

عنوان مقاله:

Using Wavelet Bases in Combination with RLS for Prediction of Network Traffic with ComplexCorrelation Structure

محل انتشار:

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خلاصه مقاله:

Leland showed in his breakthrough paper that the Ethernet traffic has a self similar property. Afterwards the tremendous amounts of works have been done around the self similarity in network traffic and its influence on QoS parameters and performance evaluation of computer networks. The prediction of network traffic with complex correlation structure that is characterized by the Long Range Dependence (LRD) as well as Short Range Dependence (SRD) is one of today's high speed networks main problems. Choosing the suitable wavelet bases that do this reduction quickly, can lead to more accurate predictors. Previous work uses only Daubechies 40 wavelet basis. In his paper we choose the suitable wavelet bases experimentally. The mean absolute error is measured as a performance parameter. According to simulation results, two different wavelet bases, Coiflet 5 and Symlet 20 with adopted Recursive Least Squares (RLS) are more accurate predictors than Daubechies 40 for prediction of network traffic with correlation structure. So these wavelet bases can "better reduce the complex correlation structure of network traffic to .SRD

کلمات کلیدی:

Long Range Dependence, Self Similarity, Traffic Prediction, RLS, Wavelet

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