

Public Abstract
First Name: Peng
Last Name: Zhuang
Degree: MS
Academic Program: Computer Science
Adviser's First Name: Yi
Adviser's Last Name: Shang
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Title: Wireless Sensor Network Aided Search and Rescue in Trails

In recent years, wireless sensor networks have been used in applications of data gathering and target localization across large geographical areas. In this thesis, we study the issues involved in applying wireless sensor networks to search and rescue of lost hikers in trails and focus on the optimal placement of sensors and access points such that the cost of search and rescue is minimized. Particularly, we address two problems: a) how to identify the lost hiker position as accurately as possible, i.e., obtain a small search region containing the lost hiker; and (b) how to search efficiently in search regions for different trail topologies and search agent capabilities.