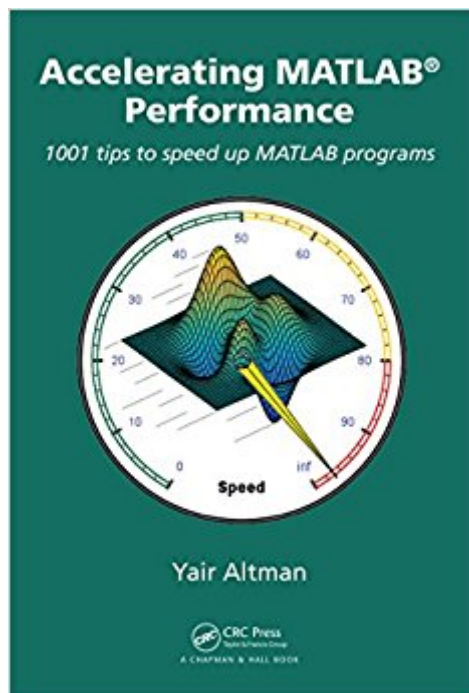




Ebook Directory
the best source of ebook

The book was found

Accelerating MATLAB Performance: 1001 Tips To Speed Up MATLAB Programs



Synopsis

The MATLAB® programming environment is often perceived as a platform suitable for prototyping and modeling but not for "serious" applications. One of the main complaints is that MATLAB is just too slow. Accelerating MATLAB Performance aims to correct this perception by describing multiple ways to greatly improve MATLAB program speed. Packed with thousands of helpful tips, it leaves no stone unturned, discussing every aspect of MATLAB. Ideal for novices and professionals alike, the book describes MATLAB performance in a scale and depth never before published. It takes a comprehensive approach to MATLAB performance, illustrating numerous ways to attain the desired speedup. The book covers MATLAB, CPU, and memory profiling and discusses various tradeoffs in performance tuning. It describes both the application of standard industry techniques in MATLAB, as well as methods that are specific to MATLAB such as using different data types or built-in functions. The book covers MATLAB vectorization, parallelization (implicit and explicit), optimization, memory management, chunking, and caching. It explains MATLAB's memory model and details how it can be leveraged. It describes the use of GPU, MEX, FPGA, and other forms of compiled code, as well as techniques for speeding up deployed applications. It details specific tips for MATLAB GUI, graphics, and I/O. It also reviews a wide variety of utilities, libraries, and toolboxes that can help to improve performance. Sufficient information is provided to allow readers to immediately apply the suggestions to their own MATLAB programs. Extensive references are also included to allow those who wish to expand the treatment of a particular topic to do so easily. Supported by an active website, and numerous code examples, the book will help readers rapidly attain significant reductions in development costs and program run times.

Book Information

File Size: 49366 KB

Print Length: 785 pages

Publisher: Chapman and Hall/CRC; 1 edition (December 11, 2014)

Publication Date: December 11, 2014

Sold by: Amazon Digital Services LLC

Language: English

ASIN: B00QFFY820

Text-to-Speech: Not enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Not Enabled

Best Sellers Rank: #454,852 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #23

in Kindle Store > Kindle eBooks > Nonfiction > Science > Mathematics > Number Systems
#101 in Books > Science & Math > Mathematics > Number Systems #107 in Kindle Store
> Kindle eBooks > Computers & Technology > Computer Science > Computer Engineering

Customer Reviews

In the first hour of reading it this book paid for itself -> Chapter 8 on the use of MEX to incorporate Fortran routines into Matlab. While I use Matlab daily I (embarrassingly) had never investigated the possibility of accelerating performance using MEX. I thought (incorrectly) that the Matlab compiler, which I do not have, would be required on my machine to create MEX functions. Maybe the material in Chapter 8 is old hat for most potential readers, but for me it was eye-opening. However, even if the use of MEX is familiar, I'll bet that any serious Matlab user will find a similarly valuable idea somewhere in this information-packed book. In contrast to the author's earlier book on Undocumented Matlab, I think that the information here is more likely to remain stable in ongoing releases. I would add a caution that the book is not written for, nor will it be useful for, the newcomer to Matlab or the casual user. Check the author's blog to see the level at which the book is written.

This book contains a universe of real-life, valuable insights from one of (if not) the top MATLAB programmers in the world. If you want to improve your coding skills, this is the book that will take you to the next level.

Helpful, but if you want to fully leverage all cores of your machine and not just optimize for a single core (or however many cores you can make use of with parallel toolbox), you should consider using mex combined with OpenMP or some other form of multiple threading. It is true you can optimize Matlab to a much larger degree than most people realize, but you will still probably find mex and multithreading to be faster.

