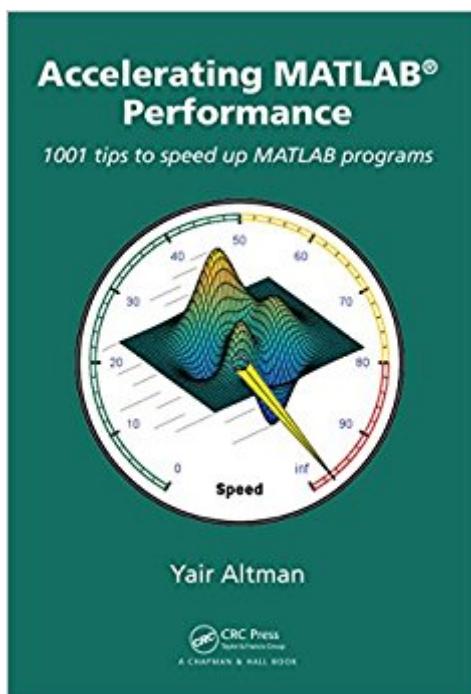The book was found

# Accelerating MATLAB Performance: 1001 Tips To Speed Up MATLAB Programs

## Synopsis

The MATLABÃ Â® 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 MATLABÃ¢â ¬â„¢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

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## 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 offical 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 handlesdataList = ; % and their parametersparfor idx = 1 : length(funList)funcList(dataList); % this is run in parallelend(4) Huge amount of resources listed in the appendix that do not only cover matlab usage but also other pertinent software engineering prespects/solutions(e.g. 3. Standard Performance-Tuning Techniques, and 8.5 using external libaries).(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.

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