A Parallel Implementation of JPEG2000 Encoder on Multi-GPU System

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***Abstract*—There has been an increase in the demand for a high-quality video codec that supports 4K (3,840 x 2,160) or more. JPEG2000 is an important technique for data compression, which has been successfully used in digital cinema and medical application. To process the high workload of JPEG2000 coding for large-scale video data, hybrid CPU/GPU platform is used to obtain high computing power. In this paper, we develop and implementation of the JPEG2000 compression standard in hybrid CPU/GPU platforms. Specifically, we develop multi-GPU implementations of the JPEG2000 encode to obtain high computing power and balance the load between cores and GPUs in the hybrid architecture. In out experiments with multi-GPU, we couple the JPEG2000 codec optimized for multicores and multi-GPUs and achieve high performance of the JPEG2000 compression.**

***Keyword*— JPEG2000, Parallel System, Hybrid Platform, GPGPU, Digital Cinema**

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