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网络、通信与安全

一种无线实时流媒体增强型自适应FEC控制机制

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摘要 无线网络动态的信道特性和带宽有限等特点，使得在无线环境下为流媒体应用提供QoS保证面临更大的挑战。提出一种用于无线实时流媒体传输的增强型自适应前向纠错控制策略，以提高接收方的播放质量。该策略采用跨层设计的方法，根据当前的网络状态，自适应地调整MPEG视频帧的发送速率，在视频源数据和冗余数据之间动态分配网络带宽。仿真结果表明，该策略能使接收方获得最大的可播放帧率，有效提高流媒体传输的可靠性和实时性。

关键词 自适应前向纠错 无线流媒体传输性能 跨层设计

分类号

Enhanced adaptive FEC mechanism for wireless media streaming

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Abstract

The real-time delivery of multimedia data over wireless links is a big challenge due to the unreliable and dynamic characteristics of wireless networks，limited bandwidth and QoS requirements for multimedia applications.In this paper，the author proposes an Enhanced Adaptive Forward Error Correction（EAFEC） algorithm for wireless media streaming，in the hope that the media can be played on receivers with high quality.The algorithm，based on the current network condition and cross-layer optimization design，adjusts the sending rate of MPEG video frame adaptively and allocates the network bandwidth resource between the MPEG video source data and redundant data dynamically.The simulation result shows that the proposed EAFEC mechanism achieves better quality of media streaming，in terms of playable frame rate，reliability and real-time performance on the receiving side.

Key words adaptive FEC wireless media streaming performance cross-layer design

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