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Title	Development of a Real-Time Dynamic Weighting Method in Routing for Congestion Control: Application and Analysis
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Abstract	<p>Congestion control issues have received consistent attention from several telecommunication researchers and practitioners for many years because network congestion often causes significant packet loss and delay problems. Although many suggested methods for these issues and problems can be available in telecommunication literature, there is room for improvement. This paper's primary objective is to propose a dynamic weighting method in routing to reduce congestion during peak hours by predicting incoming traffics and optimizing weights in the adjacency matrix of the routing table online. While changing weight values in the routing table, this method implicitly changes the routing path of many nodes through the congested node. As a result, the packet losses and delays can be decreased in used nodes. The main steps of this proposed framework are fourfold. First, the candidate weighing list is calculated based on the routing table of the congested node. Second, a proposed auto-adaptive framework (AAF) is used to predict congestion levels and apply the weighing list in the network node. Third, the evaluation of network congestion is then performed by the probability of packet losses due to overflowing buffers. Finally, the case study results demonstrate that the proposed AAF framework can significantly reduce network congestion.</p>