Abstract:
In rate–distortion optimized video coding, such as H.264, a macroblock uses either Inter or Intra prediction as its compensation method, which exploits temporal or spatial correlation alternatively for compression. In this paper, analysis and experimental results show that Inter and Intra prediction can be combined to generate a more accurate prediction especially for high definition video. A weighted combination method, denoted as CII_16x16, is proposed by combining Inter_16x16 with Intra_16x16_Horizontal. The weighted coefficient of the combined mode is further optimized. The implementation method is also discussed to provide a H.264 compatible scheme with minimal complexity increase both in the encoder and decoder. Experimental results show that by applying the combined mode to the H.264 rate–distortion optimized encoding flow, an average rate reduction of 1.8% can be achieved for high definition video coding.