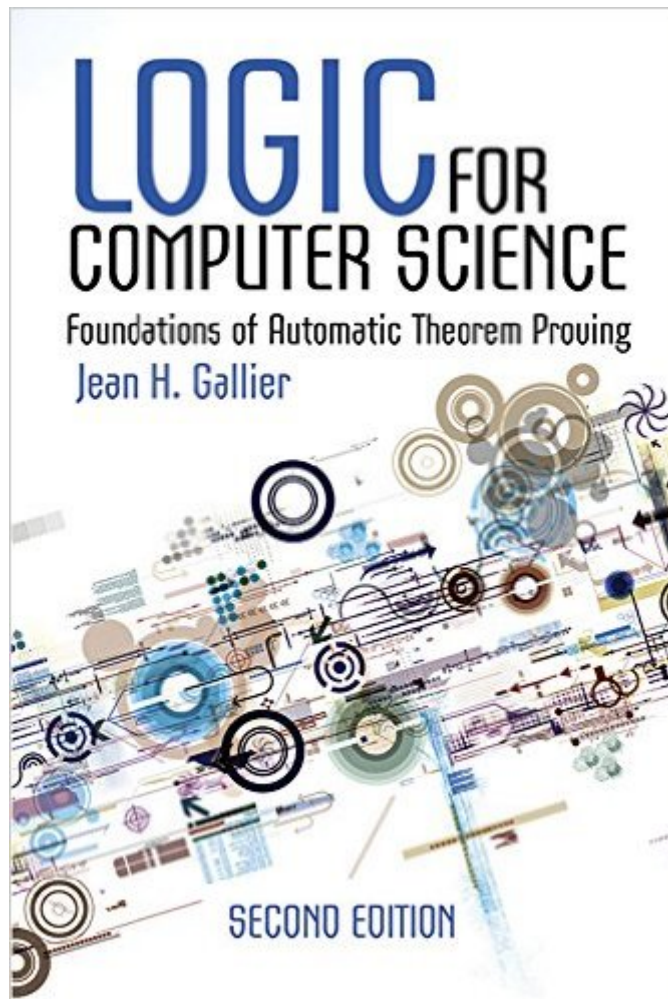


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Logic For Computer Science: Foundations Of Automatic Theorem Proving, Second Edition (Dover Books On Computer Science)



Synopsis

This advanced text for undergraduate and graduate students introduces mathematical logic with an emphasis on proof theory and procedures for algorithmic construction of formal proofs. The self-contained treatment is also useful for computer scientists and mathematically inclined readers interested in the formalization of proofs and basics of automatic theorem proving. Topics include propositional logic and its resolution, first-order logic, Gentzen's cut elimination theorem and applications, and Gentzen's sharpened Hauptsatz and Herbrand's theorem. Additional subjects include resolution in first-order logic; SLD-resolution, logic programming, and the foundations of PROLOG; and many-sorted first-order logic. Numerous problems appear throughout the book, and two Appendixes provide practical background information.

Book Information

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Customer Reviews

Although available as a free download on the author's page, this wonderful Dover edition is well worth buying for the price given the comprehensive algorithms which are easier to fathom in print IMHO. By comparison, classics like Melvin Fitting's book (although advertised as a new edition is actually a reprint--First-Order Logic and Automated Theorem Proving (Texts in Computer Science)) and others are now going for hundreds of dollars, whereas Gallier is just as complete while being more current than many of those titles, especially if you visit his page and download the other current research, which often includes code. Visit the wiki article also on automated theory proving for a list of free software agents (proof assistants) which only a few years ago required

supercomputing but now can be simmed and run on a gaming level pc (as long as the problem/proof you're playing with is polynomial rather than exponential time or NP hard!). Another important title in this area is Newborn (Automated Theorem Proving: Theory and Practice) because it includes code you can run on a PC with a C++ compiler, however it is very expensive and used versions often don't include the code. Gallier is highly recommended for the price/value and would undoubtedly cost \$200 if it were Springer rather than Dover, THANK YOU to the author for being sensitive to our budgets!

Jean Gallier's writing style is not only very clear but beautiful as well. Lot of thought and effort seems to have gone into the way the material is presented, making it easy and enjoyable for the beginner. While there may be some bias towards theorem proving, I recommend this book to any student of logic from a computer science point of view. I wish more math was explained in such style.

Very complete overview. Well worth the cost.

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