



CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming

By Gregory Ruetsch, Massimiliano Fatica

[Download now](#)

[Read Online](#) 

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica

CUDA Fortran for Scientists and Engineers shows how high-performance application developers can leverage the power of GPUs using Fortran, the familiar language of scientific computing and supercomputer performance benchmarking. The authors presume no prior parallel computing experience, and cover the basics along with best practices for efficient GPU computing using CUDA Fortran.

To help you add CUDA Fortran to existing Fortran codes, the book explains how to understand the target GPU architecture, identify computationally intensive parts of the code, and modify the code to manage the data and parallelism and optimize performance. All of this is done in Fortran, without having to rewrite in another language. Each concept is illustrated with actual examples so you can immediately evaluate the performance of your code in comparison.

- Leverage the power of GPU computing with PGI's CUDA Fortran compiler
- Gain insights from members of the CUDA Fortran language development team
- Includes multi-GPU programming in CUDA Fortran, covering both peer-to-peer and message passing interface (MPI) approaches
- Includes full source code for all the examples and several case studies
- Download source code and slides from the book's companion website

 [Download CUDA Fortran for Scientists and Engineers: Best Pr ...pdf](#)

 [Read Online CUDA Fortran for Scientists and Engineers: Best ...pdf](#)

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming

By *Gregory Ruetsch, Massimiliano Fatica*

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming
By Gregory Ruetsch, Massimiliano Fatica

CUDA Fortran for Scientists and Engineers shows how high-performance application developers can leverage the power of GPUs using Fortran, the familiar language of scientific computing and supercomputer performance benchmarking. The authors presume no prior parallel computing experience, and cover the basics along with best practices for efficient GPU computing using CUDA Fortran.

To help you add CUDA Fortran to existing Fortran codes, the book explains how to understand the target GPU architecture, identify computationally intensive parts of the code, and modify the code to manage the data and parallelism and optimize performance. All of this is done in Fortran, without having to rewrite in another language. Each concept is illustrated with actual examples so you can immediately evaluate the performance of your code in comparison.

- Leverage the power of GPU computing with PGI's CUDA Fortran compiler
- Gain insights from members of the CUDA Fortran language development team
- Includes multi-GPU programming in CUDA Fortran, covering both peer-to-peer and message passing interface (MPI) approaches
- Includes full source code for all the examples and several case studies
- Download source code and slides from the book's companion website

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming
By *Gregory Ruetsch, Massimiliano Fatica* Bibliography

- Sales Rank: #508270 in Books
- Published on: 2013-10-01
- Released on: 2013-09-17
- Original language: English
- Number of items: 1
- Dimensions: 9.24" h x .77" w x 7.49" l, 1.55 pounds
- Binding: Paperback
- 338 pages

 [Download CUDA Fortran for Scientists and Engineers: Best Pr ...pdf](#)

 [Read Online CUDA Fortran for Scientists and Engineers: Best ...pdf](#)

Download and Read Free Online CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica

Editorial Review

Review

"This book is written for the Fortran programmer who wants to do real work on GPUs, not just stunts or demonstrations. The book has many examples, and includes introductory material on GPU programming as well as advanced topics such as data optimization, instruction optimization and multiple GPU programming. Placing the performance measurement chapter before performance optimization is key, since measurement drives the tuning and optimization process. All Fortran programmers interested in GPU programming should read this book."--Michael Wolfe, PGI Compiler Engineer

From the Back Cover

CUDA Fortran for Scientists and Engineers shows how high-performance application developers can leverage the power of GPUs using Fortran, the familiar language of scientific computing and supercomputer performance benchmarking. The authors presume no prior parallel computing experience, and cover the basics along with best practices for efficient GPU computing using CUDA Fortran. In order to add CUDA Fortran to existing Fortran codes, they explain how to understand the target GPU architecture, identify computationally-intensive parts of the code, and modify the code to manage the data and parallelism and optimize performance – all in Fortran, without having to rewrite in another language. Each concept is illustrated with actual examples so you can immediately evaluate the performance of your code in comparison.

About the Author

Greg Ruetsch is a Senior Applied Engineer at NVIDIA, where he works on CUDA Fortran and performance optimization of HPC codes. He holds a Bachelor's degree in mechanical and aerospace engineering from Rutgers University and a Ph.D. in applied mathematics from Brown University. Prior to joining NVIDIA he has held research positions at Stanford University's Center for Turbulence Research and Sun Microsystems Laboratories.

Massimiliano Fatica is the manager of the Tesla HPC Group at NVIDIA where he works in the area of GPU computing (high-performance computing and clusters). He holds a laurea in Aeronautical Engineering and a Phd in Theoretical and Applied Mechanics from the University of Rome "La Sapienza". Prior to joining NVIDIA, he was a research staff member at Stanford University where he worked at the Center for Turbulence Research and Center for Integrated Turbulent Simulations on applications for the Stanford Streaming Supercomputer.

Users Review

From reader reviews:

Timothy Bennington:

Have you spare time to get a day? What do you do when you have a lot more or little spare time? Sure, you can choose the suitable activity for spend your time. Any person spent their particular spare time to take a go

walking, shopping, or went to the Mall. How about open or even read a book titled CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming? Maybe it is to be best activity for you. You already know beside you can spend your time with the favorite's book, you can better than before. Do you agree with its opinion or you have some other opinion?

Carman Robertson:

Book is to be different for each and every grade. Book for children right up until adult are different content. We all know that that book is very important normally. The book CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming had been making you to know about other understanding and of course you can take more information. It is extremely advantages for you. The publication CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming is not only giving you considerably more new information but also to get your friend when you truly feel bored. You can spend your own spend time to read your book. Try to make relationship with the book CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming. You never really feel lose out for everything in the event you read some books.

Alice Wilkerson:

Why? Because this CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming is an unordinary book that the inside of the publication waiting for you to snap this but latter it will jolt you with the secret that inside. Reading this book alongside it was fantastic author who also write the book in such awesome way makes the content inside of easier to understand, entertaining method but still convey the meaning entirely. So , it is good for you because of not hesitating having this any longer or you going to regret it. This amazing book will give you a lot of advantages than the other book have got such as help improving your ability and your critical thinking means. So , still want to delay having that book? If I ended up you I will go to the guide store hurriedly.

John Martin:

Playing with family within a park, coming to see the sea world or hanging out with friends is thing that usually you may have done when you have spare time, after that why you don't try matter that really opposite from that. 1 activity that make you not experience tired but still relaxing, trilling like on roller coaster you have been ride on and with addition details. Even you love CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming, you may enjoy both. It is good combination right, you still want to miss it? What kind of hang-out type is it? Oh come on its mind hangout men. What? Still don't get it, oh come on its known as reading friends.

Download and Read Online CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran

Programming By Gregory Ruetsch, Massimiliano Fatica
#7OEB3M4G8AT

Read CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica for online ebook

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica 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 CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica books to read online.

Online CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica ebook PDF download

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica Doc

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica MobiPocket

CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica EPub

7OEB3M4G8AT: CUDA Fortran for Scientists and Engineers: Best Practices for Efficient CUDA Fortran Programming By Gregory Ruetsch, Massimiliano Fatica