

{tag}

Advances in Computing  
IJCA Journal

{/tag}

IJCA Proceedings on National Conference on  
© 2015 by

NCAC 2015 - Number 6

Year of Publication: 2015

Authors:

Jyoti S. Kulkarni

Rajan Kumar S. Bichkar

{bibtex}ncac175082.bib{/bibtex}

## Abstract

Image fusion is a process of combining relevant information from input images. Several image fusion techniques are available and are used according to the application. Now-a-days advanced sensors are used for image acquisition. However these sensors usually cannot capture whole information. Hence images from different sensors are combined together to produce more informative image. When image fusion algorithm is applied, different solutions are available. Thus it is necessary to select an optimal solution for image fusion. This optimal solution fuses the input images giving a fused image which contains more information than either input images. Genetic algorithm is an optimization method used for searching solution of large number of problems. This paper gives a brief overview of image fusion techniques using

genetic algorithms.

## Refer

### ences

- Hengjun Zhao, Zhaowei Shang, Yuan Yan Tang and Bin Fang, "Multi-focus image fusion based on the neighbor distance", Pattern Recognition, vol. 46, pp. 1002-1011, 2013.
- Liu Cao, Longxu Jin, Hongjiang Tao, Guoning Li, Zhuang Zhuang and Yanfu Zhang, "Multifocus image fusion based on spatial frequency in discrete cosine transform domain", IEEE Signal Processing Letters, vol. 22, no. 2, Feb 2015.
- H. B. Kekre, Dharendra Mishra and Rakhee Saboo, "Review on image fusion technique and performance evaluation parameters", International Journal of Engineering Science and Technology, vol. 5, no. 4, pp. 880-889, April 2013.
- H. B. Kekre, Tanujaarode and Rachana Dhannawat, "Image fusion using kekre's hybrid wavelet transform", IEEE International Conference on Communication, Information & Computing Technology, pp. 1-5, Oct 2011.
- H. B. Kekre, Tanuja Sarode and Rachana Dhannawat, "Implementation and comparison of different transform techniques using kekre's wavelet transform for image fusion", International Journal of Computer Applications, vol. 44, no. 10, pp. 41-48, April 2012.
- Mantas Paulinas and Andrius Usinskas, "A survey of genetic algorithms applications for image enhancement and segmentation", Information Technology and Control, vol. 36, no. 3, pp. 278-284, 2007.
- Aqeel Mumtaz, Abdul Majid and Adeel Mumtaz, "Geneticalgorithms and its application to image fusion", IEEE International Conference on Emerging Technologies, Oct 2008.
- Richa Gupta and Deepak Awasthi, "Wave-packet image fusion technique based on genetic algorithm", IEEE International Conference on Confluence the Next Generation Information Technology Summit, pp. 280-285, 2014.
- Mohamad Awal, Kacem Chehdi and Ahmad Nasri, "Enhancement of the segmentation process of multicomponent images using fusion with genetic algorithm", IEEE International Multi-Conference on Systems, Signals and Devices, July 2008.
- Anil Kumbhar, Anju Kulkarni and Uday Sutar, "Fusion of multiple features in magnetic resonant image segmentation using genetic algorithm", 3rd IEEE International Advance Computing Conference, pp. 811-816, Feb 2013.
- Liang Hong, Zongyi He, Jian Xiang and Shixiang Li, "Fusion of infrared and visible image based on genetic algorithm and data assimilation", IEEE International Workshop on Intelligent Systems and Applications, May 2009.
- Arpita Das and Mahua Bhattacharya, "Evolutionary algorithm based automated medical image fusion technique: comparative study with fuzzy fusion approach", 2009 World Congress on Nature & Biologically Inspired Computing, Dec 2009.
- Chaunté W. Lacewell, Mohamed Gebriel, Ruben Buaba, and Abdollah Homaifar, "Optimization of image fusion using genetic algorithms and discrete wavelet transform", National Aerospace and Electronics Conference, July 2010.

- Jingbo Zhang, XueFeng, Baoling Song, Mingjie Li and Yinghua Lu, "Multi-focus image fusion using quality assessment of spatial domain and genetic algorithm", 2008 conference on Human System interactions, May 2008.
- PrayothKumsawat, KittiAttakitmongcoland ArthitSrikaew, "A new approach for optimization in image watermarking by using genetic algorithms", IEEE Transactions on Signal Processing, vol. 53, no. 12, Dec 2005.
- Jao Ho Jang, YoonsungBae and Jong Beom Ra, "Contrast-enhanced fusion of multisensor images using subband-decomposed multiscale retinex", IEEE Transactions on Image Processing, vol. 21, no. 8, Aug 2012.

Computer Science

### Index Terms

Image Processing

### Keywords

Image Fusion genetic Algorithm Wavelet Transform Optimization.