



Improved Additive Spread Spectrum Embedding for Data Hiding

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Abstract

Watermarking and data hiding are the important tools to protect the ownership rights of digital multimedia contents. To reduce the interference effect of the host signal in the popular Spread Spectrum (SS) embedding scheme, we have proposed Correlation-and-bit-aware Additive Spread Spectrum (CASS) data hiding for Laplacian distributed host image signals and published in *Signal Processing: Image Communication* 29 (2014)1171–1180. This paper proposes another Improved Additive Spread Spectrum (IASS) embedding scheme. We carry out some comparative experiments for the existing ASS, CASS, Correlation-and-bit-Aware Improved Additive Spread Spectrum (CAIASS) and proposed IASS embedding schemes by some Monte Carlo simulations. Compared with the existing embedding schemes, the proposed IASS maintains the simplicity of the decoder of ASS. For the noise-free scenario, the proposed IASS could yield error-free decoding performance. For the noise scenario, the experimental results show that IASS could significantly reduce the host effect in data hiding and improve the watermark decoding performance remarkably.

Biography

Xiaoqiang Zhang has completed his joint-PhD at the age of 30 years from Beihang University (BUAA) and University of British Columbia (UBC). He is the teacher of China University of Mining and Technology (CUMT) right now. His reach interests are image encryption and image watermarking. He has published more than 30 papers in reputed journals or conferences.

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