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Improve the Performance of Cluster Head and Network Life time Using Fuzzy Logic

[1]A.K. Prathyusha [2]V. Aditya Ramalingeswar Rao
[1] Final Master of Science in Computer Science, Ideal college of Arts and Sciences, Vidyut Nagar, Kakinada, East Godavari, AP, India
[2] Assistant Professor, Department of Computer Science, Ideal college of Arts and Sciences, Vidyut Nagar, Kakinada, East Godavari, AP, India

ABSTRACT:
Gathering is one of the most influential methods that can position the system process in related manner to join the network scalability, moderate vigor ingesting, and attain lengthy network lifetime. To overcome this subject, present academics have activated the proposal of many clustering algorithms. Though, most of the future algorithms overload the cluster head (CH) throughout cluster formation. To overwhelm this problematic, many investigators have originated up with the impression of fuzzy logic (FL), which is practical in WSN for choice making. These procedures focus on the ability of CH, which could be adoptive, flexible, and bright suitable to allocate the weight among the sensor nodes that can improve the network lifetime.

KEYWORDS: energy model, linguistic, membership function.

1INTRODUCTION:
Sensor plans are susceptible to spiteful attacks such as impression, capture, capture or physical destruction, due to their unattended functioning environments and gaps of connectivity in wireless communication. Thus, safety is one of the most significant issues in numerous dangerous lively WSN applications. Dynamic WSNs are essential to communicate key security supplies, such as node authentication, data confidentiality and integrity, when and anywhere the bulges move. To address security, encryption key management protocols for lively WSNs have been planned in the past based on symmetric key encryption. Such type of encryption is well-suited for instrument nodes because of their partial energy and giving out skill. Still, it aches from high announcement above your head and requires large memory space to hoard shared pair wise keys. It is also not climbable and not tough against cooperation, and impotent to funding lump suppleness.

2LITERATURE SURVEY:
The hybrid arrangement lessens the high price public-key operations at the device side and substitutes them with well-organized symmetric-key based operations. In the meantime, the system validates the two individualities based on public-key credentials to dodge the typical key management problem in pure symmetric-key based protocols and keep a good amount of scalability. Also, present day its improved version with a speed but more announcement above.

The nature of message in sensor networks is random and failure-prone, even more so than in even wireless ad hoc networks. So, it is vital to deliver fault accepting techniques for dispersed sensor applications. Many new studies in this area take radically different methods to addressing the fault tolerance subject in routing, transport and/or application layers. In this paper, we précis and liken existing fault accepting methods to provision sensor applications.

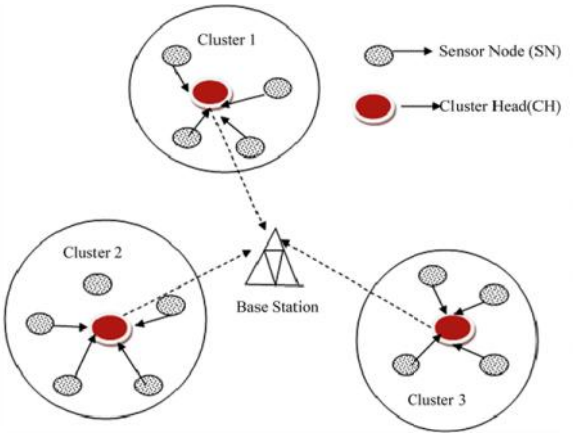
3PROBLEM DEFINTION:
Low Energy Adaptive Clustering Hierarchy (LEACH) and centralized LEACH (LEACH-C), two well-known clustering-based routing protocols are deliberated that delivers many more chances for emerging new protocols.

LEACH adopts Randomized probabilistic model, Local information for data transfer, Low energy media access control and Application specific data processing such as aggregation or compression etc.

4PROPOSED APPROACH:
The in-one-piece sensor network is alienated into number of levels and at each level, efficient Cluster

Head is elected based on T2FL Model. Three uncertain descriptors such as remaining battery power, distance to base station, and concentration have been measured. Each Cluster Head sends the data to the next level starting from the first level to the last level till it scopes at the base station. Multi-hopstatement protocol provides a wider scope for larger submission.

