IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 1, August 2022
Impact Factor: 6.252

Dynamic and Optimized Routing Scheme based on Fuzzy with Trustable Transmission in Wireless Sensor Networks

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Abstract: *In this research work, an effective proposed scheme is used named, Dynamic and Optimized Routing Scheme with Secure Transmission in WSN to overcome above many in networks. It provides load balanced and optimized path selection using Secure Fuzzy Logic Optimization and finds a stable path between the source and destination meeting the delay requirement. To conquer security challenge, an active detection-based security and trust routing scheme named ActiveTrust is proposed for WSNs. The most important innovation of ActiveTrust is that it avoids attacks through the active creation of a number of detection routes to quickly detect and obtain nodal trust and thus improve the data route security. Our proposed scheme which maximizes end-to-end connectivity in the network and minimizes faults at link or/and node level. Secure Fuzzy Logic Optimization Routing (SFLOR) where the energy efficiency is taken as a major criterion for performing routing and deriving optimized path for data forwarding and processing to base node. The SFLOR generates a whole new path of routing by taking energy as fitness value to judge different path and choose best optimized path whose energy consumption is less as compared to other routing paths.*

Keywords: Wireless sensor networks, ActiveTrust, SFLOR, wireless video transmission, wireless multimedia sensor networks.

REFERENCES

[1]. Abbas, Nasim, and Fengqi Yu. "A traffic congestion control algorithm for wireless multimedia sensor networks", In 2018 IEEE SENSORS, pp. 1-4. IEEE, 2018.
[2]. Heinzelman, Wendi Rabiner, AnanthaChandrakasan, and Hari Balakrishnan. "Energy-efficient communication protocol for wireless microsensor networks." In Proceedings of the 33rd annual Hawaii international conference on system sciences, pp. 10-pp. IEEE, 2000.
[3]. Gupta, Gaurav, and Mohamed Younis. "Fault-tolerant clustering of wireless sensor networks." In 2003 IEEE Wireless Communications and Networking, 2003. WCNC 2003., vol. 3, pp. 1579-1584. IEEE, 2003.
[4]. Jiang, Chang-Jiang, Wei-Ren Shi, and Xian-lun TANG. "Energy-balanced unequal clustering protocol for wireless sensor networks." The Journal of China Universities of Posts and Telecommunications 17, no. 4 (2010): 94-99.
[5]. Latiff, NM Abdul, Charalampos C. Tsimenidis, and Bayan S. Sharif. "Energy-aware clustering for wireless sensor networks using particle swarm optimization." In 2007 IEEE 18th international symposium on personal, indoor and mobile radio communications, pp. 1-5. IEEE, 2007.
[6]. Rao, P. C., Prasanta K. Jana, and Haider Banka. "A particle swarm optimization based energy efficient cluster head selection algorithm for wireless sensor networks." Wireless networks 23, no. 7 (2017): 2005-2020.

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[7]. Alipio, Melchizedek, Nestor Michael Tiglao, Antonio Grilo, Fawaz Bokhari, Umair Chaudhry, and Shavez Qureshi. "Cache-based transport protocols in wireless sensor networks: A survey and future directions." Journal of Network and Computer Applications 88 (2017): 29-49.

[8]. Aslam, Nelofar, Kewen Xia, Ahmad Ali, and Saleem Ullah. "Adaptive TCP-ICCW congestion control mechanism for QoS in renewable wireless sensor networks." IEEE sensors letters 1, no. 6 (2017): 1-4.

[9]. Alipio, Melchizedek I., and Nestor Michael C. Tiglao. "Analysis of cache-based transport protocol at congestion in wireless sensor networks." In 2017 International Conference on Information Networking (ICOIN), pp. 360-365. IEEE, 2017.

[10]. Tiglao, Nestor Michael C., and António M. Grilo. "Cross-layer caching based optimization for wireless multimedia sensor networks." In 2012 IEEE 8th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), pp. 697-704. IEEE, 2012.

[11]. Tiglao, Nestor Michael C., and António M. Grilo. "An analytical model for transport layer caching in wireless sensor networks." Performance Evaluation 69, no. 5 (2012): 227-245.

[12]. Alipio, Melchizedek I., and Nestor Michael C. Tiglao. "A cache-aware congestion control for reliable transport in wireless sensor networks." In International Conference on Mobile Networks and Management, pp. 217-230. Springer, Cham, 2017.

[13]. Kafi, Mohamed Amine, Djamel Djenouri, Jalel Ben-Othman, and NadjibBadache. "Congestion control protocols in wireless sensor networks: a survey." IEEE communications surveys & tutorials 16, no. 3 (2014): 1369-1390.

[14]. Tiglao, Nestor Michael C., and António M. Grilo. "Transmission window optimization for caching-based transport protocols in wireless sensor networks." In International Wireless Internet Conference, pp. 39-46. Springer, Cham, 2014.

[15]. Grilo, António M., and Mike Heidrich. "Routing metrics for cache-based reliable transport in wireless sensor networks." EURASIP Journal on Wireless Communications and Networking 2013, no. 1 (2013): 1-16.

[16]. Meneses, Duarte, António Grilo, and Paulo Rogério Pereira. "A transport protocol for real-time streaming in wireless multimedia sensor networks." In 2011 7th EURO-NGI Conference on Next Generation Internet Networks, pp. 1-8. IEEE, 2011.

[17]. N. M. C. Tiglao and A. M. Grilo, "Cross-layer caching based optimization for wireless multimedia sensor networks," in Wireless and Mobile Computing, Networking and Communications (WiMob), 2012 IEEE 8th International Conference on,Oct2012,pp.697–704.

[18]. Tiglao, Nestor Michael C., and António M. Grilo. "An analytical model for transport layer caching in wireless sensor networks." Performance Evaluation 69, no. 5 (2012): 227-245.

[19]. Alipio, Melchizedek I., and Nestor Michael C. Tiglao. "A cache-aware congestion control for reliable transport in wireless sensor networks." In International Conference on Mobile Networks and Management, pp. 217-230. Springer, Cham, 2017.

[20]. Wei, David X., and Pei Cao. "NS-2 TCP-Linux: an NS-2 TCP implementation with congestion control algorithms from Linux." In Proceeding from the 2006 workshop on ns-2: the IP network simulator, pp. 9-es. 2006.

[21]. Patel, Sanjeev, P. K. Gupta, Arjun Garg, Prateek Mehrotra, and Manish Chhabra. "Comparative analysis of congestion control algorithms using ns-2." arXiv preprint arXiv:1203.3654 (2012).

[22]. Kim, Tae-Woon, Sang-Hwa Chung, In-Su Yoon, and Jeong-Soo Kim. "Effects of handover on TCP congestion control algorithms over mobile WiMAX." In 2008 5th IEEE Consumer Communications and Networking Conference, pp. 1230-1231. IEEE, 2008.