



Secure way of Sending Information in Corrupted Areas Using BPR in WSN

Syeda Ayesha Unisa, Srinivasa A.H,

M.Tech IV Sem, Dept. of CSE, Dr.AIT, Bangalore, India

Associate Professor, Dept. of CSE, Dr.AIT, Bangalore, India

ABSTRACT: Wireless Sensor network involves difficulties in transmission of data among different node which may lead itself to face certain challenges like inaccurate data, misleading packet translation and disrupt in communication which is related to real time application having issues in Quality of service. Although the existing methods which are used to solve this issues are limited by certain criteria which involves the high risk of penetrating into the routing loops and interpreting the unwanted transmission the prior node that hits any ball in any of the way and which is not affected is chosen as the next hop thus its solved by using twin rolling ball techniques the of notification of affected nodes that can be carried out by fuzzy data clustering which involves the fragmentation of particular data in the stream which is then carried out by using proposed bypass techniques. In this technique the two balls that rotate consequently in two direction which in turn helps to solve all the parameters of Quality of service thereby increasing overall performance.

KEYWORDS: Wireless Sensor Networks, Fuzzy data Clustering, Bound hole.

I. INTRODUCTION

Since decades the wireless sensor network have been the resilient technology in all the modern, remote sensing application either with respect to tedious areas or environment the processing of data with respect to identification of certain events is turn through sensing and forwarding from the sensor node which are called as sink node. The communication among the sensor and sink node have certain limitation with respect to energy constraints and other resources which is carried out by a proper functioning of various intermediate node which link the received data to the other node till the data reaches appropriate destination which in turn enhances their battery lifetime and avoids looping of large amount of energy during its maintains and connectivity. The wsn can also pass the data among the different hubs in bicourse with a large capacity of detection these features of wsn make it suitable for different application like military, medical, commercial etc. The size of the network deployment can vary around of 10 to 1000 of hubs based upon its application. Each hub has a feature of detecting the environment changes and relay the data to all its nearby hubs that are present within its range to perform such operation each hub has structure called bolstered e.g. A microcontroller certain tasks, a self battery or the handset or the radio.

II. RELATED WORK

The Wireless sensor and the network that are deployed using various sensor are used to deal with the conditions like humidity, pressure, temperature etc in the huge environment and they also store and pass the data among the network to the server as the existing networks are more enhanced in terms of maintaining bi-directional communication and controlling of activities this paper gives an idea about by-passing routing in holes in the sensor networks and the holes which are related to optimal geographical routing the issues and challenges which are related to wsn are fault resilience, lifetime ,localization and mobility few of the protocols are proposed like the 3D forward algorithm which is used to transfer a packets to other node based on the short distance comparison method. The sensing capability in each of the small devices among the vast network is known as sense network. The topology used in the wired network requires the large amount of memory at each and every node and it would be adaptable easily in the greedy forwarding scheme the initial node which initiates the transmission knows the location of its

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destination which is done by using hash function in a data centric storage scheme or either by acquiring the service location in this process a packet is moved from the first hop to a node which is near to the destination and this process is repeated until the packet reaches the destination this process involves the local minima problem in this paper a system is carried out to define and discover the holes in the network and build complete routing path around that is this phenomena we deal with the boundary of hole mainly defined by its boundary of a hole. the most widely used technique is the geographical forwarding technique in this technique it has a property of maintain an extensive routing table and can make simple routing decision based on the position of the neighbouring nodes which comes in the routing path [3] this technique is scalable that has each and every node need to store the location of all the neighbouring nodes which leads to the collection of a huge information at each node hence the density of the network grows as the size of the network this geographical routing technique might not be efficient due to stuck of holes in the network while reaching its destination[4] this problem can be overcome by using different routing algorithm which deals with the feedback and load balancing

III.SYSTEM ARCHITECTURE

The Architecture which represents the internal and external design of any system which is divided into three phases mainly sensor nodes, notification of affected nodes and bypass routing in the first phase the process required for sensing the data from the senses is carried out hence it is called as sensor phase this level also activates the nodes checks the routing paths and the passes the data to be transmitted identified using fuzzy clustering method if the packets are stuck in the network in the second level the affected nodes are identified by using the fuzzy clustering method and in the last phase by bypassing of packets by taking it to next hop by the next hop method finally packets are forwarded to the destination with the routing techniques.

