

Random-Grid-Based Visual Cryptography Schemes

ABSTRACT:

This paper discusses a random-grid-based nonexpanded visual cryptography scheme for generating both meaningful and noise-like shares. First, the distribution of black pixels on the share images and the stack image is analyzed. A probability allocation method is then proposed that is capable of producing the best contrast in both the share images and the stack image. With our method, not only can different cover images be used to hide the secret image, but the contrast can be adjusted as needed. The most important result is the improvement of the visual quality of both the share images and the stack image to their theoretical maximum. Our meaningful visual secret sharing method is shown in experiments to be superior to past methods.