

## Secured Embedding of Patient's Confidential Data in Electrocardiogram Using Chaotic Maps

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**Abstract :** This paper presents a chaotic map based approach for secured embedding of patient's confidential data in electrocardiogram (ECG) signal. The chaotic map generates predefined locations through the use of selective control parameters. The sample value difference method effectually hides the confidential data in ECG sample pairs at these predefined locations. Evaluation of proposed method on all 48 records of MIT-BIH arrhythmia ECG database demonstrates that the embedding does not alter the diagnostic features of cover ECG. The secret data imperceptibility in stego-ECG is evident through various statistical and clinical performance measures. Statistical metrics comprise of Percentage Root Mean Square Difference (PRD) and Peak Signal to Noise Ratio (PSNR). Further, a comparative analysis between proposed method and existing approaches was also performed. The results clearly demonstrated the superiority of proposed method.

**Keywords :** chaotic maps, ECG steganography, data embedding, electrocardiogram

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