Abstracts from Other Journals

NTSC-Compatible Approaches to HDTV, Raymond Melwig, *European Broadcasting Union Review*, p. 248, December 1988.

While much of the world's attention is focused on two very prominent groups working on the development of high-definition television systems — the Japanese interests supporting the NHK 1125/60 proposal and the Eureka consortium adopting a MAC-compatible approach — this article examines some of the research being done in the United States on solutions offering HDTV picture quality coupled with compatibility with the existing 525-line NTSC standard. Although many of the ideas presented here are not directly transferable to the 50-Hz European context, and less still to the worldwide arena where single production and transmission standards remain the objective, the article may assist in understanding the background to the North American approach to HDTV.

The Design of Systems That Display Moving Images Based on Spatiotemporal Vision Data, W. E. Glenn and K. G. Glenn, *Journal of Imaging Technology*, p. 64, April 1989.

Television systems that display moving images can be designed to have a temporal response as a function of spatial frequency that matches the performances of the visual system. These designs can improve the performance of cameras, signal processing, signal transmission, computer graphic image generation, and image displays. The design analysis, based on psychophysical measurements in luminance and color, must include both conditions of fixation and tracking moving objects in the image by the viewer. Bandwidth reduced systems can be designed using this analysis which produce good perceived sharpness of moving objects with minimum image artifacts.

Real-Time Multidimensional Data Compression of Full Motion Video, N. J. Fedele, A. A. Acampora, and R. M. Bunting, *Journal of Imaging Technology*, p. 69, April 1989.

There are a number of applications that necessitate the transmission of real-time images over a narrow bandwidth channel. These applications must utilize effective data compression algorithms in order to achieve their goals. Scientists have struggled to make quality video images over narrow channels utilizing a number of techniques. Many approaches tend to dissect images, exploiting both the temporal and spatial aspects of input sequences, and then to encode the transformed sections in a convenient and efficient approach. The Pyramid Algorithm performs spatial spectral decomposition so that high frequency information can be separated from its lower frequency components. This spatial pyramid transform is integrated into a system which utilizes both spatial and temporal correlation of real-time video sequences; the result is a robust system configuration that meets the required compression. The best acceptable image, given a specific data rate, is achieved by adaptively selecting either a spatial or a temporal algorithm on a pixel by pixel basis. Aspects of moving sequences can be classified so as to choose the best algorithm to minimize visible disturbances for that particular class.

Books, Booklets, Brochures

The Master Guide to Film and Video Technical Books contains more than 150 listings of publications on cinematography, videography, preproduction, post-production, editing, writing, directing, acting, lighting, sound, special effects, and other crafts in the professional motion-picture and video industries. The 40-page illustrated and annotated catalog is available free of charge from Birns & Sawyer, Inc., 1026 N. Highland Ave., Hollywood, CA 90038.

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Other New Books

BKSTS Dictionary of Image Technology, second edition, edited by Bernard Happé, 1988, Focal Press, 80 Montvale Ave., Stoneham, MA 02180; ISBN 0-240-51276-6. Softcover, $18.00.

Digital Video in the PC Environment, Arch C. Luther, 1989, Intertext Publications/McGraw-Hill Book Co., P.O. Box 400, Hightstown, NJ 08520; ISBN 0-07-039177-7. Softcover, $27.95.

Electronics Engineers' Handbook, third edition, edited by Donald G. Fink and Donald Christiansen, 1989, McGraw-Hill Book Co., P.O. Box 400, Hightstown, NJ 08520; ISBN 0-07-020982-0. Hardcover, $89.50.