The complete system architecture is divides as

1. Getting the packet out
2. Bypass of the infected routes
3. Normal Routing

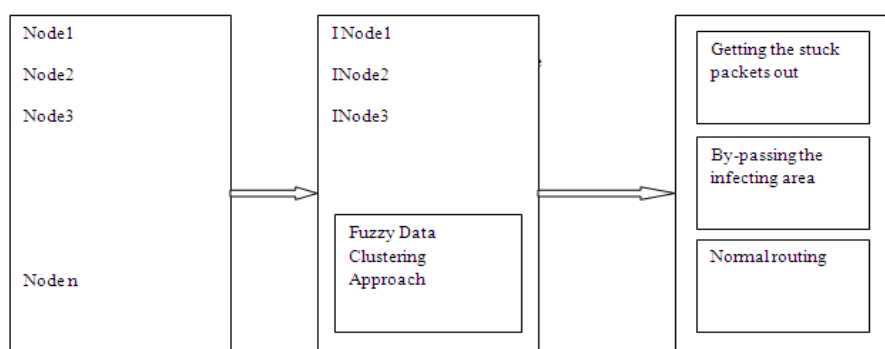


Fig 1 System Architecture

A. Flow Chart

The Fig 2 represents the overall implementation of the system in which the event are sensed by the sensor nodes which are been detected the infected nodes by the fuzzy data clustering in which the infected nodes are in the infected regions are identified by the specific areas thus it is detected by using the twin rolling ball technique. Thus if the ball hits the nodes it checks the in the clock-wise and counter clock wise if the ball hits nodes then the nodes are infected thus it searches for the next one hop neighbour thus it gets the stuck packet out in which the by-passing routing is done thus normal routing is done thus the packet reaches the destination.

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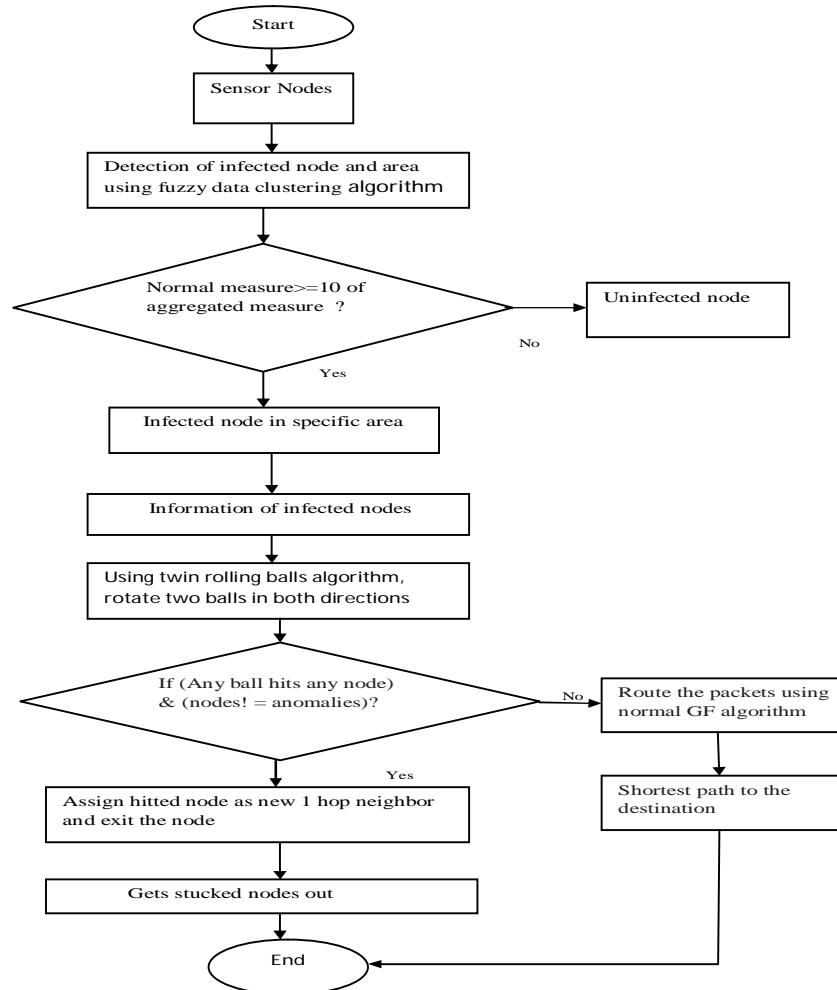


Fig 2 Flow Chart

IV. PROPOSED SYSTEMS AND IMPLEMENTATION

The objectives of the system are the packets which are stuck in the network is to avoid them in the infected regions from the infected areas thus bypass and divert the routes from the affected packets in the network. The proposed system is which specifies by using the fuzzy data clustering approach and the second approach is done by twin rolling ball approach.

