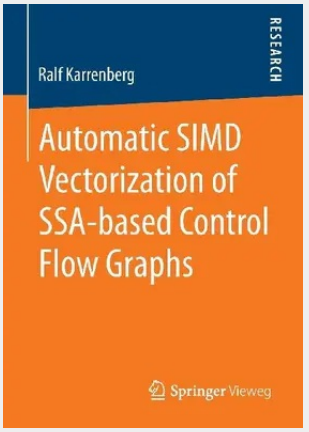
Karrenberg

Automatic SIMD Vectorization of SSA-based Control Flow Graphs

Ralf Karrenberg presents Whole-Function Vectorization (WFV), an approach that allows a compiler to automatically create code that exploits data-parallelism using SIMD instructions. Data-parallel applications such as particle simulations, stock option price estimation or video decoding require the same computations to be performed on huge amounts of data. Without WFV, one processor core executes a single instance of a data-parallel function. WFV transforms the function to execute multiple instances at once using SIMD instructions. The author describes an advanced WFV algorithm that includes a variety of analyses and code generation techniques. He shows that this approach improves the performance of the generated code in a variety of use cases.

Ralf Karrenberg presents Whole-Function Vectorization (WFV), an approach that allows a compiler to automatically create code that exploits data-parallelism using SIMD instructions. Data-parallel applications such as particle simulations, stock option price estimation or video decoding require the same computations to be performed on huge amounts of data. Without WFV, one processor core executes a single instance of a data-parallel function. WFV transforms the function to execute multiple instances at once using SIMD instructions. The author describes an advanced WFV algorithm that includes a variety of analyses and code generation techniques. He shows that this approach improves the performance of the generated code in a variety of use cases.



53,49 €
49,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783658101121
Medium: Buch
ISBN: 978-3-658-10112-1
Verlag: Springer
Erscheinungstermin: 29.06.2015
Sprache(n): Englisch
Auflage: 2015
Produktform: Kartoniert
Gewicht: 2703 g
Seiten: 187
Format (B x H): 148 x 210 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)