Abstract

Object classification is an important task in computer vision techniques. In this paper we
proposed a region based object classification technique using multiscale Fourier descriptors and Butterworth filters. By using the Butterworth Low pass Filters (BLF) and Butterworth High pass Filters (BHF) at varied scales. While applying the Butterworth Low pass Filter (BLF) at varied parameters, the internal region of the image is more concentrated which results in the smoothed image. Similarly while applying the Butterworth High pass filter (BHF) at varied parameters, the external region of the image is more concentrated which results in the sharpened image. The proposed algorithm is capable of eliminating the variation in size, rotation and translation of the object. The evaluation outcomes show that filtering done with BHF outperforms the BLF and shows better classification results.

References

- Michael Reed Teague, "Image Analysis via the General theory of Moments", 2 / 4
Firm Object Classification using Butterworth Filters and Multiscale Fourier Descriptors


**Index Terms**

Computer Science

Data Mining

**Keywords**

Shape Classifications  Butterworth High Pass Filters  Butterworth Low Pass Filters

Fourier Descriptors

Euclidean Distance