Data compression of scanned halftone images

A new method for coding scanned halftone images is proposed. It is information-lossy, but still preserving the image quality. Compression rates of 16-35 have been achieved for a typical test image scanned on a high resolution scanner. The bi-level halftone images are filtered, in phase with the halftone grid, and converted to a gray level representation. A new digital description of (halftone) grids has been developed for this purpose. The gray level values are coded according to a scheme based on states derived from a segmentation of gray values. To enable real-time processing of high resolution scanner output, the coding has been parallelized and implemented on a transputer system. For comparison, the test image was coded using existing (lossless) methods giving compression rates of 2-7. The best of these, a combination of predictive and binary arithmetic coding was modified and optimized achieving a compression rate of 9.

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