

The future of robots essay examples

[Technology](#), [Development](#)



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Introduction

This essay discusses the future of robots. But what exactly do we mean by “robot”? The Oxford dictionaries’ primary definition of a robot is “a machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer.” (The dictionary claims the origin of robot to be from the Czech robota, meaning forced labor).

However, to many, a robot is envisaged as a machine in more or less human shape, having the human-like capabilities of intelligence, of speech, and movement. An example could be the gold-colored figure of C3-PO in the Star Wars movies. In reality, robots come in all shapes and sizes, most not resembling the human form in the slightest, nor being provided with or needing capabilities like speech or mobility away from a fixed base. As advancing technology allows the devising of new and more efficient

computers and machines, and scientists and engineers come up with ways of utilizing and programming them, robots and their influence on our lives and society will increase in complexity, diversity and capabilities.

Robots in the Home

We already have robots in our homes, although we don't call them robots. They have more familiar names like the dishwasher and the washing machine, which these days are fitted with intelligence in the form of mini-computing devices. Just because they don't move around from their plumbed-in positions in the kitchen or utility room, we tend not to think of them as robots. How will kitchen robots develop in the future, to make life for the housewife less arduous? In an article for Interactions magazine (n. d.), Norman suggested that a built-in kitchen robot might be able to not only communicate with all the different elements of the kitchen but might be able control the passing of items and utensils around as required.

Norman also suggested the possibility of an educational robot – not as a substitute for school and human teaching, but to be supplemental to them. For example, such a robot could be a “ little friend” helping a child to learn the alphabet. As technology improvements permit, the scope of such robot teaching is almost limitless. Whilst the concept may seem fanciful, the basic technology already exists; it is only specific implementations that need developing (or “ Apps” as they have become known in mobile telephones terminology).

Johnson's article (n. d.) in The Guardian newspaper (UK) mentioned that all our electronic devices in the home can soon be “ networked” to provide integrated control, but that in other parts of the world that next stage is

already becoming reality. In South Korea for example, the electronics giant LG is designing and creating digital apartments in which robots have a significant role in home management. Their capabilities include answering the door, opening/closing blinds or curtains and managing the consumption of utilities. That's in addition to managing and controlling the dishwasher, microwave and air conditioning, etc. Even more impressive – all those robotic tasks can be controlled via the internet or mobile telephone. The future is definitely on its way!

Industrial Robots

The assembly lines in car manufacturing plants are frequently seen on TV, more usually in the early stages of the build, where those massive robots weld the body parts together and spray paint the complete bodyshell before humans come along to join the party. Robots are widely used in many other industrial processes, predominantly in performing tasks that are repetitive and/or boring, or even dangerous (such as pouring molten metal into moulds). What they tend not to be used for is in situations where the work requires creativity, or decisions to be made, or perhaps where the tasks performed require learning on the part of the operative. However, robots do work at the same pace without tiring, but what will/can they do in the future that they can't/don't already? According to an article by Heyer (2010), the oil and gas industry will increasingly use robots in environments where humans would find working conditions hazardous, such as locations where toxic or explosive substances exist, or where ambient or local working temperatures are life-threatening for humans. Remotely-controlled robots used for

equipment monitoring or maintenance functions are examples of those applications.

Hospital Robots

Another specialist use of robots is in the hospital environment. Reed (Oct 2012) in an article “ The Future of Robots in Hospitals” described how robots are increasingly being used to perform quite involved medical procedures – and without ever getting tired! A surgeon actually performs the operation by remote control, taking advantage of the high precision of the robot plus the magnified pictures relayed back from it. An added advantage is that the incisions made can be very small, reducing recovery time. Other robotic applications coming along include a mobile robot that a doctor can use to do his rounds, while he monitors and controls it from his desk or a console in his office. The future also includes the possibility to treat the patient remotely while he/she is at home. The article mentioned another benefit of the extensive use of robots in hospital wards and corridors – less opportunity for human hospital staff to contract airborne infections. Yet a further robotic application already being developed is a machine to sterilize equipment and check off the items after a surgical procedure. The same article reported the recent invention by Israeli scientists of “ micro robots” so small that the intention is to send them around within a patient’s blood vessels. Overall, the increasingly diverse applications being discovered for using robots in hospitals will mean that the precious time of highly trained and skilled hospital personnel can be used more cost-effectively.

Military Robots

The military use of robots is one area of robotics that really is moving forwards. Weinberger, in a BBC article entitled “ Next generation military robots have minds of their own” (Sep 2012), described how whilst most of the present generation robots used by the military are “ pretty dumb”, the situation is changing. One such development Weinberger described is a device known as the PackBot, which is a track-mounted robot used by the American military in Afghanistan to help clearing bombs. It is being upgraded so that in certain situations it will be able to operate with limited autonomy. As a fail-safe measure, if it should lose communications contact with its remotely located human operator, it will backtrack to where it last was in contact. This feature avoids a human operator having to go into a potentially hazardous area to retrieve it, with the associated risks.

A robot already in development is Saffir (Shipboard Autonomous Fire fighting Robot). Weinberger described it as a humanoid robot designed to liaise with its human operatives by responding to gestures and spoken words. Yet another military robot design underway is Bear (Battlefield Extraction-Assist Robot). This robot – humanoid in general form but with tracked lower limbs – is designed for scooping up wounded personnel on a battlefield and carrying them to a safe location for medical attention, avoiding the need for other soldiers to take risks in retrieving their injured comrade. There are also plans to create military robots for more mundane tasks like loading and unloading vehicles, allowing the soldiers to keep hold of their weapons for self defense.

Many of us will already be aware that small pilotless aircraft known as drones

are widely used in areas of conflict such as in Afghanistan. According to Lindsay (2011), the U. S. has in excess of 7, 000 of these Predator drones available to them. But the future generation of pilotless “ spy” vehicles is even more revolutionary. Lindsay reported that in February of 2011 a prototype drone was unveiled that was only the size of a hummingbird and that plans are already in place for insect-sized drones. To cope with what could be large numbers of these drones deployed in a war zone, Lindsay reported that the U. S. Air Force is training more “ remote pilots” (pilots to control the drones) than they are training fighter and bomber pilots together.

Robots in Leisure

Dejean (2012) imagined a future scenario where you go out with friends to a bistro for a meal. As you enter, a virtual hostess greets you, using various languages. You use your smart phone to check in and are assigned a plexiglass table, which is activated as you take your seats, showing your virtual chef, who suggests various offerings for the courses of your meals. You make your individual choices from displayed virtual menus, which transmit those choices over a Wi-Fi link to the kitchen. While the food is being prepared, the interactive table offers games to play, news bulletins to watch, or even allows you to make calls. Your meals are then delivered to you by a robotic tray. Following the meal, you place your credit cards or smart phones on the table and are charged according to your collective choice of splitting the tab. You can of course also include a tip if you wish. Whilst Dejean accepted that this all sounds too far-fetched to be taken seriously, he argued that all the technology described already exists and will be rolled out as demand requires.

Conclusions

It is apparent that the technology for the next generation of robots already exists; it is only the demand for them and in some cases the budgets needed to develop them that have prevented them being around already. But they will come, of that there is little doubt. Whilst development costs are an obstacle, once the demand is demonstrated to be there, facilitating mass production of the robots, they will be available. As for subsequent generations of robots, who can say what they will be like? Maybe the future shown in the movies where robots build other robots is not as far-fetched as one might think

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