

應用小波技術於動態影像即時追蹤系統

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摘要

Based on a PC platform, an image tracking system is established by applying the image treatment method. The image is converted to the frequency subbands via the wavelet transform. The sequence of subimages with low frequency is used for image differencing. Also, the image treatment techniques of binary、erosion、dilation are utilized to find the image contour of the moving object. Then the image geometric center is found through the image edge. Applying the displacement of the image center to the step motor, the orientation of the controlled CCD camera is also changed. Thus the CCD camera is able to track the moving object immediately.

This experiment is divided to four processes. The first process is wavelet transform of the image such that the difficult problem in time domain can be solved. The second process is using image processing to find out the image edge or frame contour of the moving object and the object displacement. The third process is to integrate RS232、step motor and 8051 microprocessor chip, and CCD camera. The fourth process is to convert the object displacement to a control signal to adjust CCD camera rotating direction such that the real time tracking is attained.

關鍵字：Image processing , Image tracking , Wavelet transform