A Review on Four Degrees of Freedom (DOF) Wireless Robotic Arm based on LabVIEW Software

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Authors:
Mrugank Arekar, Hetal M. Pathak

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Abstract

The aim of this paper is to thoroughly elaborate designing, development and to implement steps involved to make a superior four degrees of freedom (DoF) robotic ARM which is more organized and having low expenditure. The proposed robotic ARM is designed with four degrees of freedom to perform various associated tasks, such as material handling, shifting which can serve as an assistant for industries and, moreover this robotic arm can be useful in hazardous calamities such as earthquakes to identify and rescue people stuck under the debris. The robotic ARM is built with the number of servomotors that perform ARM movements concurrently. The controlling action of robotic ARM are managed through graphical programming language G; Lab VIEW (Laboratory Virtual Instrument Engineering Workbench) which was developed by National Instruments. Lab VIEW communicates with the robotic arm using appropriate movement angles through Arduino that drives the servomotors having the capability of varying position. At last, using wireless communication the robotic arm movements are controlled and implemented in an organized manner which follows UART protocol.
References


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Index Terms

Computer Science Automated Systems

Keywords

Robotic arm, Degrees of freedom, Servo motor, LabVIEW, Arduino UNO, RF Zigbee, Serial Communication.