Abstract

The general requirements of an image fusion process are that it should preserve all valid and useful pattern information from the source images, while at the same time not introducing artifacts that could interfere with subsequent analysis. However it is not possible to combine images without introducing some form of distortion. As the image fusion technologies have been developing quickly in a number of applications such as remote sensing, medical imaging, machine vision, and military applications in recent years, the methods that can assess or evaluate the performances of different fusion technologies have been recognized as an urgent requirement. Usually, comparative evaluation by human visual inspection in image fusion is used to assess the relative fusion performance of different fusion schemes. In this paper, various quantitative quality metrics have been implemented to evaluate the performance of the fusion algorithms objectively. Some commonly used image
fusion schemes, based on pixel and region based fusion algorithms, and the discrete wavelet transform (DWT), are performed to evaluate the effectiveness of the various metrics.

Reference


Index Terms

Computer Science

Computer Vision

Key words

Image fusion

wavelet transform

performance evaluation