Robotics

or

Future of Robotics

A technological revolution is taking place in the area of machine tools, inspection devices and handling equipment. This new revolution has been triggered off by electronics and sustained by ever-increasing capabilities of computers. This has led to emergence of a new technology called mechtronics symbolizing the synthesis of mechanical aspects.

Robotics is the study of the design and use of robots i.e. the machines programmed to carry out a series of operation without human guidance. The world 'robotics' was invented by the science fiction writer Isaac Asimov.

Computer-controlled robots are used in industry for welding, assembling and machining, and to handle various materials. Non-industrial applications of robots include marine work, space word, bionomics, farm work, mining, nuclear work, security guarding, sheep-shaving, simulation, warehouse, micro-surgery, etc.

Man is a social animal and as such shares his life with others. He enters into social relationship with other human beings to make life worth living. To further strengthen this bond of relationship and make life more meaningful, cohesive, disciplined and profitable, the political institution called State has been created. A State makes a particular society more organized, united, purposeful and disciplined and thereby ensures better standard of living and growth, There is better sense of belonging, likeness and commonness because of a State. The State imparts a sense of nationality, patriotism, and togetherness to a society. Therefore, it is in the fitness of the scheme that a State should always aim at welfare of the individual and the society as a whole. The concept of the State as a mere instrument of political power or the Police State is now no more acceptable. Maintenance of law and order, internal security, disciplines et. Are the essential duties of a government in a State but within the framework of social welfare?

All of them do no suit neither the students nor the society for which they are going to be prepared. The hue and cry about the curricula and pattern of examinations is so great that some people consider it the real bane of the system and every time when there is a revising of text books and the curricula, the changes worsen the position and do not solve the main problem.

It is human beings who make science. Ills of science like the destructive power of nuclear weapons, the erosion of values because of spread of gross materialism, ever increasing depletion of natural resources, degradation and pollution of the environment etc. are actually the ills of man using science in a way that is destructive, undesirable and unholy. It is because the scientist in man has deviated from his social commitments, social conscience. Therefore, there are some sections in the society who want an immediate halt to the growth of scientific researches and studies.

Robots for space: – Computer Scientists have designed an intelligent flying robot to carry out a wide range of tasks on Mars, if it is visited by a possible future European space Agency Mars Lander Mission in 2005. Named Altari-1, the craft has been designed primarily to carry science packages, micro-robots and other equipment form one part of the planet to another.

Robotics in India

In India, a few research groups have been working on development of robots, but a breakthrough is yet to be made in the file of robots for large-scale industrial application. The groups working on robotics include R and D of the Hindustan Machine Tools (HMT), the Central Machine Tools Institute (CMIT), and the Indian Institute of Technology (IIT) Madras.

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The word robot is means 'Slave in origin' and is related to the words for work and worker. Robots first appeared in a play, Rossum's Universal Robots, written in 1920 by the Czech playwright, Karel Capek. The play describes the story of an engineer who designs man-like machines that have no human weakness and become immensely popular. However, when the robots are used for war they rebel against their human masters. Though industrial robots do dull, dehumanising work, they are nevertheless a delight to watch as they crane their long necks, move their heads: There are numerous "personal" robots now on the market, the ril0s 1 popular of which is HERO, manufactured by Heathkit. Looking like a plastic step stool on wheels, it can lift objects with its one clawed arm and utter computer-synthesized speech. There's another robo named Hubot, which comes with a television screen face, flashing lights and a computer keyboard that pulls out from

its stomach. Hubot moves at a pace of 30 cm per second and can function as a burglar alarm and a wake up service.

The robots working at Chrysler and in various other modern factories are extremely adept at executing highly specialized tasks —one robot may spray paint car parts while another does spots welds while another pours radioactive chemicals..Robots are ideal workers: they never get bored and they can be made to work round the clock besides they're flexible. By changing its programming we can instruct a robot to perform different tasks at our own will. Some critics complain that robots are stealing much-needed jobs away from people; so far, they've been given only the dreariest, dirtiest, most soul-destroying work. We may dream of living like a lazy king surrounded by a coterie of metal maids, but any further automation in your home will instead include things like lights that switch on automatically when the natural light dims or carpets with permanent suction systems built into them.

Robot engineers have realized that the big challenge is not in putting together the nuts and bolts, but in devising the lists of instructions-the "software-which tell robots when and what to do". There are computer programs that diagnose medical ailments and search valuable ore deposits. You may have heard of computer programs that play and win at chess, checkers and go. The robots are undoubtedly getting smarter and smarter. The biggest challenge in robotics today is designing software, which can help robots to perform a complex task. Seemingly sophisticated tasks such as robots do in the factories can often be relatively easy to program, while the ordinary, everyday things people do-walking, reading a letter, planning a trip to the grocery store-poses a great deal of difficulty. The day has still to come when a computer program can do anything more than a highly specialized and very delicate task. Another trouble with robots in the house for example, is that life there is so unpredictable, as it is everywhere else outside the assembly line. In a house, things get moved around, kids and petsare always running around. Robots work efficiently on the strict instructions line (software) where there is no variation, but they are not good at improvisation. A majority of the computer scientists who are attempting to make robots brighter are said to working in the field of Artificial Intelligence (AI). These researchers face a main problem in ascertaining what intelligence is. Many in AI hold the view that the human mind works according to a set of formal rules. They believe that the mind is a clockwork mechanism and that human judgement is simply calculation. Once these formal rules of thought can be discovered, they will simply be applied to machines. On the other hand, there are those critics of AI who contend that human consciousness is a stream in which ideas bubble up from the bottom or jump into the air like fish. This debate over intelligence and mind is, of course, one that has gone on for thousands of years. Before the arrival of robotic era we must chalk out some tasks cut out for ourselves, which can keep us busy.