Abstract

Nowadays, robot arms are used as standalone or intrinsic part of many robot systems in various fields and applications. The design and structure of robot arms varies depending on multiple constraints such as the tasks they have to perform, working environment in which they have to operate, the dimensions of the objects they have to peak, etc. Every robot arm, regardless of its design and structure, is aimed to perform some movement that has to be carefully analyzed and planned. During this process, usually two types of motion are analyzed. The first one aims at finding the position of the end effector when the angles between the robot arm links are known. This problem is usually denoted as direct kinematics. The second one, known as inverse kinematics, aims at solving the opposite problem i.e. to determine the angles between links when the position of the end effector is known. This paper presents an inverse kinematics solution of two degrees of freedom planar robot arm based on Adaptive Neuro Fuzzy Interface System (ANFIS). The proposed model is experimentally evaluated and the obtained results are discussed.
References

Inverse Kinematics Solution of a Robot Arm based on Adaptive Neuro Fuzzy Interface System


Index Terms

Computer Science  Artifical Intelligence

Keywords

Robot arm, ANFIS, Robot arm with two joint, Robot arm with two links, inverse kinematics, inverse kinematic on 2 joint robot.