Energy Efficient Clustering Protocol for Smart phone for sending DFU results to health care specialists

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ABSTRACT

The appropriate minimization of nodes energy consumption as well as the uniform energy depletion of all nodes, are critical parameters in order to increase the time the network is fully operational. A main reason of energy depletion concerns the need for transmitting the sensed data from the sensor nodes (SNs) to remote sinks. These data are typically relayed using ad hoc multi-hop routes in the Smart Phone for Sending DFU. A side-effect of this approach is that the SNs located closer to the sink are heavily used to relay data from all network nodes; hence, their energy is consumed faster, leading to a non-uniform depletion of energy in the Smart Phone for Sending DFU.

Because of more data collections and more packet transmission, the usage of energy of the system is more. For performing best clustering process Fan – Shaped Clustering (FSC) where the large scale network partitioned into fan-shaped clusters. In this approach performed with various combination of energy saving methods such as selection of cluster head and relay node, implementation of re-clustering and an efficient routing method and hotspot solution. For reducing signaling cost, localization re-clustering process performed. Selection of CH, Initially central area has been introduced. The usage of CH selection can optimize the intra-communication cost and reduce re-clustering frequency. Every CH pass the packet to their relay node, then the relay node transferred the packets to the next inner cluster group. All this process enabled the network to achieve good performance. Finally analyze the performance based on the different criteria such as the total alive nodes, the total residual energy and the packet collection rate with the some important parameters radius of central area, the energy threshold for relays and CHs

Keyword: *Diabetic Foot Ulcer, FNN, PSO*

1. INTRODUCTION

Energy efficiency is one of the major challenges in designing routing protocols for Wireless sensor networks. The energy utilization of the sensors is decreased by data transmission and reception. Therefore, the protocols designed for SMART PHONE FOR SENDING DFU s should be as energy efficient as much as possible so that it will extend the lifetime of each sensor node, and hence the lifetime of network .Clustering is a good technique to reduce energy consumption and to provide stability in wireless sensor networks. Clustering protocols which are discussed above each have their individual advantages and disadvantages. Depending upon the topology, the routing strategies and protocols can be applied. Every routingEECP for Smart phone for sending DFU has the major objective to reduce the energy consumption and Increase the lifetime of the network. By the use of clustering, energy consumption of sensor nodes is maintained in the network and carries out data aggregation by which the number of transmitted messages to base station gets decreased. Hence, the system conclude that clustering protocols are much efficient than the other non- clustering routing protocols in making more energy efficient SMART PHONE FOR SENDING DFU. More significantly, when a malignancy is positioned across the mid-sagittal plane, asymmetry analysis might not be helpful. Methods for segmenting an atlas have been thoroughly studied. Due to the fact that ulcer segmentation is carried out in one of the cerebral hemispheres, the asymmetric analysis approach can speed up the

process of ulcer identification and segmentation. However, locating the mid-sagittal plane precisely requires effort and time.

By comparing the differences between aberrant and normal Diabetic Foots, Diabetic Foot atlases can collect crucial information prior to ulcer segmentation enhancement. However, due to the intensity changes surrounding the ulcer generated by edoema and the deformations of healthy tissue shape induced by the mass impact of the disease, the deformable registration of the Diabetic Foot atlas to Diabetic Foot pictures with ulcer is a very difficult process. Affinity registration was employed in a prior work to match the atlas to the ulcer imaging data. The misalignment difficulties are recognised on the aligned atlas when a considerable Diabetic Foot structural distortion develops, which may greatly reduce segmentation accuracy. The 2-D/3-D data segmentation for ulcer has frequently utilised the contour/surface evolution approach. This approach may be expressed either as an active contour model/snake function or intuitively as a level set function. Employing magnetic resonance imaging for medical diagnostics Because the outcome is so crucial to patient care, prediction algorithms' robustness and accuracy are extremely vital. One of the key steps in surgery and therapy planning is Diabetic Foot ulcer segmentation. However, in clinical practise right now, the majority of Diabetic Foot ulcer segmentation in Diabetic Foot ulcer pictures is done manually. Manual Diabetic Foot ulcer delineation takes a lot of time, is challenging, and is operator-dependent. Thresholding, edge detection, and morphological approaches are examples of low-level procedures that are quick and simple to modify. However, the effectiveness of these approaches for ulcer segmentation heavily rely on the presence of a clear disparity in intensities between ulcer and non-ulcer zones. Simple growth methods for watersheds and regions regularly result in full borders. However, like with the intensity-based strategy, both two techniques are susceptible to noise. Furthermore, due to the weak and dispersed edges brought on by edoema, the majority of intensity-based approaches have a tendency to over segment ulcers. The mid-sagittal plane of the healthy human Diabetic Foot is generally symmetrical. Based on the idea that malignancies might produce asymmetry between the left and right cerebral hemispheres when they develop in one of the cerebral hemispheres, the asymmetric analytic approach for ulcer segmentation was developed. Ulcers can be generally localised in the appropriate Diabetic Foot hemisphere when this imbalance is found.

