Abstract

Pixel Expansion has been one of the problems of Visual Cryptography that is yet to be properly addressed. Existing methods to deal with this problem either have security vulnerabilities and/or produce results of poor quality. In this paper we propose a grouping based approach to encoding shares in Visual Cryptography without pixel expansion. In our approach we try to find groups of $x \times y$ (where $x$ and $y$ are number of sub-pixels along width and height respectively in the pixel expansion structure of traditional visual cryptography) of the same type where ever possible to encode them. Pixels that do not fall into such group are collected and encoded separately. In our technique, we are able to avoid security vulnerabilities (i.e. shares showing patterns resembling secret image) present in existing techniques of pixel expansion free visual cryptography. Also the resultant image produced by overlapping the shares are of much better visual quality compared to existing schemes.

Index Terms

Computer Science Security

Keywords

Visual Cryptography Pixel Expansion Group based Encoding of Shares