High Performance Electrocardiogram Steganography Based on Fast Discrete Cosine Transform

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Abstract : Based on fast discrete cosine transform (FDCT), the authors present a high capacity and high perceived quality method for electrocardiogram (ECG) signal. By using a simple adjusting policy to the 1-dimentional (1-D) DCT coefficients, a large volume of secret message can be effectively embedded in an ECG host signal and be successfully extracted at the intended receiver. Simulations confirmed that the resulting perceived quality is good, while the hiding capability of the proposed method significantly outperforms that of existing techniques. In addition, our proposed method has a certain degree of robustness. Since the computational complexity is low, it is feasible for our method being employed in real-time applications.

Keywords : data hiding, ECG steganography, fast discrete cosine transform, 1-D DCT bundle, real-time applications

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