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Research Article

Adaptive Error Resilience for Video Streaming

Lakshmi R. Siruvuri, Paul Salama, and Dongsoo S. Kim

Department of Electrical and Computer Engineering, Purdue School of Engineering and Technology, Indiana University-Purdue University at Indianapolis, 723 West Michigan Street, SL160, Indianapolis, IN 46202, USA

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Abstract

Compressed video sequences are vulnerable to channel errors, to the extent that minor errors and/or small losses can result in substantial degradation. Thus, protecting compressed data against channel errors is imperative. The use of channel coding schemes can be effective in reducing the impact of channel errors, although this requires that extra parity bits to be transmitted, thus utilizing more bandwidth. However, this can be ameliorated if the transmitter can tailor the parity data rate based on its knowledge regarding current channel conditions. This can be achieved via feedback from the receiver to the transmitter. This paper describes a channel emulation system comprised of a server/proxy/client combination that utilizes feedback from the client to adapt the number of Reed-Solomon parity symbols used to protect compressed video sequences against channel errors.