HUMANOID ROBOTS: A REVIEW

Abstract

Humans are mainly leading creature of the nature. We can say that humanoid robots will lead the future of ours. All the human made things like automobiles, hand-phones and many multimedia devices that we use, humanoid robots will be definitely the best helper for human beings. We don't know what will be happen in future and we don't know in future how robots are going to behave with us and are they good or harmful for us. But it is sure, we are strange human beings, we shall surely enhance the new leading breeding of robots. A humanoid robot is a robot which has its overall function based on that of the human body. Instead, improving humanoids robots are demand the enactment of manipulation abilities, which is even the most difficult issue in robotics. Robots can live up to this anticipation because in time to come smart and self-control robots will free humans from, or ease them up of, continually assurance bodily and intellectually demanding routines. Examples- In future many surgical operations will be done by robot doctor; in hospital robot nurse will help us to support patient; in many military operation robot soldier will be our essential hand; in future to make our society much safer robot guard are very helpful for our safety. The list of several entreaties with smart and self-governing robots is spreading. As man-made understanding continuously grows, in future there may be a time in which robots become unequalled or greater to humanity. No concern what our fortune will, there will be a place for robots.

Keywords: humanoid robot, artificial intelligent, robot

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I. INTRODUCTION

For several men it is an instrument that looks like a man—like the androids' character in Star Wars movies, Terminator and Star Trek: The Next Generation. Although it conquers our thinking, these only exist in movies. At present day humans still not be able to give a robot sufficient intelligence to effortlessly communicate with an active world [1].

Many types of humanoid robots that we engage usually are robots that can do thing which are so hazardous, tedious, laborious, or just ordinary noxious. Approximately all robots we are using in this earth are of this kind. It will be applied in automobile, medical, fabricating and space industries. In real, there are more over a lakhs of these kinds of robots working for us in present day [1].

Quick improvement of it guides about new switch of the borders of Robotics as well organize and instrumentals direction. Latest invention of elements, sensors, microcomputers, as well as new components, have more lately removed the obstacles to actual-moment merge supervision of few very complicated effective structures like humanoid robots, which previously have several degrees of freedom which are modernized in very small time of the given indication [2].

In review of the upper lines, 1st time effort upraise the crucial doubt on the sustainability of enlarging the count of degrees of freedom of humanoid robots, taking all these things in our brain general emaciated action we have atits ejection approximately about 650 muscles of our body which could be approximately intimate by more than 300 similar degrees of freedom, i.e. the same no. of biological actuators [2].

II. WHATIS A ROBOT?

Robot is a structure that includes sensors, control system, manipulators, power supplies and software all working jointly to accomplish a work. Designing, building, programming and testing a robot is a combination of physics, mechanical engineering, mathematics and computing [3]. Robotics study means that students are deliberately busy with all of these instructionsin extremely difficulty-causing or difficulty-resolving surroundings [4].

We can consider humanoid robots as an idea of robots that are as adaptable and adjustable as we are and physical appearance of humanoid robot is close to the human body. Further physical similarity, humanoid robots are meant to appear like humans in their actions, thinking that is coherent and logical, and talk about the world [5]. For inventing such robots requires organized and coherent research attempt that span a large range of routine such as understanding thesis, mastery philosophy, manmade understanding, man and instrument intellect, technology combining electronics and mechanical engineering and even the study of the mechanical laws relating to the movement or structure of living organism and study the structure or function of the nervous system and brain by computer.

III. HUMANOID ROBOTICS

The conception of the evolution of humanoid robotics conflict with thebeginning of the development of occupied exoskeletons, world first skeletons, developed in 1969 inthe Mihajlo Pupin Institute under the direction of Prof. Vukobratovic [6]. Firstly leg movement

structure was developed. And then, the concept of all this kind of structure has been also advanced in the same institute, in the frameof active exoskeletons. So we can say that the active skeletons are now replaced by another thing that is followed by humanoid robot. More lately, there has been distinct revived curiosity in working exoskeletons, first of allof military commitment. Now a day, we are developing working exoskeletons as a system that act like man real skeleton system [7].

