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Neural Network in Fixed Time for Collision Detection between Two Convex Polyhedra

Authors : M. Khouil, N. Saber, M. Mestari

Abstract : In this paper, a different architecture of a collision detection neural network (DCNN) is developed. This network, which has been particularly reviewed, has enabled us to solve with a new approach the problem of collision detection between two convex polyhedra in a fixed time (O (1) time). We used two types of neurons, linear and threshold logic, which simplified the actual implementation of all the networks proposed. The study of the collision detection is divided into two sections, the collision between a point and a polyhedron and then the collision between two convex polyhedra. The aim of this research is to determine through the AMAXNET network a mini maximum point in a fixed time, which allows us to detect the presence of a potential collision.

Keywords : collision identification, fixed time, convex polyhedra, neural network, AMAXNET
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