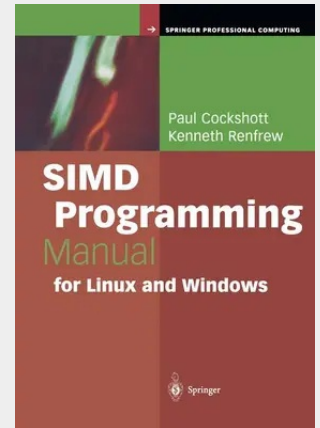


SIMD Programming Manual for Linux and Windows

A number of widely used contemporary processors have instruction-set extensions for improved performance in multi-media applications. The aim is to allow operations to proceed on multiple pixels each clock cycle. Such instruction-sets have been incorporated both in specialist DSPchips such as the Texas C62xx (Texas Instruments, 1998) and in general purpose CPU chips like the Intel IA32 (Intel, 2000) or the AMD K6 (Advanced Micro Devices, 1999). These instruction-set extensions are typically based on the Single Instruction-stream Multiple Data-stream (SIMD) model in which a single instruction causes the same mathematical operation to be carried out on several operands, or pairs of operands, at the same time. The level of parallelism supported ranges from two floating point operations, at a time on the AMD K6 architecture to 16 byte operations at a time on the Intel P4 architecture. Whereas processor architectures are moving towards greater levels of parallelism, the most widely used programming languages such as C, Java and Delphi are structured around a model of computation in which operations take place on a single value at a time. This was appropriate when processors worked this way, but has become an impediment to programmers seeking to make use of the performance offered by multi-media instruction-sets. The introduction of SIMD instruction sets (Peleg et al.

All modern PCs provide SIMD processing but there are no practical programming books telling you how to use it. Use of these techniques can allow programs to run 8 to 10 times faster than conventional programs on the same computer. The book enables high-level language programmers to make effective use of a technology that at present is known to and utilised only by a handful of developers. They could write graphics programs that were much faster as a result. This will be of interest to practitioners of games programming, image processing, medical image analysis, video processing etc.



155,14 €

144,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781849969208

Medium: Buch

ISBN: 978-1-84996-920-8

Verlag: Springer

Erscheinungstermin: 22.10.2010

Sprache(n): Englisch

Auflage: 1. Auflage. Softcover version of original hardcover Auflage 2004

Serie: Springer Professional Computing

Produktform: Kartoniert

Gewicht: 713 g

Seiten: 352

Format (B x H): 178 x 254 mm

