String

SOFM

†

## The Comparison of Pulled and Pushed-SOFM in Single String for Global Path Planning of Mobile Robot

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Key Words: Path planning( )

## **Abstract**

In this research uses a predetermined initial weight vectors of 1-dimensional string, gives the systematic input vector whose position best matches obstacles, and trains the weight vectors such that neurons within the activity bubble are moved toward or reverse the input vector. According to simulation results one can conclude that the modified neural network is useful tool for the global path planning problem of a mobile robot.

**SOFM** 가 1. 가 , 가 가 가 가 가 self-organizing feature map(SOFM)<sup>(2)</sup> . SOFM 가 가 가 가 . 가 (string) 가 가 가 가 가 2. † 가 (pulled) SOFM E-mail: ggypcha@wonkwang.ac.kr 가 Fig. TEL: (063)850-6693 FAX: (063)850-6691 1 (pushed) SOFM 가 Fig. 2

16 2 가 **SOFM** Fig. 1 Fig. 2 2 가 가 가 가 가 100 가 200 400 100 **SOFM** Fig. 1 ), **SOFM** Fig. 2 **SOFM** Fig. 1 400 **SOFM** Fig. 2 200 3.

> . 1 가

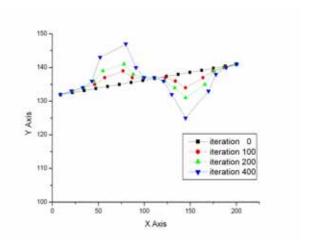


Fig. 1 Sequential results of global path planning by using pulled SOFM with string.

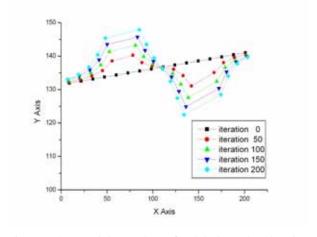


Fig. 2 Sequential results of global path planning using pushed SOFM with string.

- 1. Cha, Y. Y. and Gweon, D. G., 1998, "The development of a free ranging mobile robot equipped with a structured light range sensor," *Intelligent Automation and Soft Computing*, Vol. 4, No. 4, pp. 289-312.
- 2. Kohonen, T., 1990, "The self-organizing map," *Proceedings of the Institute of Electrical and Electronics Engineers*, Vol. 78, No. 9, pp. 1464-1480.

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