

## عنوان مقاله:

A Hybrid Neuro-Fuzzy Controller for Nonholonomic Mobile Robot, Simulation, and Industrial Implementation With Evolutionary Model

## محل انتشار:

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## نویسندگان:

Vahid Mohammadi - Faculty of Electrical and Computer Engineering, University of Tabriz, Tabriz, Iran

Sehraneh Ghaemi - Faculty of Electrical and Computer Engineering, University of Tabriz, Tabriz, Iran

## خلاصه مقاله:

This paper represents a rapid practical way to control a class of line follower mobile robots in 2D industrial environments. A new controller is depicted which has proficiency of Neural Network (NN) and Fuzzy Logic (FL) controllers together and it is implemented practically. In this project, Atmel ATmega 16 processor handles the controller code. Besides, Infrared (IR) sensors have responsibility of detecting the route. Proposed Hybrid Neuro-Fuzzy controller is equalized in C programming language to be used in processor. To have a cheap implementation, the novelty of process is using just 5 sensors in spite of large-scale deviations of route. In addition, using less sensors demonstrates robustness of controller against indefinite situations. Some industrial difficult situations have been mentioned and solutions are given. To achieve the goal, a new way of modelling for this kind of robots is proposed with principals of system identification. Then numerical simulations on MATLAB software are done. In addition, practical model implementation has been illustrated and results are given

## کلمات کلیدی:

Nonholonomic Mobile Robot, Hybrid Neuro-Fuzzy, Robot Navigation, Intelligent Control, System Identification

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/503909>

