عنوان مقاله:

Improving Energy-Efficient Target Coverage in Visual Sensor Networks

محل انتشار:

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خلاصه مقاله:

Target coverage is one of the important problems in visual sensor networks. The coverage should be accompanied with an efficient use of energy in order to increase the network lifetime. In this paper, we address the maximum lifetime for visual sensor networks (MLV) problem by maximizing the network lifetime while covering all the targets. For this purpose, we develop a simulated annealing (SA) algorithm that divides the sensors' Field-of-View (FoV) to a number of cover sets and then applies a sleep-wake schedule for cover sets. We also identify the best possible FoV of sensors according to the targets' location using rotating cameras, to reduce the solution space and approaching to a near-optimal solution. Our proposed energy and neighbor generating functions of the SA result in a balanced distribution of energy consumption as well as escaping from local optima. We conduct some simulation experiments to evaluate the performance of our proposed method by comparing with some well-known solutions in the literature.

کلمات کلیدی:

target coverage; network lifetime; scheduling; simulated annealing; visual sensor networks