5SYSTEM ARCHITECTURE:



6PROPOSED METHODOLOGY:

Sender:
Thesender willlook the data file and then send to the exact receivers. Sender will send their data file to network andforms clusters, in a cluster chief energy sensor node will be galvanized and send to particular receiver (A, B, C…). And if any invader will change the energy of the certain sensor node, then sender willmove the energy for sensor node.

Network
In a network sender canopinion the node details, view routing path, view time delay and view attackers. Network willreceive the file from the sender, the cluster head will choice first and it size will abridgedrendering to the file size, then next time when we direct the file, the other node will be bunch head. Also, the cluster head will choice different node based on uppermost energy. The periodpostponement will be designed based on the routing delay. Attacker will be creating if spiteful data is added to conforming node.

Cluster
In a cluster the sensor node which has more energy painstaking as a cluster head. The sender willgive the oomph for each & every node. The sender will upload the data file to the network; in a network clusters are initiated and the cluster-based networks, to handpicked the highest energy sensor nodes, and send to individual receivers.

Receiver (End User)
The receiver can accept the data file from the sender vianetwork. The receivers take the file deprived ofaltering the File Contents. Users may obtain particular data files within the net only.

Attacker
Attacker is one who gives a jab the counterfeit energy to the consistent sensor nodes. The attacker criticizesthe energy to the specific sensor node. After attacking the nodes, energy will be altered in a network.

Network Model
After the network placement, each H-sensor forms a cluster by learning the adjoining L-sensors through beacon message exchanges. The L-sensors can connection a cluster, transfer to other clusters and also reply the previous clusters. To preserve the efficient list of neighbors and connectivity, the nodes in a cluster sporadicallyargue very trivialencouragement messages. The H-sensors boom any changes in their clusters to the BS, bring up-to-date the standing of the nodes when an incongruity node or node catastrophe is spotted.

Pairwise Key Generation
A node may transmission an announcement message to its district to cause the pairwise key system with its neighbors. The poster message contains its identifier and public key. At first, two protuberances set up a long-term pairwise master key between them, which is then used to spring the pairwise encryption key. The pairwise encryption key is short-term and can be rummage-sale as a session key to encrypt detected data.

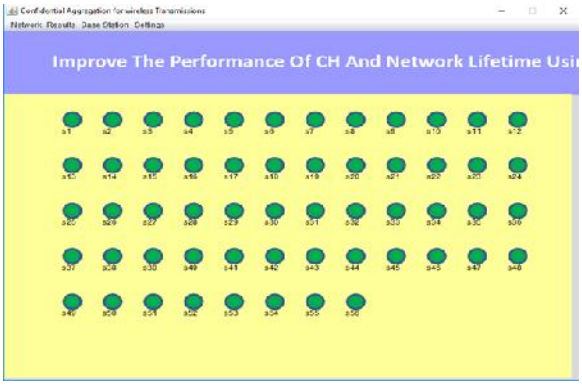
Cluster Formation
If the verification is fruitful, the H-sensor forms a cluster with the genuine L-sensors and they part a mutual cluster key. The H-sensor also founds a pairwise key with each member of the cluster. To abridge the debate, we attention on the operations inside one cluster and deliberate the j th cluster.

Key Update
In order to defendin contradiction of cryptanalysis and lessen damage from compromised keys, recurrent encryption key updates are usually required. In this section we deliver the pairwise key update and cluster key update operations. The pairwise master key does not necessitatebulletin updates, because it is not unswervingly used to code each session message. As long as the nodes are not negotiated, the pairwise master keys cannot be uncovered.

