

网络、通信与安全

基于视觉掩蔽特性的感兴趣区渐进图像传输

郑继明, 周大伟

重庆邮电大学 计算机科学与技术学院, 重庆 400065

收稿日期 2007-6-26 修回日期 2007-8-24 网络版发布日期 2008-2-25 接受日期

摘要 利用人眼的视觉掩蔽效应, 以图像小波变换为基础, 改进了传统的感兴趣区渐进图像传输算法。在ROI图像质量得到保证的同时, 优先传输视觉上重要的小波系数, 并提出一种灵活的背景传输机制。此机制引入扩展因子的概念来说明背景图像相对于ROI的重要性, 并且可以根据网络带宽利用扩展因子来调节背景图像的传输方式, 以确保从整体上改善图像的主观视觉效果。仿真实验从主观和客观两个方面对改进算法和传统算法进行了对比分析, 验证了该算法的有效性。

关键词 [感兴趣区 \(ROI\)](#) [小波变换](#) [视觉掩蔽效应](#) [图像渐进传输](#)

分类号

ROI progressive image transmission based on visual masking effect

ZHENG Ji-ming,ZHOU Da-wei

College of Computer Science and Technology, Chongqing University of Posts and Telecommunications, Chongqing 400065, China

Abstract

Based on the wavelet transform of image, the conventional ROI progressive transmission algorithm is improved using visual masking effect. On the premise of the high quality of ROI image, the important coefficients for human vision will be transmitted firstly. And a flexible background image transmission mechanism is proposed. An expansion factor S is introduced in order to indicate the importance of BG image relative to ROI. Moreover, depending on different network bandwidth, the factor can be used to control the BG image transmission mode so as to assure that the whole image have good objective visual effect. In the simulation experiment, the objective and subjective comparative analysis between conventional algorithm and improved algorithm will be made. Eventually, the experimental results proved the validity of the proposed algorithm.

Key words [Region of Interest \(ROI\)](#) [wavelet transform](#) [visual masking effect](#) [image progressive transmission](#)

DOI:

通讯作者 郑继明 no1_David@126.com

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(867KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“感兴趣区 \(ROI\)” 的相关文章](#)

▶ 本文作者相关文章

· [郑继明](#)

· [周大伟](#)