Abstract

This is a new authentication scheme based on the secret sharing method with a data repair capability for document type color images via the use of portable network graphics (PNG) image. And generate the authentication signals to each block of image, which together with the binarized block content, this authentication signals are transformed into a several shares using the secret sharing Scheme. The characters are carefully chosen from image so that many shares as possible are generated and embedded into an alpha channel plane. The alpha channel is combined with the original cover image to form a PNG image. While shares embedding process, the computed shares values are mapped into a range of alpha channel value near their maximum value of 255 to yield a transparent stego image. In the process of image authentication, the block in an image is marked as a tampered if the authentication signal computed from the current block content of a binary image does not match that extracted from the share embedded in the alpha channel plane. Data repair is applied to each tampered block after collecting two shares from unmarked block.

References

Index Terms

Computer Science
Image Processing
Keywords
Image Authentication  Data Hiding  Secret Sharing  Portable Network Graphics
Data Repair
stego image