

In this paper, we discuss the ability to deal with a Hybrid Intelligent Systems (HIS) for Intelligent Autonomous Vehicles IAV in unknown environment. The aim of this work is to develop HIS combining Genetic Algorithms (GA), Fuzzy Logic (FL), Neural Networks (NN) and Expert Systems (ES). This project deals with a simulation program that allows a robot to identify a path to reach a specified target avoiding obstacles. The combination of (ES FL, NN, GA) offers design flexibility and robust integration and has the benefits of reduced communications overhead and improved runtime performance. This integration provides the robot the possibility to move from the initial position to the final position (target) without collisions. The robot moves within the unknown environment by sensing and avoiding the obstacles coming across its way towards the target. The algorithm permits the robot to move from the initial position to the desired position following an estimated trajectory. The proposed hybrid navigation strategy is designed in unknown environment with static unknown obstacles. This approach must make the robot able to achieve these tasks: to avoid obstacles, and to make ones way toward its target by ES_FL_GA_NN system capturing the behavior of a human expert. The integration of these technologies (FL, NN, ES, and GA) has proven to be a way to develop useful real-world applications, and hybrid systems involving robust adaptive control. The proposed approach has the advantage of being generic and can be changed at the user demand. The results are satisfactory to see the great number of environments treated. The results are satisfactory and promising. the proposed method is computationally efficient and is suitable for more integration of hybrid intelligent systems