided vehicles (AGVs), cobots, humanoids, and hybrids which can be seen in the workplace[16]. These social robots are beneficial for reducing the workload from the employees, greeting them in a welcoming way, providing basic customer care support for the consumers, and suitably doing the job functions in the organization. Social robots and AI can reduce the workforce which is effective in aiming for better growth in the future. Different influential social robots in history which are played an important role in the development of growth for humans. In the year 1961 Unimate, the first industrial robot was introduced which is an impactful step in industrial history. In the year 1972 Shakey was developed which was the first autonomous robot that created one of the biggest revolutions in human history. In the year 1994 ABE, was introduced which was the pioneer for

autonomous underwater vehicles. In the year 1995 Predators steered the era of drone warfare was introduced. In the year 1997 Sojourner Rover introduced the first rover on Mars. Speed, perfection, and consistency these things are gained from the social robots in the workplace which are essential for companies for aiming toward a better way in the competitive world. The benefits of safety, flexibility, and quality, are gained from robots for bringing growth to life and ensuring better production in the workforce aiming towards positivity for companies[17]. Elimination of different dangerous jobs for the people and increasing the capabilities of working in hazardous conditions are able to prevent accidents, saving time and organizations money. With the help of different sensors, social robots are able to ensure a connection with humans by gaining a meaningful interaction of data. Happiness in productivity is also a motive for the social robots that are able to produce growth in the workplace that can bring change in the workforce. Interaction with other robots and humans is the main priority of social robots that are effective to provide better consumer services[18]. Robotic technologies are used for helping people who are facing the issues of losing different organs such as arms, and legs. This is provided as a better gift for mankind for ensuring their safety for them. The impact of social robots in the life of humans are continously increasing with the help of different innovative facilities that are bringing growth in the countries.

CONCLUSION

From the above study, it can be concluded social robot is one of the most effective innovations in the world. Nowadays, scientists create different kinds of robots that can able to interact with humans. It can be said in one word, that these kinds of robots can able to speak with the individual as their assistants. It has the capability to create a sophisticated relationship with humans. Researchers are trying to gain knowledge about the effectiveness of the relationship between robots and humans. Nowadays social robots increase the standard of an individual's lifestyle. This study has focused on the interaction process with humans and the concept of the social robot in this study. This study has described that a social robot is a group of technologies that can provide an easy lifestyle to the individual and it can be a technological friend of a person. It can express, reply, understand and read the other's expression and point of view also. The scientist made the social robot with various kinds of devices, technologies, mechanisms, circuits, and sensors. It also uses air muscles that react as the biological muscle. Accordingly, this study has also shed light on the impact of social robot implementation in the workplace. It can allocate jobs for the workers and is also able to discuss the solution with the employees. On the other hand, the social robot can able to provides satisfied customer services and increase the base of customers. Accordingly, it can be said that social robots have the capabilities to interact with the costumes by providing essential information and fulfilling their queries. This study has utilized the benefits of the secondary research process to get the worlds based researched data on advanced technology. This process is much time-saving and used various sources to extract effective information for the study. At last, it can be stated that social robots help workers to learn advanced technology and apply their creativity in the working sector. Finally, it can be said that social robots can make innovation and it make a renaissance for the future generation.

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