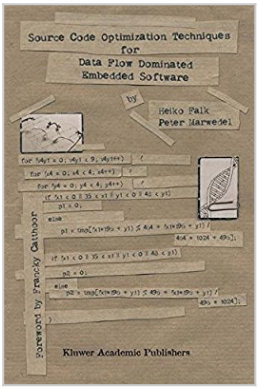

Source Code Optimization Techniques for Data Flow Dominated Embedded Software

By Heiko Falk, Peter Marwedel

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel

This book focuses on source-to-source code transformations that remove addressing-related overhead present in most multimedia or signal processing application programs. This approach is complementary to existing compiler technology. What is particularly attractive about the transformation flow pre sented here is that its behavior is nearly independent of the target processor platform and the underlying compiler. Hence, the different source code trans formations developed here lead to impressive performance improvements on most existing processor architecture styles, ranging from RISCs like ARM7 or MIPS over Superscalars like Intel-Pentium, PowerPC, DEC-Alpha, Sun and HP, to VLIW DSPs like TI C6x and Philips TriMedia. The source code did not have to be modified between processors to obtain these results. Apart from the performance improvements, the estimated energy is also significantly reduced for a given application run. These results were not obtained for academic codes but for realistic and rep resentative applications, all selected from the multimedia domain. That shows the industrial relevance and importance of this research. At the same time, the scientific novelty and quality of the contributions have lead to several excellent papers that have been published in internationally renowned conferences like e. g. DATE. This book is hence of interest for academic researchers, both because of the overall description of the methodology and related work context and for the detailed descriptions of the compilation techniques and algorithms.

Source Code Optimization Techniques for Data Flow Dominated Embedded Software

By Heiko Falk, Peter Marwedel

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel

This book focuses on source-to-source code transformations that remove addressing-related overhead present in most multimedia or signal processing application programs. This approach is complementary to existing compiler technology. What is particularly attractive about the transformation flow pre sented here is that its behavior is nearly independent of the target processor platform and the underlying compiler. Hence, the different source code trans formations developed here lead to impressive performance improvements on most existing processor architecture styles, ranging from RISCs like ARM7 or MIPS over Superscalars like Intel-Pentium, PowerPC, DEC-Alpha, Sun and HP, to VLIW DSPs like TI C6x and Philips TriMedia. The source code did not have to be modified between processors to obtain these results. Apart from the performance improvements, the estimated energy is also significantly reduced for a given application run. These results were not obtained for academic codes but for realistic and rep resentative applications, all selected from the multimedia domain. That shows the industrial relevance and importance of this research. At the same time, the scientific novelty and quality of the contributions have lead to several excellent papers that have been published in internationally renowned conferences like e. g. DATE. This book is hence of interest for academic researchers, both because of the overall description of the methodology and related work context and for the detailed descriptions of the compilation techniques and algorithms.

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel Bibliography

- Published on: 2013-03-19
- Released on: 2013-03-19
- Format: Kindle eBook

Editorial Review

Users Review

From reader reviews:

Nathan Wilson:

The book with title Source Code Optimization Techniques for Data Flow Dominated Embedded Software includes a lot of information that you can learn it. You can get a lot of benefit after read this book. This kind of book exist new knowledge the information that exist in this guide represented the condition of the world right now. That is important to yo7u to understand how the improvement of the world. This book will bring you with new era of the internationalization. You can read the e-book in your smart phone, so you can read that anywhere you want.

Wesley Jerkins:

Beside this particular Source Code Optimization Techniques for Data Flow Dominated Embedded Software in your phone, it may give you a way to get nearer to the new knowledge or information. The information and the knowledge you are going to got here is fresh from the oven so don't be worry if you feel like an aged people live in narrow commune. It is good thing to have Source Code Optimization Techniques for Data Flow Dominated Embedded Software because this book offers for you readable information. Do you sometimes have book but you rarely get what it's about. Oh come on, that would not happen if you have this within your hand. The Enjoyable agreement here cannot be questionable, just like treasuring beautiful island. Use you still want to miss the idea? Find this book and read it from today!

Adeline Bonds:

Is it a person who having spare time and then spend it whole day simply by watching television programs or just lying on the bed? Do you need something new? This Source Code Optimization Techniques for Data Flow Dominated Embedded Software can be the answer, oh how comes? A book you know. You are and so out of date, spending your free time by reading in this brand-new era is common not a geek activity. So what these publications have than the others?

Merle Poteet:

E-book is one of source of knowledge. We can add our expertise from it. Not only for students but in addition native or citizen need book to know the upgrade information of year in order to year. As we know those guides have many advantages. Beside many of us add our knowledge, also can bring us to around the world. By book Source Code Optimization Techniques for Data Flow Dominated Embedded Software we can consider more advantage. Don't you to definitely be creative people? To be creative person must prefer

to read a book. Just choose the best book that appropriate with your aim. Don't end up being doubt to change your life by this book Source Code Optimization Techniques for Data Flow Dominated Embedded Software. You can more desirable than now.

Read Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel for online ebook

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel books to read online.

Online Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel ebook PDF download

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel Doc

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel Mobipocket

Source Code Optimization Techniques for Data Flow Dominated Embedded Software By Heiko Falk, Peter Marwedel EPub