Real time modified programmable universal machine for assembly (PUMA) 560 with intelligent controller

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Abstract:

In this work, the design of an integrated industrial application for use on a modified PUMA 560 robot arm was presented. The modified PUMA 560 robot has three joints; two of them are free-moving and the third one is at constant 90 degree angle. It has three links and two extra Griper links. Each joint was controlled via a DC motor through a PIC microcontroller. The design and implementation of modified PUMA 560 with electronic circuits to derive the motor were used with the robot and the working platform. These electronic circuits were also used to interface with the computer to control the DC motor based on the computer orders. The control signals used to control the application control system and to perform the defined tasks were received from a remote computer connected via internet. This design has been implemented in two phases; the first phase was the simulation of the complete control system, while, the second phase was the practical implementation. The obtained results were ensured the ability of the proposed system to perform the tasks of many industrial applications.