A Panacea to Soft Computing Approach for Sinkhole Attack Classification in a Wireless Sensor Networks Environment

- Conference paper
- First Online: 31 March 2021
- pp 78–87
- Cite this conference paper

Futuristic Trends in Network and Communication Technologies(FTNCT 2020)

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Part of the book series: Communications in Computer and Information Science ((CCIS,volume 1395))
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Abstract

Small sensor nodes with the capability to sense and process data make up a wireless sensor network (WSN). This environment has limitations of low energy, low computational power and simple routing protocols; making is susceptible to attacks such as sinkhole attack. This attack happens when the enemy node in the network camouflages as a genuine node nearest to the base station, thereby have information sent by a source node to another destination node travel through it, giving it chance to alter, drop or delay information from reaching to the base station as intended. In our paper, the research developed a sinkhole detection technique, an enhancement of ant colony optimization by including a hash table in the ant colony optimization technique to advance sinkhole attack detection and reduce fa1se alarm rate in a wireless sensor network. An increase in the detection rate of 96% was achieved and result out performed other related research works when compared and further research discussed.

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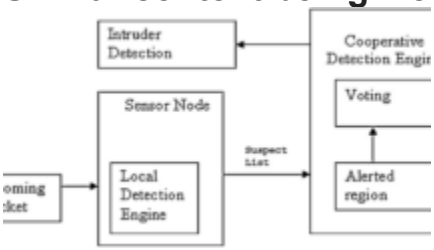

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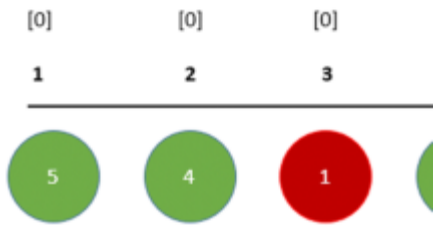

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Cite this paper

Nwankwo, K.E., Abdulhamid, S.M., Ojeniyi, J.A., Misra, S., Oluranti, J., Ahuja, R. (2021). A Panacea to Soft Computing Approach for Sinkhole Attack Classification in a Wireless Sensor Networks Environment. In: Singh, P.K., Veselov, G., Vyatkin, V., Pljonkin, A., Dodero, J.M., Kumar, Y. (eds) Futuristic Trends in Network and Communication Technologies. FTNCT 2020. Communications in Computer and Information Science, vol 1395. Springer, Singapore. https://doi.org/10.1007/978-981-16-1480-4_7

Download citation

- .RIS
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- DOIhttps://doi.org/10.1007/978-981-16-1480-4_7
- Published31 March 2021
- Publisher NameSpringer, Singapore
- Print ISBN978-981-16-1479-8

- Online ISBN978-981-16-1480-4
- eBook PackagesComputer ScienceComputer Science (R0)

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