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MULTIRESOLUTION IMAGE RECOGNITION USING THE WAVELET TRANSFORM

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With the growth of information dissemination over digital communication networks, much research has been devoted to compressing digital image information for efficient transmission. The ability to adjust the desired resolution of an image as the available bandwidth on the network changes allows the user to control the flow of data according to the resources available. In this thesis we integrate multiresolution image compression methods with image recognition. Features of grayscale and binary images of text characters and aircraft line drawings are described using wavelet transform coefficients, wavelet transform subband energy, and Fourier transform coefficients. Transmission of these features over a digital communication link is simulated, and multiresolution recognition performance in the presence of channel noise is presented.

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