2. EXISTING AND PROPOSED SYSTEM

EXISTING SYSTEM: In the processing of digital images, segmentation is the procedure used to separate the portions. One of the common disorders that is managed by medical technology is Diabetic Foot ulcer. Early Diabetic Foot ulcer Measurement of Woundcan strengthen the preventative mechanism to a greater extent. One of the most crucial aspects of the job is using digital image processing tools to find Diabetic Foot ulcers. We will separate the Diabetic Foot ulcer region for digital photographs as part of our investigation. Doctors have used the magnetic resonance imaging () method to find Diabetic Foot ulcer. Finally, using the ROI approach, we will identify the presence of Diabetic Foot ulcer in the picture. We will then continue with the quantization process for images and concentrate on clustering processes of various detecting areas of the Diabetic Foot.

In order to minimize the total amount of energy spent on routing along a path originating at a sensor in a corona and ending at the sink, all the coronas must have the same width. Here HEEDEECP for Smart phone for sending DFU are introduced where obtained efficient clustering process. The clustering operation is divided into rounds and each round has two phases; the setup phase in which the sensors are organized into clusters after receiving a clear request from the BS to construct the clusters and the steady-state phase in which the collected data are forwarded indirectly to the BS via the cluster heads as in HEED.

PROPOSED SYSTEM: Initially network model is designed, by performing the clustering process can obtain the efficient network where minimized the residual energy, maximized the number of alive nodes, reduce the number of dead nodes and packet collection rate is also maintained. Here proposed Fan-Shaped Clustering (FSC) method. First partitions a large-scale network into concentric rings, then each ring is further divided into different parts, so as to form the fan-shaped clusters. The CHs are selected first from sensor nodes, then remaining nodes join one best CH to form clusters. In Cluster Head Selection, CH is a special node which collects data from member node and transfer this packet to sink. Select CHs using three criteria including residual energy, number of neighbors, and the distance from the base station of the nodes. The CH performs aggregation of the packets received from all the nodes present in their cluster. Also, all the nodes get a chance to become the CH to balance the overall energy consumption across the network. The CH is responsible for not only the general request but also receiving the sensed data of other sensor nodes in the same cluster and routing (transmitting) these data to the sink. Therefore, the energy consumption of the CH is higher than of other nodes. In order to balance the energy consumption for elongating the lifetime of

this SMART PHONE FOR SENDING DFU , the CH in a cluster is alternate among sensor nodes. Therefore, the CH selection manner will affect the lifetime of this network.

3. DESIGN METHODOLOGY

In Re-clustering process enabled once the CH.s energy gets down then the packets of the cluster are lost. Re clustering degrades the performance since the network cannot operate during clustering period while if the value is set too large, packet loss increases greatly this is because the probability that a CH depletes its energy is high during data collection period. Once the CH is down all packets collected in its cluster from the time it fails to the start of the subsequent re-clustering are lost. Re-clustering is performed partially instead for the whole network, partition the network field into different concentric rings (layer). CH sent the data to sink via other nodes that node is called as relay node. Relay node selection performed based on the CH property. If a node not play the CH role that node play as a relay. Routing in SMART PHONE FOR SENDING DFU s is very challenging due to the inherent characteristics that distinguish these networks from other wireless networks like mobile ad hoc networks or cellular networks. First, due to the relatively large number of sensor nodes, a routing EECP for Smart phone for sending DFU is considered adaptive if certain system parameters can be controlled in order to adapt to the current network conditions and available energy levels.

