

Distributed Online Localization in Wireless Camera-based Sensor Networks By Tracking Multiple Moving Objects

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Abstract

We present a distributed algorithm for localizing wireless camera sensors in a network. Due to the complex nature of sensing modality of a camera sensor, the work presented here differs significantly from the previous localization methods. Our system does not require any beacon nodes, but only utilize object features of moving objects in the scene extracted from image sequence. The algorithm is fully distributed, and the localization estimates can be improved throughout the course of network life as more object features are obtained. We show simulations of our system using a graphical simulator we developed specifically for wireless camera sensor networks. Early results indicate that our system is capable of localizing a large network of cameras in different structural environments.