

Abstract

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Effect of inter-camera angles on the performance of an H.264/AVC based multi-view video codec

This paper investigates the effect of inter-camera angles on the performance of an H.264/AVC based multi-view video codec. To achieve this, the H.264/AVC software has been modified to support multi-view video coding using its multiframe reference property. Results were generated using a wide baseline convergent multi-view video data set: Breakdancers. To generate a set of three synchronized multi-view videos from the same scene with different inter-camera angles, all possible three camera combinations are generated and classified according to their inter-camera angles. The resulting set of multi-view videos are coded using H.264/AVC based multi-view and simulcast video codecs at different bitrates. Results demonstrate that the multi-view video codec gives superior coding performance up to 1.2dB compared to that of simulcast coding scheme at low intercamera angles and it deteriorates as the inter camera angles increase. Finally, a range of inter-camera angles for best use of either multi-view simulcast coding is determined.