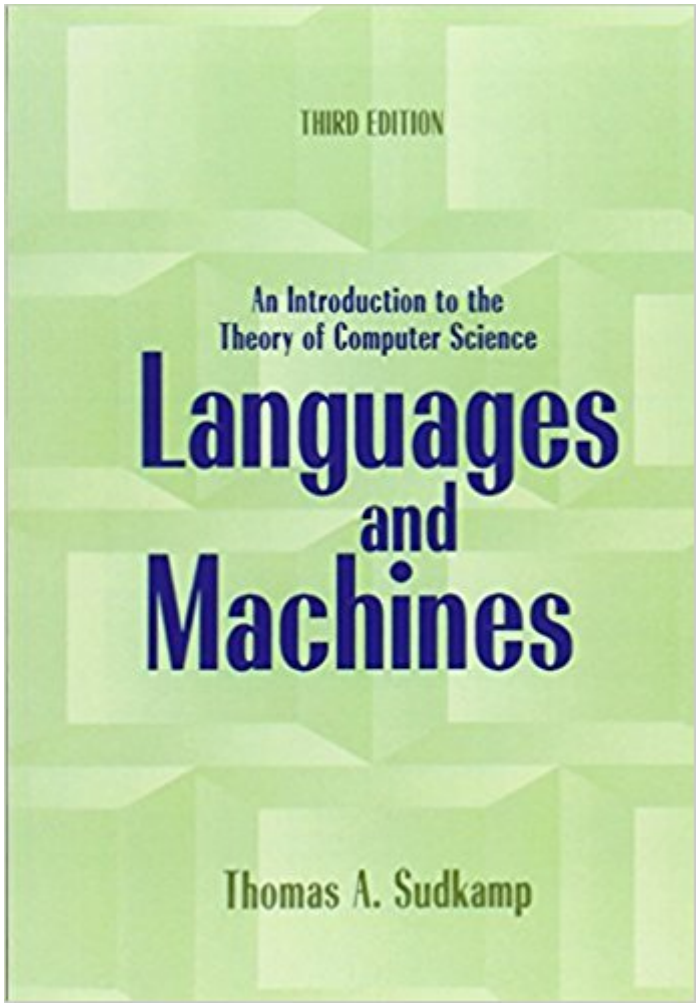
Languages And Machines: An Introduction To The Theory Of Computer Science (3rd Edition)



Synopsis

The third edition of Languages and Machines: An Introduction to the Theory of Computer Science provides readers with a mathematically sound presentation of the theory of computer science.Ã Â The theoretical concepts and associated mathematics are made accessible by a "learn as you go" approach that develops an intuitive understanding of the concepts through numerous examples and illustrations.Ã Â

Book Information

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Customer Reviews

This is a tough book. The book is a great resource to utilize, but there are a distinct lack of examples. You'll absolutely need to supplement this book with something else--educational videos online are a great resource.I used this book in a Theory class, and it was really difficult. Going from DFAs to NFAs to PDAs were pretty simple, but the jump to Turing Machines was incredibly difficult... I had trouble learning it from this book and had to find other places.If my teacher did not assign problems from the book, I would not have not have bought it. I don't think it impacted how I learned the subject in any way, so save your money if it's an optional buy.

Good

Speaking solely of the quality of the physical book, it's worth nothing close to what I paid. The first one I got had dents in the sides of the pages and the front cover was too long (not cut to length).

The replacement was only slightly less damaged, and the front cover was just as poorly cut, but the pages curved out to meet it as well. If you can’t cut paper well for $130, what are you doing selling books?

THANK YOU

I rent this book, but the book is used one and the surface is old too.

Even though I received the book within the expected delivery date, it was pretty late. The book came in in an "OK" condition, with most parts of the book in perfect condition, but quite many pages from the beginning were coming up.

A number of reviewers have mentioned that there are no solutions available at the back of the book. This is true. But there are solutions for about 1/3 of the exercises available from the publisher. If you are a prof, it might be an idea to obtain these and pass them on to your students; that’s what I’m doing. If you are a student, talk to your prof about it, and if you are studying for comps, ask your supervisor. Here is the author’s website for the book, which contains information on how to obtain the solutions: [...]Now that said, I just finished choosing between about 6 books in the area. None of them are perfect. I ended up selecting this one, as it has good examples and clear definitions, and the coverage we need.One reviewer mentioned the emphasis on Turing Machines as a strong point. My point of view is that Turing machines are not a model that means much to students. If I teach students computability with TMs and then ask them if they can solve the halting problem for C (suitably idealized), they don’t see the connection. (Even though I’ve told them.) When it comes to complexity, the connection is even more tenuous. One of the weaknesses of this book is that it does not treat the RAM model or similar models that are more like the language and machines that students use (and hopefully program) every day. Personally, I’d like to see a book that has no TMs at all, or relegate them to an optional chapter. Anyway, this is a fault of the genre. There are only a few texts that don’t focus on TMs, even for complexity.

Abstract language theory is hard, but Languages and Machines does a very good job of explaining the subject step by step. The topics are covered extremely thoroughly and with just the right amount of rigor. As for those who claim it’s not exciting enough, you can’t get blood out of a stone. Only the most dedicated computer scientist and mathematicians will find this topic interesting. Even so, this

book does a superb job of tying theory to application (e.g., the machines one can use language theory to build) for even the most obscure concepts (like the Greibach Normal Form).That being said, there are a few problems. First, the author's claim that this is a book for undergrads is not credible (except perhaps at MIT or CalTech). Even my graduate students have to read sections multiple times to "get it". Second, the author needs to provide solutions to selected problems at the back of the textbook. Most theory books do this, but not this one. This is a major weakness, especially given the difficulty of the material. Lastly, Sudkamp's proofs are extremely dry and very difficult to follow. He should take a cue from Sipser's "Intro to the Theory of Computation" book (which I do not recommend as it is generally too abstract for most students) and introduce "proof ideas" to give the big picture for important proofs.