Real-Time Video Compression: Techniques and Algorithms

By Borko Furht

Springer. Paperback. Book Condition: New. Paperback. 164 pages. Dimensions: 9.0in. x 6.0in. x 0.4in.Real-Time Video Compression: Techniques and Algorithms introduces the XYZ video compression technique, which operates in three dimensions, eliminating the overhead of motion estimation. First, video compression standards, MPEG and H. 261H. 263, are described. They both use asymmetric compression algorithms, based on motion estimation. Their encoders are much more complex than decoders. The XYZ technique uses a symmetric algorithm, based on the Three-Dimensional Discrete Cosine Transform (3D-DCT). 3D-DCT was originally suggested for compression about twenty years ago; however, at that time the computational complexity of the algorithm was too high, it required large buffer memory, and was not as effective as motion estimation. We have resurrected the 3D-DCT-based video compression algorithm by developing several enhancements to the original algorithm. These enhancements make the algorithm feasible for real-time video compression in applications such as video-on-demand, interactive multimedia, and videoconferencing. The demonstrated results, presented in this book, suggest that the XYZ video compression technique is not only a fast algorithm, but also provides superior compression ratios and high quality of the video compared to existing standard techniques, such as MPEG and H. 261H. 263. The elegance of the XYZ...

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