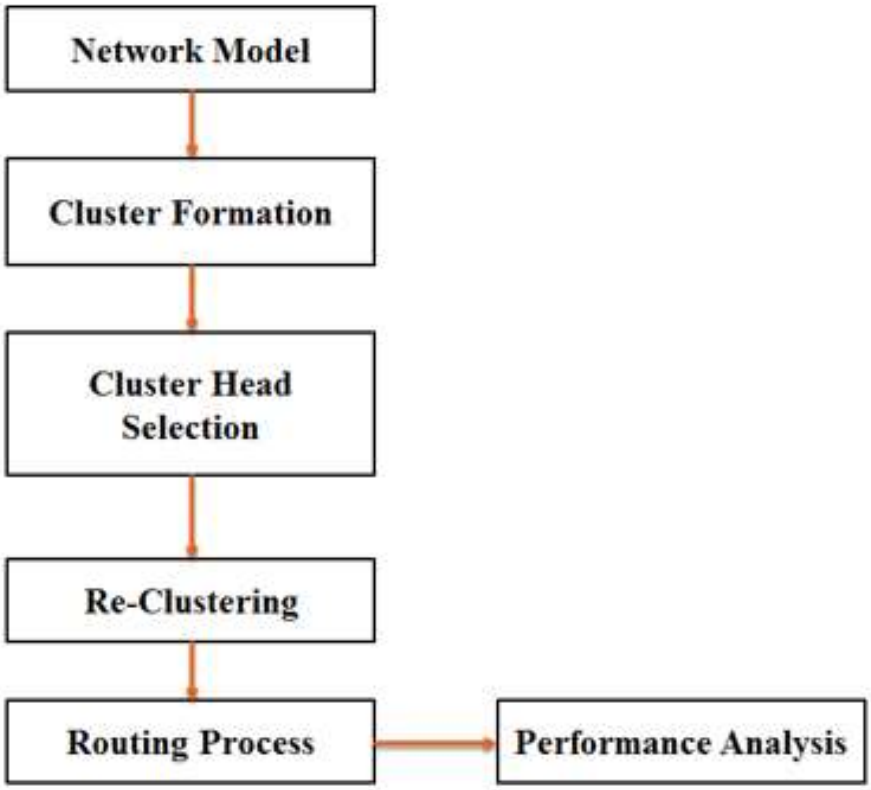

Fig. 3.1: System architecture of development model

The number of nonzero values in LAE for SRC was determined as follows. We first randomly selected 10 000 samples from the training data for each class at each level and computed the reconstruction error norms of all the selected samples using the dictionary. The number of nonzero values in LAE was varied from 5 to 1,200. Finally, the minimum reconstruction error was found when the number of nonzero values was set to 1000. After we investigated the results of different data groups, the mean DS of LIPC was 5.3% higher than that of SRC. The classification results with LIPC and SRC on different data groups are displayed, which shows that the proposed LIPC could be effectively used in ulcer segmentation.

3. RESULTS AND DISCUSSION

Following screenshots of Diabetic Foot ulcer Measurement of Wound using SVM algorithm. Figure 5.1 shows the various datasets used for processing.

