

DETECTION OF THE SHORTEST ROBOT TRAJECTORY BY GENETIC ALGORITHMS

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Abstract: Genetic algorithms for optimal trajectory estimation between two points of robot's working space are described in this article. The length of trajectory is used as one of possible criteria. Genetic algorithms can be used in base form and the computations can be done in 3D-working space without transformation into C-space. Genetic algorithm in the 3D-space without constraints is discussed in the first part of contribution. Base terms like chromosome, objective function, genetic operations etc. are described with reference to solved problem. Necessary supplements of algorithm (the way of points generation, changes in genetic operations) for solution of collisions with constraints are given in the second part of article, too.

Key words: Genetic algorithms, robot systems, trajectory, collision, optimization



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