

Abstract: Self-Localization Estimation using Image Interest Point on the Ceiling

Xing Xiong and Byung-Jae Choi*
School of Electronic Engineering, Daegu University, KOREA
*E-mail: GaleWing@gmail.com, bjchoi@daegu.ac.kr**

Abstract

The indoor self-localization for mobile robots is a mandatory task in accomplishing full autonomy during navigation. In this paper, we consider the problem of indoor self-localization estimation using only visual information from a single camera. The camera points to the ceiling. We use the SURF algorithm to obtain the interest points of the ceiling. In order to reduce calculation, improved SURF is used to extract orientation and description of the interest points. According to the change of the same interest points in two images, the relative self-localization of the mobile robot will be estimated greatly.

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