Teachable Robotic Arm

Landergan, Mark

Conventional factory robots such as Kuka robotic arm normally cost approximately $30,000. For a small manufacturing company this amount of money may be too expensive. Also these off the shelf robots often require a significant outlay for their continued maintenance and this would further increase operating expenses because there would be a need to employ trained professionals to oversee the daily operations of the robots. A teachable robotic arm could save companies a considerable amount of money because the price of the robot is cheaper and it would not require a trained professional. This project, a six-degree of freedom robotic arm was constructed that has the capability of being taught motions. The robot was a tabletop arm that stands about 2 feet tall with each segment having roughly 180 degrees of freedom. The robotic arm had three segments and was compromised of six analog feedback servos. The robot was capable of recording motions by user input and the values of these servos were saved to the robot's temporary memory and these values were recalled back to replay the motion that the user just taught it. The teachable robotic arm can be built for less than $200 at a small scale and could be used as a model for larger operations. Not only could a company reduce its overall operating expenses by using a teachable robotic arm but it could also motivate their workforce by empowering them to have a more direct input into the production process.

Awards Won: