

**A Preliminary Study On the Vectorization of Multimedia
Applications for Multimedia Extensions**

Gang Ren, Peng Wu and David Padua

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Abstract

In 1994, the first multimedia extension, MAX-1, was introduced to general-purpose processors by HP. Almost ten years have passed, the present means of accessing the computing power of multimedia extensions are still limited to mostly assembly programming and the use of system libraries and intrinsic functions. Because of the similarity between multimedia extensions and vector processors, it is believed that traditional vectorization can be used to compile multimedia extensions. Can traditional vectorization effectively vectorize for multimedia extensions? If not, what additional techniques are needed? This paper tries to answer these two questions. Based on a code study of the Berkeley Multimedia Workload, we identify several new challenges arise in vectorizing for multimedia extensions, and provide some solutions to these challenges.