Abstract

Numerous micro-devices are interconnected in Wireless Multimedia Sensor Networks (WMSNs), such as surveillance. While due to view field of these multimedia sensors is oriented, blind spots caused by an occlusion is unavoidable, which will impact on surveillance service quality. For reducing this affection and figuring out a real sensing area, detailed formulas are given in this paper to compute real points. Four steps are designed to detect salient area, which act as potential obstacles. After that, an algorithm utilizing rectangle to approximate the detected areas is proposed, which consider hemline as an intersecting line between earth and objects. Then using this intersecting line as a benchmark, a maximum prism container is employed to find out the blind area. Experiments show that even for monocular image, this algorithm can efficiently find out the real view field of nodes. In addition, by considering physical obstacles in wireless multimedia sensors, this paper contributes to 3D field of view study.
- Wei Zhang, Q. M. Jonathan Wu, Guanghui Wang, Haibing Yin, An Adaptive
Computational Model for Salient Object Detection, IEEE TRANSACTIONS ON MULTIMEDIA, 12(4):300-316, JUNE 2010


Index Terms

Computer Science  Wireless

Keywords

Multimedia sensor nodes  Maximum prism container  Field of view