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Applications of Robot Kits by Ewan Fisher

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Amateur electronics enthusiasts make a lot of useful devices â€“ but surely none so potentially fun as a robot. Robot kits come in all shapes and sizes, normally designed for the use of the electronics enthusiast to design his or her own application according to the end use that he or she has in mind.

A robot is basically defined as an electronic apparatus designed to do the work of a human being. In complexity and style robot kits range from the mildly diverting (I remember a robot we had at school, way back in the past, that drew lines on bits of paper with a pencil) to the astonishing â€“ like the Japanese TOPIO robot, a human sized, human shaped machine capable of playing table tennis with a human opponent.

What you want to do with your robot determines the articles you need in your robot kits. The most useful kits are home made â€“ get as many pieces as you can and youâ€™ll always have a useful grab ba full of inventorâ€™s bits for the day you have a creative breakthrough in the design of your next mechanoid assistant!

Sensors and arms are probably the most â€œrobot specificâ€• bits of robot kits â€“ theyâ€™re the things t to define what you have made as a robot rather than just an amusing little machine. A robot needs to be able to sense and interact with its environment in fairly sophisticated ways, even at a simple level: so you need plenty of sensors to make that happen, and the arms to wield objects, pick things up or turn things.

The moving bits of your robot are powered by actuators, which convert energy into movement. An actuator is simply a catch all term for a variety of existing equipment â€“ servos, motors and gears are the most common actuators used in robot kits for amateurs and enthusiasts. If youâ€™re a multi billion dollar Japanese research group, you might instead be using air muscles or muscles wire â€“ mechanical (still electrically activated at base level) materials that mimic the function of real human muscles!

Clearly all robots, whether they are mega expensive or the product of enthusiastâ€™s robot kits, are incapable of experiencing anything like the sensory input of their human counterparts. The whole aim of robotics at any level, then, is to devise a sensor array and application that mimics human sensing capacity at a basic level. So what you are effectively trying to do is work out a way of using the sensors you have to direct a simple human-like task in an efficient mechanical way.

The robot arm in robot kits, or any part of a robot that does actual work (i.e. the bit that physically interacts with the world) is called an â€œeffectorâ€•. The kind of effector you use depends on the job you want your robot to perform. Gripping is the most common at amateur level.

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Proto-PIC is a one-stop solution for electronics enthusiasts who take immense interest in creating home electronics. They have a wide range of electronic components like a robot kits.

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