عنوان مقاله:

Point Cloud Registration Using MSSIR: Maximally Stable Shape Index Regions

محل انتشار:

بیست و یکمین کنفرانس مهندسی برق ایران (سال: 1392)

تعداد صفحات اصل مقاله: 6

نویسندگان:

MohammadMahdi Manafzade - *Ferdowsi University of Mashhad, Mashhad, Iran*

Ahad Harati

خلاصه مقاله:

Range image registration is one of the fundamental tasks in 3D computer vision and robotics which is gaining more attention with availability of affordable range cameras. Existingrecent research has considered application or extension of well known point features like SIFT to the range data; examplesinclude Shape index SIFT and 2.5D SIFT. Compared to RGB image, the quality of range measurement is much worse in sensors like Kinect. This is expected and inherent due to the exploited structured light technique. Therefore, point features may easily mismatched as a result of higher noise level. In this paper we show how using region based features may overcome this challenge. MSER features are extracted fromshape index image obtained from the input range image. A SIFT-like descriptor is then proposed to encode major smooth regions of the scene as stable features invariant to scale,rotation and affine transformations. Experimental results are obtained using range image databases of Ohio State University and Stuttgart University which show improvement on the percentage of correct matched features and stability of detected features

کلمات کلیدی:

range image, point cloud registration, maximally stable shape index regions, MSER

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