Abstract

Digital image processing refers to the process of digital images by means of digital computer. The main application area in digital image processing is to enhance the pictorial data for human interpretation. In image acquisition some of the unwanted information is present that will be removed by several preprocessing techniques. Filtering helps to enhance the image by removing noise. The aim of this paper is to demonstrate the lowpass and highpass filtering techniques, however they are the filtering techniques used in Fourier and Wavelet Transformations. In Wavelet Transform these two filters play an important role in reconstructing the original image by using subband coding. Lowpass filter will produce a Gaussian smoothing blur image, in the other hand, high pass filter will increase the contrast between bright and dark pixel to produce a sharpen image.

References

- BH Brinkmann, A Manduca, RA Robb, "Optimized homomorphic unsharp masking
  - Image Processing - Laboratory 9, "Image filtering in the spatial and frequency domains," Technical University of Cluj-Napoca
- B. S. Anami, D. G. Savakar, Aziz Makandar, and P. H. Unki (2005), "A Neural Network Model for Classification of Bulk Grain Samples Based on HSI and Texture," in proceedings of International Conference on Cognition and Recognition, pages 359-368.
- Herman J. Blinchikoff, Anatol I. Zverev, "Filtering in the Time and Frequency Domains."  

**Index Terms**

Computer Science  
Image Processing  

**Keywords**

Fast Fourier Transform (FFT)  
Lowpass Filter  
Highpass Filter  
Wavelet Transform.