

Landmark Tracking Using Unrectified Omniirectional Image for an Automated Guided Vehicle

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ABSTRACT

In this paper, a study on landmark tracking using unrectified omnidirectional image for automated guided vehicle is presented. Omnidirectional image from a catadioptric camera may appear distorted against the height of an object. However, for a flat object on the floor, the distortion is negligible thus can be advantageous for on-the-ground landmark; Landmark used in this study was Code-128 standard barcode. The barcode is modified to suit the detection process where the barcode adopted cyan instead of white background and bears a red strip on top for orientation. The image processing can directly begin tracking landmarks when no distortion rectification in the image was required. We adopted a topological map approach where the automated guided vehicle moves from landmark to landmark. Experiments were conducted on a small four wheel drive, four wheel steering automated guided vehicle. The results were measured through number of successful consequent tracking of the landmark.

KEYWORDS: Computational Intelligence; Artificial Intelligence; International Sports Law

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