

Barrier Coverage With Wireless Sensors Iti Algorithmik Ii

Opimal Coverage in Wireless Sensor Networks Coverage Control in Sensor Networks Theory and Practice of Wireless Sensor Networks: Cover, Sense, and Inform Decentralized Coverage Control Problems For Mobile Robotic Sensor and Actuator Networks Cyber Security Wireless Sensor Networks The Art of Wireless Sensor Networks Algorithmic Aspects of Wireless Sensor Networks Wireless Algorithms, Systems, and Applications Advances in Wireless Sensor Networks Soft Computing in Wireless Sensor Networks Wireless Sensor Networks Algorithms for Sensor Systems Advances in Wireless Sensor Networks Wireless Algorithms, Systems, and Applications Data Science Combinatorial Optimization and Applications Proceedings of 2nd International Conference on Communication, Computing and Networking Wireless Algorithms, Systems, and Applications Algorithms for Sensor Systems

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ected area. This type of coverage is referred to as barrier coverage, where the sensors form a barrier for the intruders. A given belt region is said to be-barrier covered with a sen-sor network if all crossing paths through the region are - covered1, where a crossing path is any path that crosses the width of the region completely.

Barrier Coverage With Wireless Sensors

If a sensor network guarantees that every penetrating object will be detected by at least k distinct sensors before it crosses the barrier of wireless sensors, we say the network provides k-barrier coverage. In this paper, we develop theoretical foundations for k-barrier coverage.

Barrier coverage with wireless sensors | SpringerLink

We define the notion of k-barrier coverage of a belt region using wireless sensors. We propose efficient algorithms using which one can quickly determine, after deploying the sensors, whether a region is k-barrier covered. Next, we establish the optimal deployment pattern to achieve k-barrier coverage when deploying sensors deterministically. Finally, we consider barrier coverage with high probability when sensors are deployed randomly.

Barrier coverage with wireless sensors | Proceedings of ...

Abstract—Barrier coverage of a wireless sensor network aims at detecting intruders crossing the network. It provides a viable alternative for monitoring boundaries of battlefields, country borders, coastal lines, and perimeters of critical infrastructures.

Barrier Coverage with Airdropped Wireless Sensors - CORE

Barrier coverage is an important issue in many wireless sensor network applications, such as border intrusion detection and environmental safety monitoring.

Barrier coverage with wireless sensors | Request PDF

ected area. This type of coverage is referred to as barrier coverage, where the sensors form a barrier for the intruders. A given belt region is said to be k-barrier covered with a sen-sor network if all crossing paths through the region are k-covered1, where a crossing path is any path that crosses the width of the region completely.

Barrier coverage with wireless sensors - ACM Digital Library

For the barrier coverage problem in distributed settings, we give the 1st dis-tributed local algorithms for fully synchronous unoriented sensors. Our algorithms achieve barrier coverage for a line segment barrier when there are enough sensors tocovertheentirebarrier. Our1stalgorithmisobliviousandterminatesin $2n^2$

BARRIER COVERAGE WITH WIRELESS SENSOR NETWORKS

Wireless sensor networks, barrier coverage, network topol-ogy. 1. INTRODUCTION The US-Mexicoborder stretchfor 2000miles(Figure1), much of it barely patrolled and protected only by ditches or barbed wire at best, while every day numerous aliens attempt cross the border illegally. Recently, a senior US Congressman in-

Barrier Coverage With Wireless Sensors - Memphis

Local Barrier Coverage in Wireless Sensor Networks. Abstract: Global barrier coverage, which requires much fewer sensors than full coverage, is known to be an appropriate model of coverage for movement detection applications such as intrusion detection. However, it has been proved that given a sensor deployment, sensors can not locally determine whether the deployment provides global barrier coverage, making it impossible to develop localized algorithms, thus limiting its use in practice.

Local Barrier Coverage in Wireless Sensor Networks - IEEE ...

Abstract: In this paper, we define a new type of coverage problem named target-barrier coverage problem in wireless sensor networks. A target-barrier is a continuous circular barrier formed around the target. The target-barrier has a d bound constraint that is set depending on applications and needs, where d bound is the minimum distance of the constructed barrier from the target. Target-barrier coverage is very suited for application in defense surveillance, including detection of intrusion ...

The Target-Barrier Coverage Problem in Wireless Sensor ...

Barrier coverage is a critical issue in wireless sensor networks (WSNs) for security applications, which aims to detect intruders attempting to penetrate protected areas. However, it is di cult to achieve desired barrier coverage after initial random deployment of sensors because their locations cannot be controlled or predicted. In

Barrier Coverage in Wireless Sensor Networks

If a sensor network guarantees that every penetrating object will be detected by at least L distinct sensors before it crosses the barrier of wireless sensors, we say the network provides L-barrier coverage. In this paper, we develop theoretical foundations for L-barrier coverage.

CiteSeerX — Barrier coverage with wireless sensors

Barrier coverage with wireless sensors aims at detecting intruders who attempt to cross a specific area, where wireless sensors are distributed remotely at random. This paper considers limited-power sensors with adjustable ranges deployed along a linear domain to form a barrier to detect intruding incidents.

Problem Specific MOEA/D for Barrier Coverage with Wireless ...

Barrier coverage has been widely used to detect intrusions in wireless sensor networks (WSNs). It can fulfill the monitoring task while extending the lifetime of the network. Though barrier coverage in WSNs has been intensively studied in recent years, previous research failed to consider the problem of intrusion in transversal directions.

Achieving Crossed Strong Barrier Coverage in Wireles ...

Barrier Coverage with Sensors of Limited Mobility Anwar Saipulla Benyuan Liu Guoliang Xing Xinwen Fu Jie Wang Department of Computer Science Department of Computer Science and Engineering University of Massachusetts Lowell Lowell, MA 01854, USA [asaipull, bliu, xinwenfu, wang]@cs.uml.edu Michigan State University East Lansing, MI 48824 glxing@msu.edu **ABSTRACT** Barrier coverage is a critical ...

Barrier coverage with sensors of limited mobility | 10 ...

However, how to integrate inspection robots into wireless sensor networks is still a great challenge to form an efficient dynamic monitoring network for transmission lines. To address this problem, a dynamic barrier coverage (DBC) method combining inspection robot and wireless sensor network (WSN) is proposed to realize a low-cost, energy ...

Dynamic Barrier Coverage in a Wireless Sensor Network for ...

Barrier coverage is a critical issue in wireless sensor networks (WSNs) for security applications, which however cannot be guaranteed to be formed after initial random deployment of sensors.

Cost-effective barrier coverage formation in heterogeneous ...

Barrier coverage is a critical issue in wireless sensor networks deployed in security applications (e.g., border protection), whose performance strongly depends on the locations of sensor nodes. Existing works on barrier coverage typically assume that sensor nodes have accurate location information, which is not reasonable or practical for many real sensor networks.

Achieving location error tolerant barrier coverage for ...

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