عنوان مقاله:

Modified Q-Learning Based Fully Adaptive Routing Algorithm for NoC Interconnect Architectures

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خلاصه مقاله:

This paper proposes a performance-enhancing fully adaptive and fault-tolerant routing algorithm based on reinforcement learning as a new solution for increasing the traffic load balance in Network-on-chips (NoCs). We show how the proposed algorithm named Modified Q-Learning Routing (MQR) algorithm, which uses reduced computations related to adaptive algorithms, distributes the traffic uniformly across the entire network to avoid overloaded links. Simulation results depict that the proposed routing algorithm is able to route packets even in the case of faulty links or switches in the NoC and can make the best choice in the worth situations by computing all of the possible routes between every source and destination nodes. MQR guarantees packet delivery as much as possible. In this algorithm inherently there isn't any problem of live-lock, and it can manage both dead-lock and starvation.

کلمات کلیدی:

fault tolerance, adaptive routing, Network on chip

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