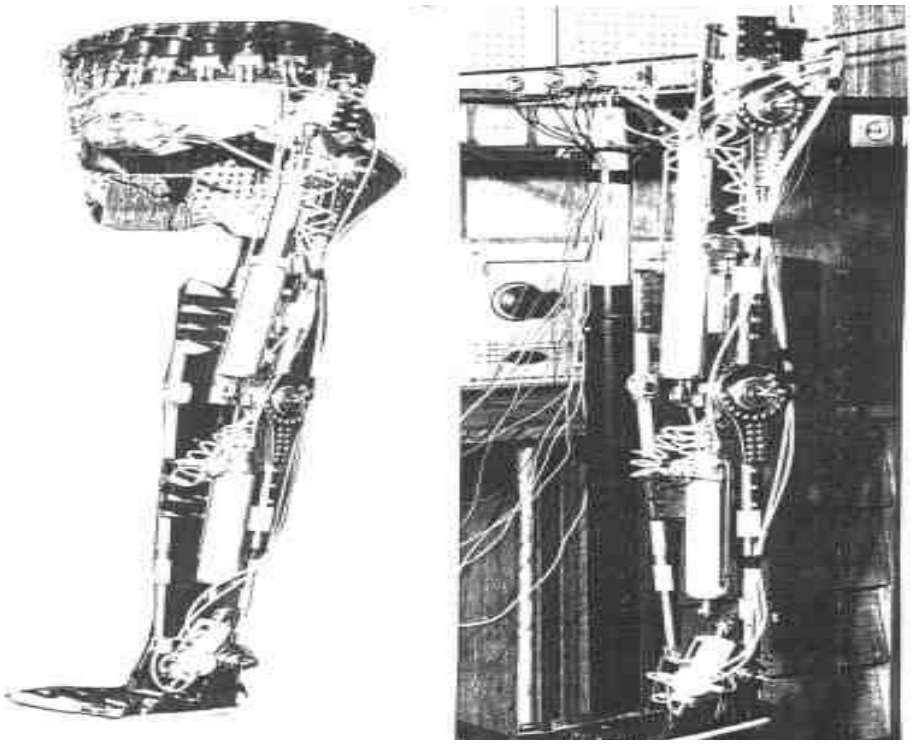

Figure 1: First Version of the Powered Leg [5]

Figure 2: World First Active Walking Skeleton [5]

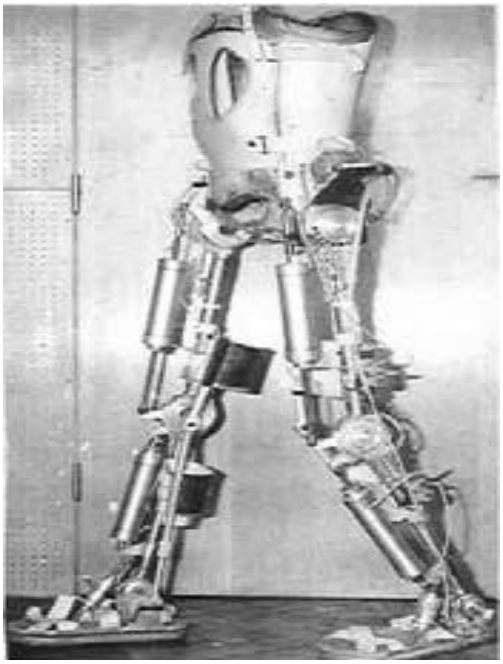

Figure 3: Most Successful Version of Active Exoskeleton Found in 1972[5]

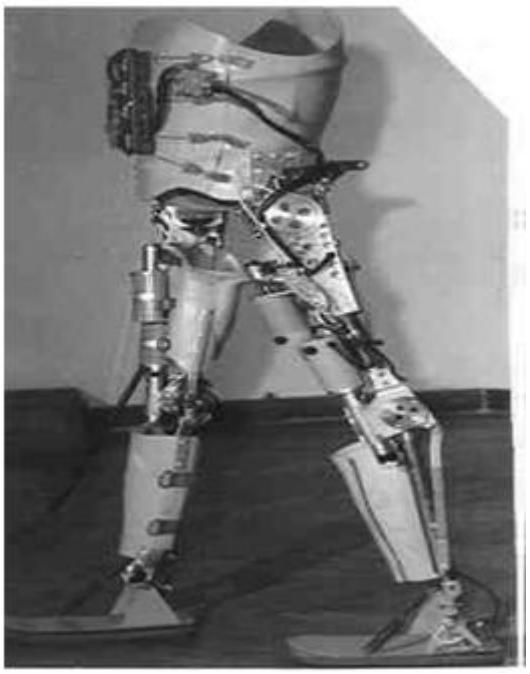

Figure 4: Active Exoskeleton which is Run by Electric Power and Found In 1974 [5]

IV. DIFFERENT IMPORTANT CHARACTERISTICS OF A ROBOT

1. **Sensing:** Robot must be able for sensing the encircle area. It does the sensing not the similar way that we do. In robots there are different types of sensors attached, from which robots are able to sense the encircle area [8].

