Abstract

Clustering is one of the important techniques in Wireless Sensor Networks (WSNs). In this paper introduce Double Cluster Head Model (DCHM) for secure and accurate data fusion in WSNs. Data fusion is used to reduce the traffic load and conserves energy of the sensors. In this clustering technique each cluster has two Cluster Heads (CHs) and they are assuming to be trust. After clustering each sensor nodes needs to maintain a reputation and trust table which is used to find the compromised nodes. Each CH perform the data fusion process independently and its sends the fused data to the base station. In this base station dissimilarity coefficient is computed and compared with threshold value which is preset by the users. If the dissimilarity coefficient exceeds the threshold, the CHs will be added to blacklist, and the CHs must be reelected by the sensor nodes in a cluster. And also feedback is sent from the base station to the reputation and trust system, which can helps to identify and delete the compromised sensor nodes. Through a series of extensive simulations, it can found that the DCHM performed very well in data fusion security and accuracy.
- Robert Hummel, Sameera Poduri, Franz Hover, Urbashi Mitra, Guarav Sukhatme,
Clustering based Data Collection using Data Fusion in Wireless Sensor Networks


Index Terms

Computer Science

Wireless

Keywords

Double Cluster Heads; clustering; data fusion; security; accuracy; threshold.