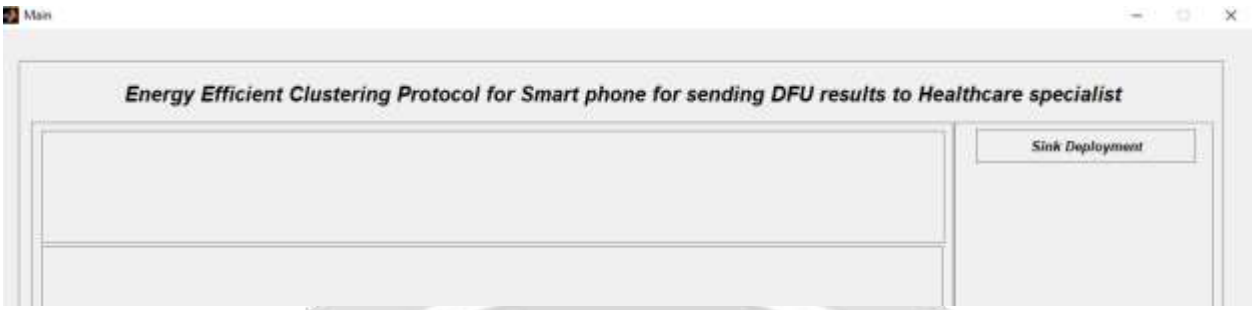

Fig 3.2: EECP model

Fig 3.3: EECP model network deployment

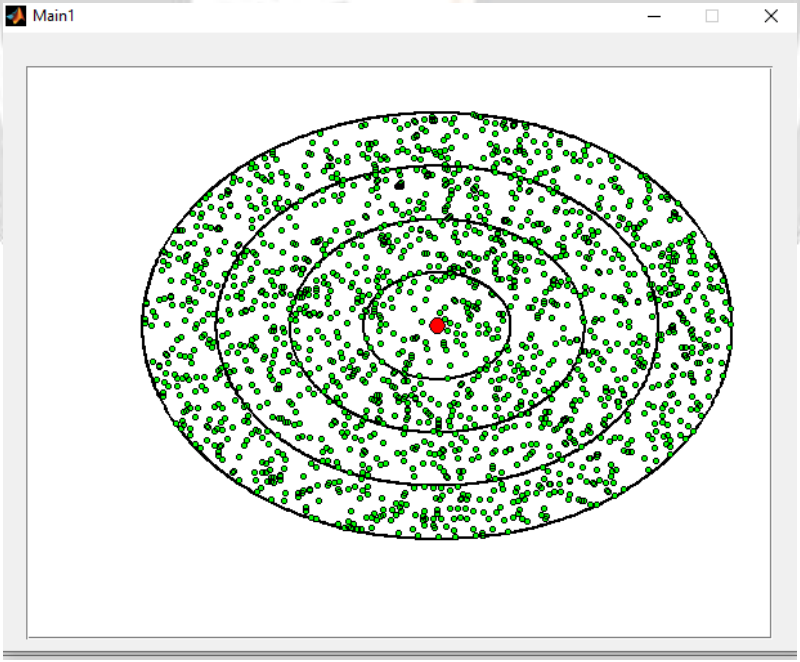

Fig 3.4: Cluster nodes of EECP model

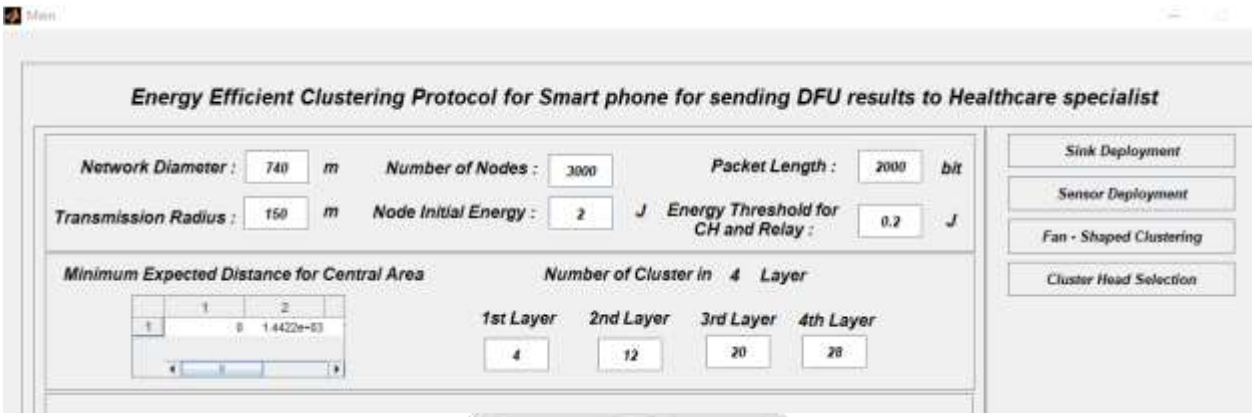

Fig 3.5: Number of Cluster nodes of EECP model

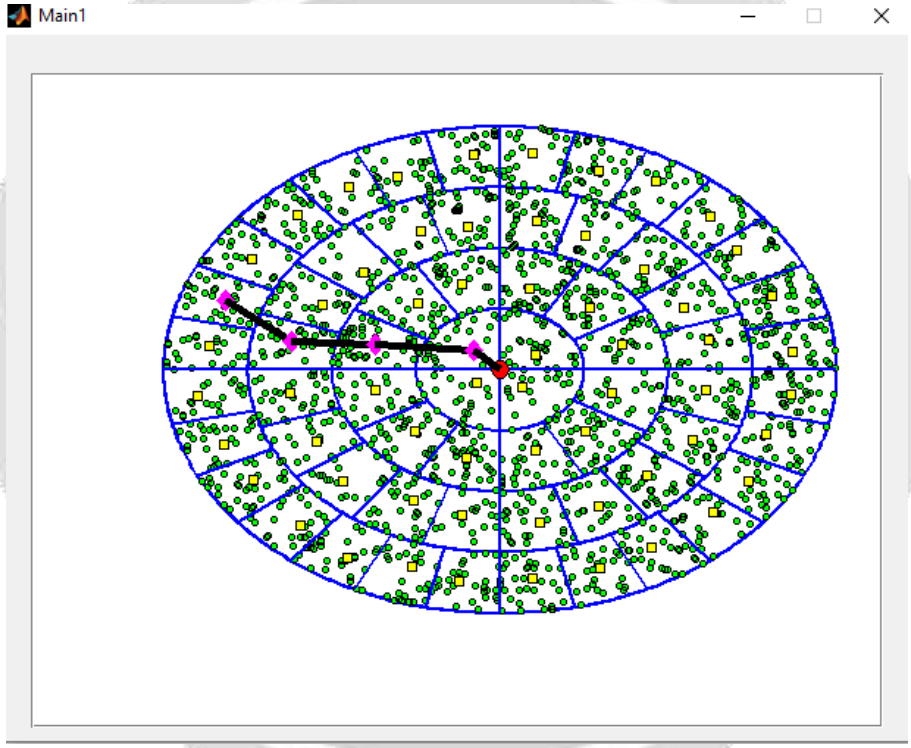

Fig 3.6: Cluster heads in each group nodes of EECP model

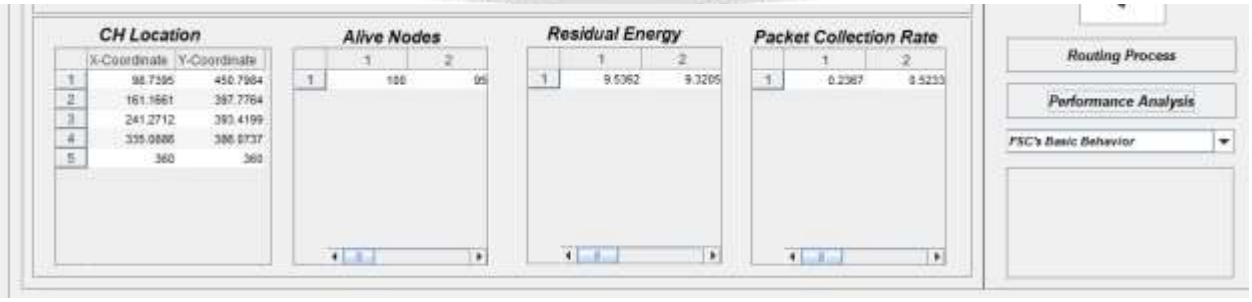

Fig 3.7: CH location Alive nodes of EECP model

4. CONCLUSION

This paper present to increase the network longevity is implemented by proposed by Fan-Shaped Algorithm. In these algorithms optimal distance-based transmission strategy was proposed on the basis of Ant Colony Optimization methods. This optimal distance-based strategy implemented for high energy efficiency, good energy balancing and also it achieved minimal energy utilization of nodes with maximal energy consumption entire the network.Contrary to typical communication networks, almost all applications of sensor networks require the flow of sensed data from multiple regions (sources) to a particular base station.

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