2. **Movement:** A robot must be able to move throughout encircle area. Either moving on wheels, movement by legs or driving by thrusters; a robot needs to be able to move[9].

3. **Energy:** Power is necessary for a robot to move itself. A robot may be powered by solar, by electricity or by battery. From which process our robot will get energy depend on what our robot needs to do.
4. **Intelligence:** A robot needs to be few things of "smarts". This is where programming comes and a programmer is a man who gives the robot its intelligence. A robot receives the program and does the work that what the programmer tells to do [10].

V. ROBOTICS – WHAT NEXT?

The robotics industry, for a half century development still faces the number of challenge. Besides the technological and cultural hurdles to overcome, question remain unanswered regarding their economic and environmental impacts as well as the ethical issues of human and robot interactions [3].

1. **The Future of Robotics:** From surface cleaning or grass cutting to army bomb detectors, robots are getting advanced day by day. Many countries are inventing a robot a size of hornet to strike assassin. Destroyer fighter planes, drones or MAV's are much closer than that [3].

2. **How Robot Will Affect Future Generations:** In coming days, the robot future will be bright. But how future generations will be affected by robots? Some time we may get ideas about the incoming future and think about the changes we have seen as a result of some other innovations, like cotton, aeroplane, internet etc. Perhaps one day the robot will be our true friend that escorts the blind man, help the old people etc. [3].

3. **Some Humanoid Robots & Their Names**

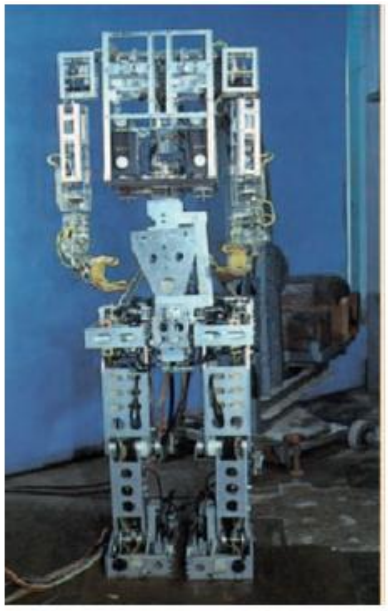

Figure 5: WABOT-1 [9]

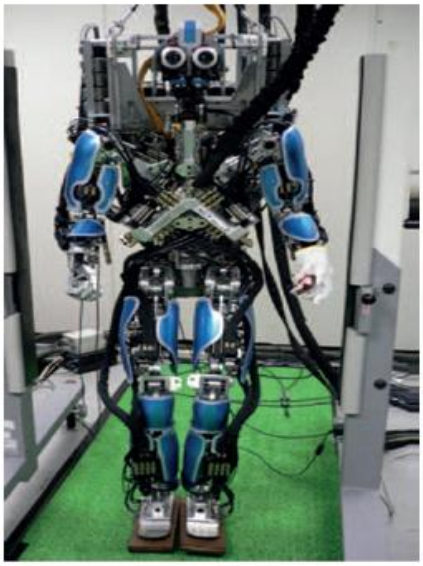

Figure 6: CB[9]

Figure 7: Partner Robot[9]

Figure 8: iCub[9]

VI. CONCLUSIONS

It is quite clear from the upper mentioned attributes that the robots have demonstrated again and again that impossible things can be done by robot easily which can't be done by humans. Human's little presence in this planet is affected by these manmade instruments. Probably in next some years these manmade machines or the so called "Brain child of mankind" does not control and command its own inventor. In conclusion, we definitely need to draw a boundary line between humans and the machines so that we will able to stop any kind of hick-ups during our existence on this planet.

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