

基于直方图修改的图像密文域可逆信息隐藏

郑淑丽, 李丹丹, 胡东辉, 张云玲

(合肥工业大学 计算机与信息学院, 安徽 合肥 230009)

摘要: 提出了基于块平滑度排序和直方图修改的图像密文域可逆信息隐藏算法. 首先对图像进行分块, 块平滑度排序以及对每块进行置乱加密; 然后依据直方图修改的规则在密文块中隐藏秘密信息; 最后既可以先进行图像解密再提取信息, 也可以先提取信息再进行图像解密. 实验仿真结果表明, 此算法不仅实现了信息提取和图像解密完全分离, 且与现有算法相比, 在实现零误差高隐藏容量的同时进一步提高了非满载情况下的图像质量.

关键词: 块平滑度排序; 直方图修改; 图像密文域; 可逆信息隐藏

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Reversible Data Hiding in Encrypted Images by Histogram Modification

ZHENG Shu-li, LI Dan-dan, HU Dong-hui, ZHANG Yun-ling

(School of Computer and Information, Hefei University of Technology, Hefei 230009, China)

Abstract: A novel reversible data hiding in encrypted domain is proposed based on block sorting and histogram modification. The first work divides image into blocks and blocks sorting, and each block is permuted by scrambling encryption. Then, the histogram of each block is modified to vacate room for secret data. Finally, the receiver can decrypt firstly and then extract data, the inverse process is also viable. Experiments show that the operator of data extraction and image decryption is completely separable in the proposed method, and compared with the existing methods, the proposed method has improved embedding capacity while maintaining zero error rate, and has better image quality while under-capacity.

Key words: block sorting; histogram modification; encrypted images; reversible data hiding

作者简介:

郑淑丽 女, (1974-), 博士, 副教授. 研究方向为多媒体内容安全、无线传感网络等.

李丹丹 女, (1989-), 博士. 研究方向为图像密文域可逆信息隐藏. E-mail: lidandan110506@126.com.

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