

Reviewer 10 of ITSC 2019 submission 796

Comments to the author

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The introduction of this paper was clear and convincing enough to justify the motivation. This paper well described the limits of current approaches and the method proposed to overcome those limits are reasonable. The most important idea in this paper is that PMD localizes itself based on the map where there are global positions for each chosen landmark and use camera to measure the bearing to each landmark so as to calculate correct pose of the PMD using Extended Kalman Filter. However, there is no description on how to obtain global position of each landmark on the map. For the case of urban area, the algorithm proposed in this paper will work well if there is a well-drawn map but it is difficult to get accurate global position of landmarks in urban area full of skyscrapers.

Reviewer 16 of ITSC 2019 submission 796

Comments to the author

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This paper presents a localization method using a deep learning-based landmark detector and a Kalman filtering algorithm. The state-of-the-arts deep learning-based detector, YOLO, is used and bearing information is obtained from a monocular camera mounted on a PMD. The bearing information is used as the observation in the Kalman filter and the PMD recognizes its own pose. The performance of the presented system is evaluated through real environment scenarios.

This paper well describes the proposed localization system and summarizes the related works. However, the novelty and contribution are not strong. The methods used in this system are well known and widely used.

Comparison must be done. There are various types of monocular camera-based localization methods. To show superior performance of the proposed method, it must be compared with similar methods.

Minor comments - How did the authors build a landmark map? The monocular camera-based landmark detector does not provide a 2D position of landmarks. Please clarify how to build the landmark map. - Are dimensions shown in the table 1 correct? The table shows that the length is longer than the height, but the height seems longer than the length. - "*" should be omitted from equations. "*" sometimes has different meaning.