Abstract

In this paper, based on histogram modification, a feasible reversible data hiding scheme is proposed by using prediction error expansion and edge detected information. The benefit of
Histogram Modified Reversible Data Hiding based on Canny Edge Detection and Prediction Error expansion

RDH lies on security of hidden data as well as quality of color image used to carry this data. RDH provides the facility of retrieving the embedded data as well as the cover medium used for hiding data without any degradation. The algorithm makes use of canny edge detection to exploit correlation between the three channels in color image. This will add the advantage of increasing accuracy of prediction error in one channel. Histogram modification is the method to extract and embed the data in image. For this, image is divided into two blocks and histograms of these blocks are modified. For finding overflow and underflow pixels during embedding, it uses a location map. The algorithm can embed and extract the data even though the color image has subjected for different noises like Gaussian noise, salt and pepper noise, image rotation and staircase artifacts.

References

- Kuo-Liang Chung, Huang, Chang and Mark Liao "Reversible data hiding-based approach for intra frame concealment in H.264/AVC," IEEE transactions on circuits and systems for video technology, vol. 20, no. 11, November 2010
- Xiaolong Li, Bin Li, Bin Yang, and Tieyong Zeng "General framework to histogram shifting based reversible data hiding," IEEE transactions on image processing, vol. 22, no. 6, June 2013
- Xiaolong Li, Jian Li, Bin Li, Bin Yang "High fidelity RDH scheme based on pixel value ordering and prediction error expansion," Signal Processing 93 (2013) 198–205
- A. S. Revathi, A. Amsaveni, Dr. P. T. Vanathi "Prediction error based reversible
Histogram Modified Reversible Data Hiding based on Canny Edge Detection and Prediction Error expansion

data hiding for color images based on cross channel correlation", Conference proceedings, national conference on Communication, Information & Telematics (CITEL 2014) conducted by ECE Dept. of Kumaraguru College of Technology, Coimbatore

- Jian Li, Xialong Li, Bin Yang "Reversible data hiding scheme for color image based on prediction-error expansion and cross channel correlation", Signal Processing 93 (2013) 2748–2758

Index Terms

Computer Science  Image Processing

Keywords

Prediction Error Precision  Histogram Modification  Canny Edge Detection  Location Map