The implementation approach is

1. Network Deployment
2. Network Discovery
3. Identification of Infected nodes
4. By-pass routing

B. Network Deployment

The network components which are created and deployed in the OTcl includes like creating the nam file by invoking the nam window and opening in the write mode. next by creating the topology by setting set topo after which configuring the node of network parameters by specifying the values. Assign the positions of nodes attach the node to



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UDP agent, attach the CBR traffic by setting packet interval along with packet size from source to sink then connect it with the agent

C. Network Discovery

The discovery procedure the sensor nodes which broadcast all the hello message to all the nodes and finds the neighbor node with sending the hello message with these procedure it stores all the information in the table with these it includes the network discovery phase. The nodes assign the position with xvalue, yvalue and hdistance in the network configuration is done by the parameters the discovery of the neighbor node is done by calculating the distance by two nodes later sending the hello packets with a procedure of starting node, end node time and time interval are written into the file as parameters later the activation of hello acknowledgment with ntemp and the neighbor nodes as helper files are written as hello.tcl with a command next with all the information a CBR traffic is attached from the source to the neighbour by writing the loop into the end block after receiving all the packets the source node declare that node as a neighbour before the operation all the nodes are ideal then after the discovery all the nodes will become active

D. Identification of Infected Nodes

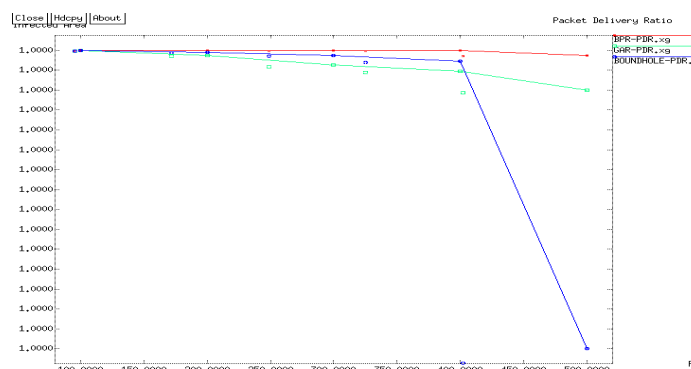
The affected nodes are identified using the fuzzy data clustering which is based on the receive Data signal this method is used as a modular and unsupervised method for evaluating data over different sensor nodes. A centre point of the data is considered to evaluate whether the node is affected or not through hardware malfunction ,malware attack or the software corruption thus the identification of infected in which it detects the occurrence of infected nodes and the nodes detects it with the infected nodes using the fuzzy data clustering approach this it regularly checks whether the nodes gets attacked fuzzy identifies based on the received signal and this infected nodes are identified.

E. By-pass Routing

The affected nodes information is directly used to divert the traffic in the proposed system this technique gives an introduction to the simultaneous twin rolling technique which method which detects the next hop easily than the existing gar method n this technique the first node that hits any ball in any of the direction and which is unaffected is chosen as the next hop further analysis of getting the stuck packets out of the affected area is done by passing later the shortest path is then used for the destination Fig 6.5 shows the bypass routing technique in which after detecting The infected nodes it bypasses using the twin rolling technique in which it detects the next 1-hop neighbor thus it removes the stuck packet out and bypasses the infected data with the normal routing the packet reaches the destination with the shortest path.

V. SIMULATION RESULTS

The simulation studies involve the deterministic small network topology represent the graphs of overall performance of the system which includes the packet delivery ratio, throughput, Energy consumption. Packet Delivery Ratio. The following graphs represent the packet delivery ratio of the existing system to that of the proposed system the results that represent the Smaller drop in the packet ratio. As we can see the drop ratio is smaller packet drop. It is defined as the exact amount of information which the system can process at time.