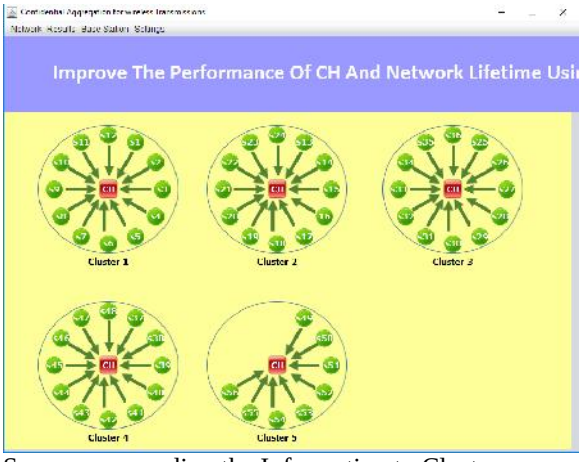
7FUZZY LOGIC ALGORITHM WITH TYPE-1 FL MODEL:

step1:Let N sensor nodes distributed randomly over M×M region where k clusters are assumed
step2: N sensor nodes are divided into different levels.
step3: Level should be numbered according to the distance from the base station.
step4:Elect the CH at each level based on T2FL Model.
step5: Apply Fuzzy if-then-else rule to elect the CH.
step6: Select k-optimal CHs in each round
step7: Transfer the data from one CH to other CH till it reaches bat the base station but data should come from the upper level
step8: One sensor node with higher energy is elected as a stand by SB-CH close to the base station to resume the connectivity if any failure occurs at last CH.
step9: BS collects the aggregated data from last CH in the chain.

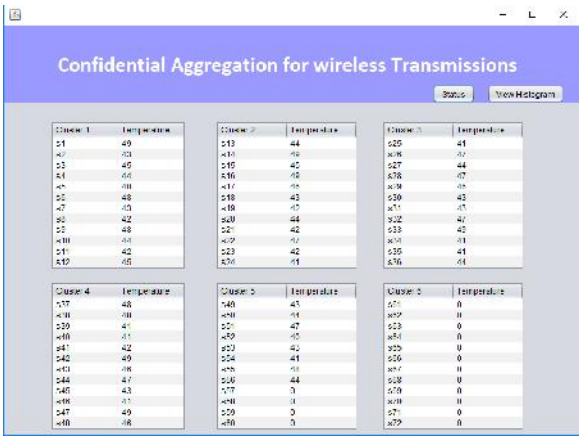
8RESULTS:



Select the Number of Sensors Nodes



Sensors are sending the Information to Clusters



It Generates the Temperatures at every Nodes from Base Station

EXTENSION WORK:

Each user (the aggregator) only wants to calculate a very small number of HMACs to encode her data (decrypt the sum). Henceforth, the totaling cost is very low, and the etiquette can gage to great systems with great plaintext spaces, reserve unnatural devices, and from top to bottom accretion loads. Extra nice belongings of our protocol are that it only wants a single round of user-to-aggregator communication.

9CONCLUSION:

Thefull sensor network is alienated into number of levels and at each level, well-organized Cluster Head is chosen based on T2FL Model. Three fuzzy descriptors such as residual battery power, coldness to base station, and attentiveness have been considered. Each Cluster Head sends the data to the next level till it spreads at the base station. The innovation of the procedureexploits the concept of Type 2 Fuzzy Logic extenuatingthose fuzzy logic model knobs real time difficulties more precisely than any other probabilistic prototypical

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Adabala Krishna Prathyusha is a student of Ideal College of Arts and Sciences Kakinada. Presently she is in Final Master of Science in Computer Science this college and affiliated to Adikavi Nannaya University, Rajamahendravaram, Andhra Pradesh. Her area of interest includes Computer Networks and Object-Oriented Programming languages, all current trends and techniques in Computer Science.

Mr. V. ADITYA RAMALINGESWAR RAO presently working as an Assistant Professor in P.G. Department of Computer Sciences in Ideal college of Arts and Sciences (P.G. Courses) Kakinada. He obtained M.Sc. (Computer Science) from Andhra University Visakhapatnam. And he did M.Tech(Computer Science and Engineering) from Aacharya Nagarjuna University Guntur. He haslecturer ship in Computer Science and Applications and have an Experience of 15 years of teaching.