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A novel graph-based matching method to merge the extracted maps from mobile robots

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Author(s): Karambakhsh, Ahmad
Mechatronics Research Laboratory (MRL), Department of Electrical, Computer & IT Engineering, Qazvin Islamic Azad University (QIAU), Qazvin, Iran
Azizi, Vahid ; Hoseini, Mostafa ; Heiran, Khashe ; Khanian, Mahdi
Yousefi Azar ; Meybodi, Mohammad Reza
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ABSTRACT

In Recent years Robotic Science has shown a lot of advances and also faced new conditions and challenges. One of the most discussed issues in mobile robots study fields is the mapping discussion or SLAM, in which robots identify environment through range finder and estimate the position Emergence of this issue has also brought up another challenge in terms of map integration. In other words, in case of having two or more robots in a common environment that each one generates its own individual maps, a special method is needed to integrate their generated maps. During recent years various articles were presented upon this challenge, in which the integrated map is generated based on distances obtained from range finder sensors and the similarity of these distances between several maps. In this paper we are intended to generate a graph based on image processing techniques, match them and discuss upon the improvement enhanced by this in compare with other point matching method.

INDEX TERMS

- **Author Keywords**
  Autonomous Robot , SLAM , Scan Matching , Skeletonize

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