World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

A Review on Robot Trajectory Optimization and Process Validation through off-Line Programming in Virtual Environment Using Robcad

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Abstract : Trajectory planning and optimization is a fundamental problem in articulated robotics. It is often viewed as a two phase problem of initial feasible path planning around obstacles and subsequent optimization of a trajectory satisfying dynamical constraints. An optimized trajectory of multi-axis robot is important and directly influences the Performance of the executing task. Optimal is defined to be the minimum time to transition from the current speed to the set speed. In optimization of trajectory through virtual environment explores the most suitable way to represent robot motion from virtual environment to real environment. This paper aims to review the research of trajectory optimization in virtual environment using simulation software Robcad. Improvements are to be expected in trajectory optimization to generate smooth and collision free trajectories with minimization of overall robot cycle time.

Keywords : trajectory optimization, forward kinematics and reverse kinematics, dynamic constraints, robcad simulation software
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020