

عنوان مقاله:

Improvement of Network-on-chip Routing Algorithm by Neuro-Fuzzy Method for Energy Consumption Management in Internet of Things

محل انتشار:

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خلاصه مقاله:

Today, the internet of things like any other technology has brought a number of positive achievements. Increased efficiency in using resources, increased productivity, decreased service costs, more demand for storage space and bandwidth, design of products with ability for digital communication, and provision of precise information for monitoring are just part of the positive achievements brought by the internet of things. Also, the technologies and principles of the internet of things has greatly affected many technical fields such as the network-on-chip design and architecture, thus stimulating a widespread demand. Despite the advancements, the energy consumption constraint is an important issue in these networks. In the recent years, use of intelligent and capable devices such as the neural networks have been remarkably considered. This research uses a neuro-fuzzy routing protocol to overcome the issues, where the cluster heads are selected through fuzzy inference system. Also, to determine the exact number of clusters for establishment of fuzzy rules, the artificial intelligence neural networks (AINNs) are used, where by considering the number of learning and hidden layers, the output outcomes can be optimized and the system efficiency can be enhanced. Studies show that the proposed routing protocols can solve some of the issues in areas such scalability, energy, maintenance, and integration.

کلمات کلیدی:

Internet of Things, Network-on-chip, Fuzzy Routing, Decreased Energy Consumption

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