

Content-aware Network Coding for Layered Video over Wireless Relay Networks

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Abstract— Transmission issue of wireless video, as the hugest percentage among mobile traffics, is a challenge problem in wireless/mobile networks. To tackle video transmission problem occurred in heterogeneous networks as well as different devices, scalable video coding (SVC) has been developed. Also, network coding (NC) enables to transmit efficiently for same given bandwidth. In this paper, we propose a simple random linear network coding (RLNC) for SVC transmission with decode and forward (DF) system over wireless relay network. In order to transmit base layer of SVC with high reliability using characteristics of RLNC in DF relay system, we propose a method which re-groups differently basic coding units of base layer and enhancement layers in SVC. The simulation shows our proposed method gains better performance compared to previous methods.

Keyword— Network coding (NC), Scalable Video Coding (SVC), Relay network, Decode and forward, Amplify and forward



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