

TEXTURE COMPRESSION IN MEMORY AND PERFORMANCE-CONSTRAINED EMBEDDED SYSTEMS

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ABSTRACT

More embedded systems gain increasing multimedia capabilities, including computer graphics. Although this is mainly due to their increasing computational capability, optimizations of algorithms and data structures are important as well, since these systems have to fulfill a variety of constraints and cannot be geared solely towards performance. In this paper, the two most popular texture compression methods (DXT1 and PVRTC) are compared in both image quality and decoding performance aspects. For this, both have been ported to the ePUMA platform which is used as an example of energy consumption optimized embedded systems. Furthermore, a new DXT1 encoder has been developed which reaches higher image quality than existing encoders.