عنوان مقاله:

Proposing a Algorithm for Optimizing Energy Consumption

محل انتشار:

اولین کنفرانس بین المللی برق، مکانیک و علوم مهندسی (سال: 1399)

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نویسنده:

Amir hossein derakhshan fard - *Department of mechanic engineer , iran*

خلاصه مقاله:

The purpose of this paper is to use the social spider algorithm to improve energy consumption in wireless sensor networks. In this regard, finding a suitable place for routers was done with a social spider algorithm in the system by selecting and optimally placing elements in the network and revising the Objective function. To use it, the initial number was 12, and the maximum number of loop iterations in the algorithm was 100 replications. We achieved these values with several runs and errors. Besides, to achieve the best results, to solve the problem, they can be considered as the default algorithm. In this research, the MATLAB implementation language was used to implement the spider algorithm, and then NS 2.35 tool was used to simulate the network environment and use the algorithm. In this study, three standard gate placement algorithms were used for comparisons, including BRP, RDP, and RGP. The results showed that the proposed method could have the lowest energy consumption. It can cause fair and uniform energy consumption between all nodes. It will also increase the lifetime of the network. Optimization of routing algorithms for such networks by using the spider algorithm also reduced the number of errors (failures) in the system and increased the life of the network with the help of the mentioned method. The proposed method, compared to the techniques presented before this study, is acceptable and, while creating the desired capabilities in terms of security, does not impose much time overhead on the system.

کلمات کلیدی:

Optimization, Energy Consumption, Wireless Sensor Networks, Social Spider Algorithm

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