SEQUENTIAL AND PARALLEL DESIGN APPROACH FOR VARIOUS PHASES OF VIDEO ENCODER AND DECODER

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Abstract

Video compression is an evolving technology because of rapid development and progress of multi-media industry. We tried sequential and parallel approach for various phases of video encoder and decoder. As a first step, the basic blocks of the encoder, namely, DCT, quantization, entropy encoding and also the basic block of the decoder, namely entropy decoder, dequantization and inverse DCT are successfully implemented. The original video clip is divided into frames and each frame is processed with basic blocks of encoder and the generated compressed file is again processed with basic blocks of decoding to generate the original video clip. During the implementation of the various phases of the encoder and decoder, optimized algorithms were used. Taking advantage of spatial, temporal, and statistical redundancies in the video data we realized the need for parallelism, for the efficient implementation of the video encoder and decoder hence some observations are discussed for sequential and parallel approach using OpenMP for some module.