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Fig 3 Packet Delivery Ratio

It is defined as the exact amount of information which the system can process at time. Fig 4 represents the throughput of the system

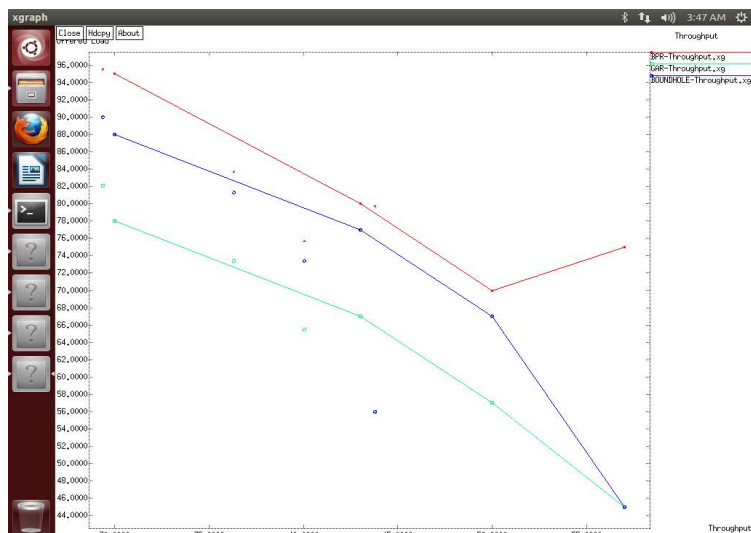


Fig 4 Throughput

VI. CONCLUSION

The infected areas are anomalous nodes detected using a fuzzy data clustering method and the information collected is used in the proposed BPR technique. With this mechanism, we have solved three major dilemmas in the traditional routing approaches: local minima, false boundary detection and visits to unnecessary nodes. We evaluated BPR using different scenarios in NS-2 and have proven it to exhibit high performance compared with the other studied protocols, BOUNDHOLE and GAR. The proposed twin rolling balls greatly help to define the next forwarding node and mitigate the false boundary detection applicable in the existing rolling ball technique. The introduction of dynamic routing greatly helps to minimize the possibility of false route diversion that may lead to substantial packet loss and long delays. We also have a different method of selecting the exit gate node which shortens the forwarding path to the destination node. Overall evaluation shows favourable and promising performance improvement over previous methods.

REFERENCES

- [1] Ashwini and A. S., "Information dissemination between nodes of different intersections intersection in city environment using hop greedy routing protocol (BAHG)," *Int. J. Ethics Eng. Manag. Educ.*, vol. 1, no. 4, pp. 232–236, Apr. 2014.
- [2] G. Q. Fang, J. Gao, and L. J., "Locating and bypassing routing holes in sensor networks," in *Proc. 23rd Annu. Joint Conf. IEEE Comput. Commun. Soc.*, 2004, pp. 2458–2468.
- [3] S. Subramanian, S. Shakkottai, and P. Gupta, "On optimal geographic routing in wireless networks with holes and non-uniform traffic," in *Proc. IEEE 26th Int. Conf. Comput. Commun.*, May 2007, pp. 1019–1027.
- [4] P. Bose, P. Morin, I. Stojmenovic, and J. Urrutia. Routing with guaranteed delivery in ad hoc wireless networks. *Wireless Networks*, 7(6):609–616, 2001
- [5] M. Ahmadi Livani and M. Abadi, "An energy-efficient anomaly detection approach for wireless sensor networks," in *Proc. 5th Int. Symp. Telecommun.*, 2010, pp. 243–248.
- [6] I. Akyildiz, W. Su, Y. Sankarasubramaniam, and E. Cayirci, "A survey on sensor networks," *IEEE Commun. Mag.*, vol. 40, no. 8, pp. 102–114, Aug. 2002.
- [7] N. Arad and Y. Shavitt, "Minimizing recovery state in geographic ad hoc routing," *IEEE Trans. Mobile Comput.*, vol. 8, no. 2, pp. 203–217, Feb. 2009.
- [8] N. Arad and Y. Shavitt, "Minimizing recovery state in geographic ad hoc routing," *IEEE Trans. Mobile Comput.*, vol. 8, no. 2, pp. 203–217, Feb. 2009.