Abstract

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An Intelligent mobile robot navigator using evolutionary fuzzy controller

in many applications, the robot’s environment is changing with time in a way that is not predictable by the designer in advance. in addition, the information available about the environment is subjected to imprecisionincompleteness due to the limited perceptual quality of the sensors. these problems can be handled by combining the adaptive power of both evolutionary strategy algorithmsfuzzy controllers. in this paper, an evolutionary strategy algorithm is used to tune fuzzy membership functions to enhance the performance of a fuzzy controller that governs a robot behavior. this fuzzy controller is synthesized from human heuristics with respect to various situations of the changing environment. the controller acts according to a combination of both goal seekingopen area seeking approaches. the proposed system was evaluated through different simulations of the robot’s environmentit achieved promising results