

ROBOTICS

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Анотація

У даній статті наводиться огляд науки робототехніки, яка включає в себе такі дисципліни, як електроніка, механіка, телемеханіка, мехатроніка, а також радіотехніка і електротехніка.

Ключові слова: робототехніка, електроніка, механіка, телемеханіка, мехатроніка інформатика, радіотехніка, електротехніка.

Abstract

In this paper a review of robotics science is given, which includes such disciplines as electronics, mechanics, telemechanics, mechatronics, as well as radiotechnics and electrical engineering.

Keywords: robotics, electronics, mechanics, telemechanics, mechatronics informatics, radiotechnics, electrical engineering.

Robotics is the interdisciplinary branch of engineering and science that includes mechanical engineering, electrical engineering, computer science, and others. Robotics deals with the design, construction, operation, and use of robots[1], as well as computer systems for their control, sensory feedback, and information processing.

These technologies are used to develop machines that can substitute humans. Robots can be used in any situation and for any purpose, but today many are used in dangerous environments (including bomb detection and de-activation), manufacturing processes, or where humans cannot survive. Robots can take on any form but some are made to resemble humans in appearance. This is said to help in the acceptance of a robot in certain replicative behaviors usually performed by people. Such robots attempt to replicate walking, lifting, speech, cognition, and basically anything a human can do. Many of today's robots are inspired by nature, contributing to the field of bio-inspired robotics.

The concept of creating machines that can operate autonomously dates back to classical times, but research into the functionality and potential uses of robots did not grow substantially until the 20th century[2]. Throughout history, it has been frequently assumed that robots will one day be able to mimic human behavior and manage tasks in a human-like fashion. Today, robotics is a rapidly growing field, as technological advances continue; researching, designing, and building new robots serve various practical purposes, whether domestically, commercially, or militarily. 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[3].

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