

Abstract: Distance detection of indoor target based on binocular vision

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Abstract

Distance measuring of intrusive targets is important for indoor monitoring, according to the detected intrusion target image, calculating the distance between the target and the camera, it can provide the basis for the computer to determine the type of invasion, and finally provide information for the security alarm. The paper hereby presents a system for the measurement which is based on binocular vision system. The system consists of data acquisition and storage module, moving target detection module, the corresponding point matching module and ranging module. In motion detection module, for dual-channel video capture respectively, the background subtraction algorithm is used for target extraction. Then based on analyzing features of the indoor monitoring area, objects in binocular images obtained by binocular camera will be coarse matched firstly, then will be fine matched using scale invariant features transform algorithm (SIFT) to find the accurate match points under this system. In the meantime, the traditional binocular parallax distance method can be revised as well. Experiments show that this system can be very effective in extracting moving targets, getting match points then measuring distance.

Acknowledgement

This project is supported by Scientific Research Project of the Education Department of Shaanxi Province. (11JK0929).