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An image encryption scheme using self-adaptive selective permutation and inter-intra-block feedback diffusion

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**Highlights**

- We propose an improved permutation-diffusion method which is completely different from existing methods. This improvement idea provides another possibility for implementing the encryption architecture.
- Before the permutation, we propose a method of random quantization which can preprocess locations information.
- Based on random quantization, selective permutation is designed as a self-adaptive method to achieve the reciprocal relationship among image data, which is a novel technology for permutation rule generation.
- A feedback-based diffusion mechanism is utilized in diffusion phase for the first time.
- The experimental results show the proposed encryption algorithm has excellent performance compared with exiting algorithms.

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