LOSSLESS VIDEO COMPRESSION USING A SPATIO-TEMPORAL OPTIMAL PREDICTOR (WedAmPO4)

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Abstract:
Lossless video compression is a novel research area, but it is gaining widespread importance. As an example, in digital cinema the post-production chain requires all the information captured by digital cameras, and any data loss is not tolerated. On the other hand, the camera sensors size is expected to grow up to 4k x 2k pixels at 10 bit per pixel per component, and cameras output frame-rate up to 150 fps. This enormous amount of data asks for efficient lossless compression techniques. In this paper we propose a novel compression algorithm based on an optimal predictor which exploits the temporal correlation. This solution provides an improvement of the compression ratio, but the resulting algorithm is computationally demanding. An alternative method reducing the overall complexity is presented.