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Abstract

In this paper low cost mobile robot is designed and developed. A tree diagram of material selection is used to help designer to determine the requirements of mobile robot process design. 5 pieces of low price infrared sensors and 8 bits low cost microcontroller-based system are utilized to process sensors signal and driving actuators to guide mobile robot movement. Fuzzy-Kohonen Network (FKN) method is embedded into the mobile robot as pattern recognition approach of 21 environmental classifications. We have fully implemented the system with a real mobile robot and made experiments for evaluating the mobile robot ability. As a result, we found out that the environment recognition is done well, that mobile robot successfully identified several environmental situations. Furthermore, our method is adaptive to noisy environments and produce satisfactory performance.

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