

عنوان مقاله:

GA-PSO-Optimized Neural-Based Control Scheme for Adaptive Congestion Control to Improve Performance in Multimedia Applications

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خلاصه مقاله:

Active queue control aims to improve the overall communication network throughput, while providing lower delay and small packet loss rate. The basic idea is to actively trigger packet dropping (or marking provided by explicit congestion notification (ECN)) before buffer overflow. In this paper, two artificial neural networks (ANN)-based control schemes are proposed for adaptive queue control in TCP communication networks. The structure of these controllers is optimized using genetic algorithm (GA) and the output weights of ANNs are optimized using particle swarm optimization (PSO) algorithm. The controllers are radial bias function (RBF)-based, but to improve the robustness of RBF controller, an error-integral term is added to RBF equation in the second scheme. Experimental results show that GA- PSO-optimized improved RBF (I-RBF) model controls network congestion effectively in terms of link utilization with a low packet loss rate and outperforms Drop Tail, proportional-integral (PI), random exponential .marking (REM), and adaptive random early detection (ARED) controllers

کلمات کلیدی:

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