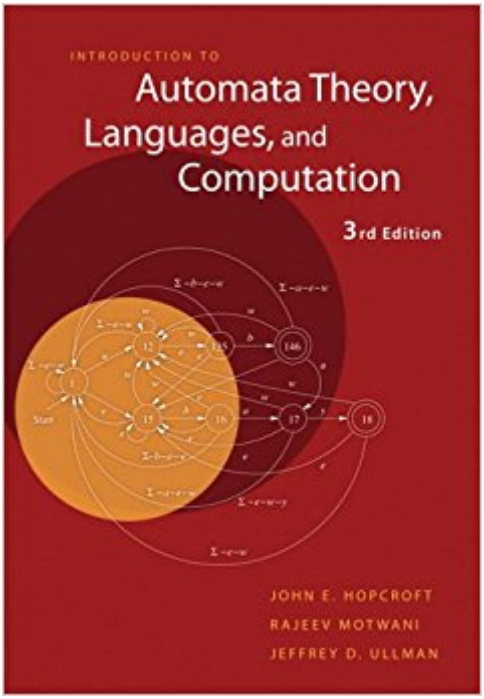
Introduction To Automata Theory, Languages, And Computation (3rd Edition)



Synopsis

This classic book on formal languages, automata theory, and computational complexity has been updated to present theoretical concepts in a concise and straightforward manner with the increase of hands-on, practical applications. This new edition comes with Gradiance, an online assessment tool developed for computer science. Gradiance is the most advanced online assessment tool developed for the computer science discipline. With its innovative underlying technology, Gradiance turns basic homework assignments and programming labs into an interactive learning experience for students. By using a series of root questions and hints, it not only tests a student's capability, but actually simulates a one-on-one teacher-student tutorial that allows for the student to more easily learn the material. Through the programming labs, instructors are capable of testing, tracking, and honing their students' skills, both in terms of syntax and semantics, with an unprecedented level of assessment never before offered. For more information about Gradiance, please visit www.aw.com/gradiance.

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Customer Reviews

This book is fantastic; I'd read that the subsequent editions are much less rigorous than the first, so I bought the first edition. It is shameful that the authors felt the need to lower the bar for subsequent editions; that's likely due to the sniveling reviewers. It's proof based and the authors don't waste their words. If you need "motivated" to study these three subjects, you're in the wrong field and the book's not for you. By that I mean the following: if you're a computer scientist (, aspiring to be one,)

or a"programmer" and(a) have already written a review about the book being "too hard"(b) require (detailed) explanations or examples telling you how what's taught will help you land a Java jobor(c) think mathematics or proofs aren't necessary with respect to programming or computer science, it's not for you.Is the book always an easy read? No, not for me.Can it be fruitfully read? Yes. I have no "formal" education and this is the first book I've actively read about the topics it treats. Chapters on regular expressions (, properties of regular sets), and finite automata have been superb. I'm only on chapter three and have already bought a second copy of it so that I can have one on hand at work.If you enjoy reading The Art of Computer Programming or other books as detailed as that one, you'll also enjoy this book. If you've read or do go read) portions of The Art of Computer Programming, don't feel like you've gained anything from it and thought its approach esoteric / too hard, this book's not for you.If you enjoy proof, formality and studying hard topics directly applicable to the "real world", you'll love this book. Lexical analysis, formal languages, parsing, compilation, etc. all explicitly involve theorems and concepts contained in this book.

Too much abstractions, very little practical examples. The theory goes on and on forever. If you got a good professor, he/she should try to give out as many examples as possible. The homework is good but should provide more instructions at the beginning. Overall, a good book with some flaws.Automata theory should not be that hard.

this is the india printed edition make sure its what you need for class it is different than the us printed edition, i.e. it wont have the same problems in it.

I do not know if the problem is in me, in the book, or in the entire theory section when it comes to computer science. But what I know is this book is not helping easing it at all. It is very confusing and keep referring to things in the next sections when explaining stuff, then you reach it after half a chapter and you need to remember what was that example they were explaining earlier. I am looking for an easier book, and I will update this if I find something.

My first exposure to Automata Theory backs to 1992, as a senior undergrad textbook for that course, which was mandatory and a prerequisite to the Compilers Course. (No student could take them together). Although I got the highest grade among over 80 students, but I was not getting enough comprehension from the class, as it should be. I admit it was due to the complexity and sophistication of that text, since this was the first course that 100% dedicated to computational

theory; taking into account it is BS in Computer/COMPUTATIONAL Science.In my MS work, the required text was By Sipser, but the instructor was giving material that was from Hopcroft/Ullman 1979 text. It was the definitive resource, period.I purchased the 2nd Ed, 2000, Hopcroft/Ullman/Mitwani; it was simpler than the 1st Ed. and easy going. My focus, and all Professors and researchers whom I know who work in a related-area, have this exact edition as a reference when needed!Chapter Contents and Material ExhibitsThe chapters are relatively not big in text but are very-rich in contents, that sometimes, if this is your first read/exposure to Automata theory, then perhaps you may need to read each section more than one time. If you're reading the text in deep, and in chapter 4+, you would really have a full enjoyment of how the authors are going with their exploring the ideas, with motivation. This is not my first text that I read by Ullman, Hopecroft, and Aho, especially, their older texts; their writings are just "amazing."ExercisesTry to solve the exercises but not at once. Perhaps the exercises can be divided into 4 categories1. Simple ones2. moderate (average), that mayhap need to scratch your brain3. difficult (beyond average), but not challenging, they are just doable.4. challenging --> I didn't solve all of this category. They are few.An Advice: some of the exercises in early chapters might be easier to do once you read the later chapters. This is due in part that the way you are making progress in the material, and another, some depend on and only "ideas" that are explored in later chapters.ErrataI've searched the Internet looking for a (maintainable) Errata list, but there's no one. The text has some typos, and otherwise very minor that you could easily spot. I'll mention some:One of the, perhaps, typos, is in on of the examples related to the conversion between NFAs to DFAs. Another one also in an example to the PDAs, but don't remember exactly.The Bottom LineIf you are going to have some future work in Automata and Computational theory, you may grab the 3rd Ed. and/or 2nd Ed. to star with, but for sure you should have the 1st Ed. at your disk; it's a "PRIMER."

For my Master Degree Studies on Computer Science, this book has been very helpful for an Automata Theory Course. Maybe there are a couple of chapters that need more understanding than others, but overall if you are interested on this field, this book is probably a good source of information in order to plan my thesis in a near future.Most of my classmates purchased the First Edition Used and according to them the notes posted on some of those copies were nice.Overall this book is a must have for every developer out there that wants to become a researcher in Math with Computer Science!!!

This is the definitive book on Automata Theory as applied to Computational Complexity and Algorithms. Working through the chapter end problems is a must. They have diluted the later editions by removing some material that is of theoretic interest which can now only be found in old journal papers. Both the editions together make for a more complete set (even though a large part of the material is duplicated).

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