This is a very good book. Clear rationale, good examples, useful, nice division of topics.

Matlab has become more and more popular over the years (currently TIOBE ranking 20) in engineering and science, it gives its user more powerful tools with its versatility and readiness than

traditional FORTRAN or C. This book is one of my favorites on Matlab, only following matlab's official documents. My reasons are: (1) This book contains huge amount of performance related solutions in real life projects (The author is a software consultant), which differs from MOST other books, that reiterate matlab's manual in their own words. (2) Gives insight of matlab's inner workings, helps users to identify problems otherwise don't have any clue (e.g. 10.1.2 Use Simple or No Plot Markers). (3) A lot of code snippets compiled by author to help readers understand, more importantly to be used in their own projects. This one for example (I'd never thought of that):

```
funcList = {@fun1,@fun2,@fun3}; % list of function handles
dataList = ; % and their parameters
for idx = 1 : length(funcList)
    funcList{idx}(dataList{idx}); % this is run in parallel
end
```

(4) Huge amount of resources listed in the appendix that do not only cover matlab usage but also other pertinent software engineering prospects/solutions (e.g. 3. Standard Performance-Tuning Techniques, and 8.5 using external libraries). (5) Many other prospects that I would otherwise ignored, you can find out yourself. My suggestion is: This book is a must read, or you should at least check out the contents of the book, see if you are interested in those topics. And also, this book is for moderate to advanced matlab users, matlab newbies should read matlab's official manual first, it's very well documented.

Over the years Matlab has become, from a scientific scripting language and interpreter, to a powerful scientific programming language and platform. Being that Matlab is still primarily an interpreter based platform, users wish for their applications to perform well as compared to other scientific programming solutions in the market (which are abundant). This book serves as an excellent reference for the implementation of efficient, high-performance applications using Matlab. I have not seen any other book which focuses so thoroughly on this important subject. From the use of the built-in Matlab profiler, through the detailed discussion on tradeoffs of different matlab programming paradigms through the detailed discussion on vectorization and parallelisation, this book is one of a kind and should be on the desk of anyone writing performance critical applications with Matlab.

[Download to continue reading...](#)

Accelerating MATLAB Performance: 1001 tips to speed up MATLAB programs
Speed Training for Combat, Boxing, Martial Arts, and MMA: How to Maximize Your Hand Speed, Foot Speed, Punching Speed, Kicking Speed, Wrestling Speed, and Fighting Speed
Speed Reading: Triple Your Reading Speed in Less than 24 Hours: The Comprehensive Guide to Speed Reading and Skyrocketing Your Productivity
Speed of Thought = Speed of Play: 25 Training Sessions That Increase Speed of Play In Soccer
Speed Reading: The Comprehensive Guide To Speed Reading

Accelerate Your Reading Speed By 300% In Less Than 24 Hours 1001 Inventions and
Awesome Facts from Muslim Civilization: Official Children's Companion to the 1001 Inventions
Exhibition (National Geographic Kids) 1001 Whiskies You Must Taste Before You Die (1001
(Universe)) 1001 Beers You Must Taste Before You Die (1001 (Universe)) Speed Cleaning To A
Healthier Life. Speed Cleaning Techniques And Tips: How To Properly and quickly Tidy a Unclean
House In Minutes instead Of Hours The Lost Art of High Performance Driving: How to Get the Most
Out of Your Modern Performance Car (Speed Secrets) Signals and Systems using MATLAB,
Second Edition (Signals and Systems Using MATLAB w/ Online Testing) Image Processing with
MATLAB: Applications in Medicine and Biology (MATLAB Examples) Fast Cars, Cool Rides: The
Accelerating World of Youth and Their Cars Race Against the Machine: How the Digital Revolution
is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the
Economy Move Your Bus: An Extraordinary New Approach to Accelerating Success in Work and
Life The Road to Recognition: The A-to-Z Guide to Personal Branding for Accelerating Your
Professional Success in The Age of Digital Media Higher Self Now!: Accelerating Your Spiritual
Evolution The Extravagant Universe: Exploding Stars, Dark Energy, and the Accelerating Cosmos
(Princeton Science Library) How to Climb Hills Like a Pro: Tips on How to Improve Speed and
Efficiency for Triathletes and Cyclists (Iron Training Tips) More Advanced Secret
Multiplication/Arithmetic Tips You Need to Know!: Advanced Speed Math Tips, Fast, Rapid, Quick,
Mental Vedic Math, for Kids, & Adults; Made Easy, and Simple

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)