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Engineering : Computational Intelligence

Mandal, Jyotsna Kumar

Reversible Steganography and Authentication via Transform Encoding

- Covers various aspects of steganography and authentication in a range of domains
- Presents discussions substantiated by examples
- Includes comparative analyses of performances

This book focuses on reversible steganography and authentication via transform encoding, fully discussing in detail the reversibility computation of six transformation techniques: DFT, DCT, wavelets, Z, binomial and grouplet, as well as chaos-based authentication. The book also describes algorithmic approaches based on all transformations along with implementation details and results. Further topics include embedding and extraction into the spatial domain, tuning using GA-based approaches and embedding into imaginary coefficients of the Z domain. Featuring detailed algorithms for encryption and descriptions of all techniques, including embedding techniques for all transform-based steganographic processes, the book also explores the adjustment of pixel values after embedding and presents numerical examples of reversible computations. In the context of chaos-based authentication, it also describes testing the quality of generator is using Monobit, Serial and Poker tests. The book then outlines 15 test cases recommended by NIST fifteen test cases, along with their implementation on six evolutionary algorithms for neural cryptographic systems in the context of wireless computations – TPM, KSOMSCT, DHLPSCT, CHDLPSC, CTHLPSC and CGTHLPSC – and verifies their satisfiability based on the implementations of these six techniques. Lastly it presents various metrics of image processing systems. This book is a valuable reference resource for research scholars, PG/UG students and practicing engineers

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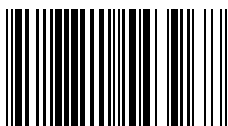
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