

Enhanced Global and Local Curvature Properties for Corner Detection

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Abstract:

Corner detection is basically a methods used to extract certain kind of features in images which could produce some information including the location or position of the corner points. Thus, in this paper an enhancement shape corner detection method is proposed to detect true corners of shape images. The overall performance of the proposed enhanced shape corner detector and six other existing shape detectors and descriptors including Harris, SUSAN, Harris-Laplace, CSS, SIFT and global and local curvature properties is presented. The experimental results of corner detection methods are tested using the benchmark binary image MPEG-7 Core Experiment Shape-1 Part B dataset. To measure the performance of corner detection evaluation, an appropriate number of true corners were determined.

Keywords: Corner Detection; Extract Certain; Descriptors Including; Shape Detectors

References

- [1] Yadav, A. and Yadav, P. 2009 Digital Image Processing. Published by USP/Laxmi Publications (P) Ltd., New Delhi.
- [2] Awrangjeb, M., and Guojun, L. 2013 A Performance Review of Recent Corner Detectors. Paper presented at the Digital Image Computing: Techniques and Applications (DICTA)
- [3] Kavitha, K., and Sudhamani, M. V. 2014 Object Based Image Retrieval from Database Using Combined Features. Paper presented at the Signal and Image Processing (ICSIP)
- [4] Kuo-Lung, H., and Chieh-Hsien, L. 2012 A Novel Image Retrieval Technique Based on Salient Image Features. Paper presented at the Innovations in Bio-Inspired Computing and Applications (IBICA)
- [5] Ben-Musa, A. S., Singh, S. K., and Agrawal, P. 2014 Object detection and recognition in cluttered scene using Harris Corner Detection. International Conference on Control, Instrumentation, Communication and Computational Technologies (ICCICCT).