Abstract

Super-resolution is the process of combining one or more low-resolution images to obtain a high-resolution image. It has been a very interesting topic for the research over the last few years. It is used for practical applications in more realistic problems faced in different areas, which range over satellite and aerial imaging of biomedical image processing as well as in daily routine life like different biometrics in offices and industries. In this survey article, more focus is given on basic algorithms and their classification based methodology used to implement it. Due to its vast scope of applications researchers are developing a novel super-resolution algorithm for a specific intention based on single and multiframe image resolution. The proposed comprehensive survey gives an overview of most of published works based on its performance analysis. In this survey, the basic concepts of the algorithms are explained and then their performance analyses through which each of these methods have developed are mentioned in detail. Furthermore, different issues in super-resolution algorithms for single and multiframes such as models and registration algorithms, optimization of the deployment of methods, improvement in quality of image.

Single and Multi frame Image super-resolution and its Performance Analysis: A Comprehensive Survey


Index Terms

Computer Science  

Image Processing

Keywords

Single and multi frame superresolution  

Image registration  

wavelet transform  

Assessment of SR algorithms.