Design and analysis of 7-DOF human-link manipulator based on hybrid intelligent controller

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Abstract:

A manipulator is an alternative to progress profitability in mechanical computerization. The robotic controller executes forms' assembly operations in hazardous conditions. Since computerized controllers are highly vulnerable nonlinear powerful frameworks, it is hard to provide precise unique conditions at controlling laws' configuration. Virtual Reality (VR) is a fundamental advance at use in modern biomedical, medical procedures and different fields where a 3D object helps to comprehend complex behavior. This work proposes the interaction with 3D models in VR environment achieved by accurate sensing from feedback, and then reconstructs the instruction according to practical limitation of a real human arm movement.

In this work ANFIS played a key role in finding results with optimal values because the combination of Neural Networks (NN) benefits and obscure logic systems research examined the individual defects in both of them. Use of Artificial Neural Networks (ANN) in dynamic systems has quite extensive and accurate results, when adding a training signal system to the mixed learning base implemented at combining the slope proportions technique, a Least Square Error (LSE) preparing the ANFIS organization for any framework to take care of the issue any way. This work presents a keen controller actualization with 7-DOF controller for a model designed with a VR situation that reproduces the system design by associating Matlab/Simulink to connect the VR model with some instruction to execute orders delivered by the hybrid intelligent controller based on ANFIS technique. Palatable outcomes are implemented in reproductions that improve the procedure as an essential utilization of this controller design.