

## ROBOTICS (ADVANCEMENT IN AUTOMATION)

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### **Abstract:-**

*Now a days, Robotics is the developing branch in the world, there is a lots of scope in future. Robotics is not just a robot making , it deals with automation of appliances, machines , homes etc. It is the combination of mechanical engineering, electrical engineering and computer science.*

### **Robotics: -**

*Is the branch of mechanical engineering, electrical engineering and computer science that deals with the design, construction, operation, and application of robots, as well as computer systems for their control, sensory feedback, and information processing. These technologies deal with automated machines that can take the place of humans in dangerous environments or manufacturing processes, or resemble humans in appearance, behaviour, and or cognition. Many of today's robots are inspired by nature contributing to the field of bio-inspired robotics.*

**Keywords:** *robot, actuators, sensory feedback, medical robotics , prosthetic hand, prosthetic leg.*

## **INTRODUCTION:**

**Robotics** is the branch of mechanical engineering, electrical engineering and computer science that deals with the design, construction, operation, and application of robots, as well as computer systems for their control, sensory feedback, and information processing. In this branch, technology take a new turn towards modern technology by robotics. Basically, in robotics our main moto is to reduce human labour especially in case of dangerous activities where risk of life is so much. In Robotics or we can say in automation , the main thing is its programming. Programming is its main thing on which its whole working depends. This is the only which controls the movement of hardware parts, movement of actuators, working of sensors, information processing etc.

### Scope in future:

It's very important & advantageous for the development of world, development of technology & take it science up to the next level. Many robots are built to do jobs that are hazardous to people such as defusing bombs, finding survivors in unstable ruins, and exploring mines and shipwrecks.

In future scope, robotics can be used for defence in military for the benefit of mankind. If robots are placed in place of human beings at battle ground then its first advantage is that loss of human life is very very less & they can do there jobs in more better & efficient way.

We can send robots in space to investigate the things in different planets due to this investigation done properly & data can be send through space via robot at less interval of time.

Robots, in future, can be used as medical robots (like prosthetic hand, prosthetic legs & so on). These medical robots will be beneficial for those who are paralysed or who has not one leg or one hand, this can be help these people.

Despite these advances, there are certain skills to which humans will be better suited than machines for some time to come and the question is how to achieve the best combination of human and robot skills. The advantages of robotics include heavy-duty jobs with precision and repeatability, whereas the advantages of humans include creativity, decision-making, flexibility and adaptability. This need to combine optimal skills has resulted in collaborative robots and humans sharing a common workspace more closely and led to the development of new approaches and standards to guarantee the safety of the "man-robot merger". Some European countries are including robotics in their national programmes and trying to promote a safe and flexible co-operation between robots and operators to achieve better productivity. For example, the German Federal Institute for Occupational Safety and Health (BAuA) organises annual workshops on the topic "human-robot collaboration".

In future, co-operation between robots and humans will be diversified, with robots increasing their autonomy and human-robot collaboration reaching completely new forms. Current approaches and technical standards aiming to protect employees from the risk of working with collaborative robots will have to be revised.

### Applications:

Caterpillar plans to develop remote controlled machines and expects to develop fully autonomous heavy robots by 2021. Some cranes already are remote controlled. It was demonstrated that a robot can perform a herding task.

Robots are increasingly used in manufacturing (since the 1960s). In the auto industry they can amount for more than half of the "labor". There are even "lights off" factories such as an IBM keyboard manufacturing factory in Texas that is 100% automated.

Robots such as HOSPI are used as couriers in hospitals (hospital robots). Other hospital tasks performed by robots are receptionists, guides and porters helpers, (not to mention surgical robot helpers such as Da Vinci)

Robots can serve as waiters and cooks, also at home. Boris is a robot that can load a dishwasher.

## **REFERENCES LINKS:**

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