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Abstract

Edge is a basic feature of image. The image edges include rich information that is very significant for obtaining the image characteristic by object recognition. Edge detection refers to the process of identifying and locating sharp discontinuities in an image. So, edge detection is a vital step in image analysis and it is the key of solving many complex problems. In this paper, the main aim is to study the theory of edge detection for image segmentation using various computing approaches based on different techniques which have got great fruits.

Reference

- Rafael C. Gonzalex, Richard E. Woods, Image Segmentation in the book titled Digital Image Processing Chapter 10,Page No>589-664,Second Edition.
- Paulus, Color image processing: methods and applications in color image Segmentation Selected Techniques, chapter 5, pp.103-128, CRC Press, Boca Rato, Fla, USA, 2007.

- Most Recent Trends and Future Research Directions in Color in Image and video Processing, Hidwani publications, 2008.
- First Arkansan Deshmukh, Member IAENG, Second B.Ganesh Shinde, Adaptive Color Image Segmentation Using Fuzzy Min-Max Clustering, Engineering Letters, Advance online Publication, Aug-2006.
- T.M.Mahmoud and S.Marshall, Edge –Detected Guided Morphological Filter for Image Sharpening in the EURASIP Journal on Image and Video Processing, 2008
- Dong Hu and Zianzhong Tian, A Multi-directions Algorithm for Edge Detection Based on Fuzzy Mathematical Morphology, Proceeding of the 16th International Conference on Artificial Reality and Telexistence- Workshops (ICAT'06'), IEEE, 2006.
- Rey-Sern L ,Edge Detection by Morphological Operations and Fuzzy Reasoning, in, IEEE, 2008.
- First A.Kanchan Deshmukh, Member IAENG, Second B.Ganesh Shinde, Adaptive Color Image Segmentation Using Fuzzy Min-Max Clustering, Engineering Letters, Advance online Publication, Aug-2006.
- Wafe barkhoda, Fardin Akhlaqian Tab, Om-Kolsoom Shahryari, Fuzzy Edge Detection Based on Pixel's Gradient and Standard Deviation Values, Iran, 2009.
- Evelyn Brannock, Michael Weeks, A synopsis of Recent Work in Edge detection using the DWT, in IEEE, 2008.
- Timothy P.Donovan and Nelson L.Passos, Edge Detection through the Use of a Combined Genetic Algorithm –Linear Technique Approach.
- M.K.Lee, S.W.Leung, T.L.Pun and H.L.Cheung, Edge Detection By Genetic Algorithm in IEEE, 2000.
- Berend jan van der Zwaag, Kees Slump and Lambert Spannenburg Analysis of Neural networks for Edge Detection in Proceedings IEEE Benelux Signal Processing Symposium, 2002, Swedan.
- Maher I.RAJAB AND KHALID A.AL-HINDI, Analysis of Neural Network Edge Pattern Detectors in Terms of Domain Functions, SEAS Transactions on Information Science & Applications “, issue 2, Volume 5, February 2008.
- Lihong Zheng and Xingjian He, Edge Detection Based on Modified BP Algorithm of ANN, 2007, Australia.
- Nian Cai, A Wavelet Neural Network for Edge Detection, Congress on Image and Signal Processing, IEEE, 2008.
- Yu Lei and Nie Jiafa, Subpixel Edge Detection Based on Morphological Theory in the Proceedings of the World Congress on Engineering and Computer Science ,WCECS 2008, October ,2008, San Francisco, USA
- Kanchan Deshmukh, Abhijeet Nandedkar, Yeshwant Joshi and Ganesh Shinde, Multilevel Approach for Color Image Segmentation.
- A.Jiang, C.L.Chuang, Y.L.Lu and C.S.Fahn, Mathematical- morphology-based edge detectors for detection of thin edges in low-contrast regions in The Institution of Engineering and Technology (IET) Image Processing, pp.269-277, 2007.
- Bhabatosh Chanda, Morphological Algorithms for Image Processing in IETE Technical Review, Vol.25, No-1, Jan-Feb, 2008.
- Zijuan Yu, Yuqian Zhao, XiaoFang Wang, Research Advances and Prospects of Mathematical Morphology in Image Processing in IEEE , 2008.
- Osslan Osiris Vergara Villegas and Raul Pinto Elias, Digital Image Processing in Wavelet

Domain

- JunLi ,Thesis,A Wavelet Approach to Edge Detection, Sam Houston State University,Texas,2003.
- J. M. Niya, A. Aghagolzadeh , M. A. Tinati, and S.Feizi, 2-step wavelet-based edge detection using gabor and cauchy directional wavelets, IEEE Trans. Acoustics,Speech, Signal Processing, vol. 37, page(s): 2091-2110, December 1989.
- Ismail Avcibas, Bulent Sankar, Khalid Sayood, Statistical evaluation of image quality measures, Journal of Electronic Imaging ,2002.

Index Terms

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Soft Computing

Key words

Edge detection

Image Segmentation

Fuzzy logic

Genetic Algorithm

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Mathematical morphology

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