Abstract

Super-resolution technique is used for resolution enhancement. In Multiframe Super-resolution multiple low resolution images are combined to get high resolution image. Most important part of Multiframe Super-resolution is Image Registration that estimates translation, rotation and scaling parameters. In this paper they propose combination of PCA and GPOF registration method for constructing high resolution image. In GPOF registration method, which reach the sub pixel precision and allow large pixel motions and then apply PCA method which is used for compression of image. Image fusion is applied to get one output image. Then bicubic interpolation is used to get high resolved image. Experiment images show that the HR image by our proposed method has much higher quality than other methods.

References

Image Registration using combination of PCA and GPOF Method for Multiframe Super-Resolution

- Lan Zhang; Hua Zhang; Simiao Zhang; Yanbing Xue, "Multi-frame image super-resolution reconstruction based on GPOF registration and L1-norm", Natural Computation (ICNC), 2010 Sixth International Conference on, vol. 7, no., pp. 3601,3604, 10-12 Aug. 2010
- Nan Zhao; Cuihua Li; Hua Shi; Chen Lin, "Multi-Frame Image Super-Resolution Based on Regularization Scheme", Control, Automation and Systems Engineering (CASE), 2011 International Conference on, vol., no., pp. 1,4, 30-31 July 2011.

Index Terms

Computer Science

Image Processing
Keywords
Spatial resolution; multiframe super-resolution; Gaussian Pyramid Optical Flow; Principal Component analysis; image fusion; Bicubic image interpolation