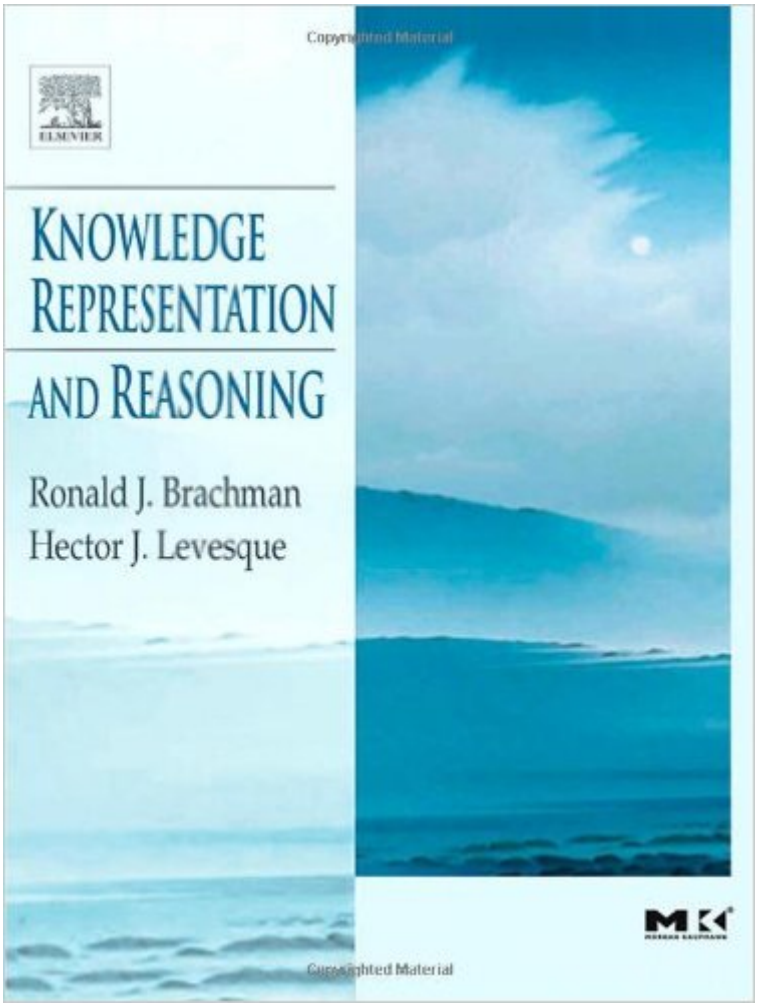
Knowledge Representation And Reasoning (The Morgan Kaufmann Series In Artificial Intelligence)



Synopsis

Knowledge representation is at the very core of a radical idea for understanding intelligence. Instead of trying to understand or build brains from the bottom up, its goal is to understand and build intelligent behavior from the top down, putting the focus on what an agent needs to know in order to behave intelligently, how this knowledge can be represented symbolically, and how automated reasoning procedures can make this knowledge available as needed. This landmark text takes the central concepts of knowledge representation developed over the last 50 years and illustrates them in a lucid and compelling way. Each of the various styles of representation is presented in a simple and intuitive form, and the basics of reasoning with that representation are explained in detail. This approach gives readers a solid foundation for understanding the more advanced work found in the research literature. The presentation is clear enough to be accessible to a broad audience, including researchers and practitioners in database management, information retrieval, and object-oriented systems as well as artificial intelligence. This book provides the foundation in knowledge representation and reasoning that every AI practitioner needs. *Authors are well-recognized experts in the field who have applied the techniques to real-world problems * Presents the core ideas of KR&R in a simple straight forward approach, independent of the quirks of research systems *Offers the first true synthesis of the field in over a decade

Book Information

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Customer Reviews

I love this book- It is a comprehensive introduction into knowledge representation, with enough detail to create your own knowledge representation programs.Are you a programmer who wonders what it really means when an object *IS* another object, in the form of inheritance found in object-oriented systems? Ever confused by the nuances of multiple inheritance? Ever wonder what XML or OOP or Relational Databases have to do with each other? Ever wonder if all those A.I. programmers in the 70s actually created anything useful? Ever wonder how type systems work? Ever wonder how to store complicated and vague data into a database?This book doesn't really have answers to these questions (nobody really does, in my opinion) but learning the information in this book is the first step you'll want to take to get closer to some answers...It basically covers 3 main topics: FOL (traditional logic like you probably learned in college) Frames (sort of the grandaddy of OOP) and Description Logics (a really powerful synthesis of object-thinking with strict logical fundamentals)This book has a bit of hairy mathematical notation in it, so if your not comfortable talking about things like "an object x that is an element in the domain" some of the chapters will require a bit of effort on your part. The authors are careful, however, to follow every difficult mathematical analysis with some concrete examples that ease the learning process- I often wish examples were more frequent in other theoretical tombs like this. Any computer programmer can process this text with a bit of moderate effort.I couldn't imagine being a professional programmer and not knowing the information in this book now that I have read it.

I own an old edition of the classic Russell and Norvig (R&N) which I read 10 years ago and did not feel like going through the huge new 2009 edition to learn about current topics, so I went looking for something a bit more recent with a focus on knowledge representation, and came up with this book. I have to say unfortunately that while not a bad book, it does not cover much more than the old R&N (side note on this: R&N is very comprehensive and covers the full AI spectrum. This book seems biased toward one particular school of AI. This may or may not be bad for you: if you're not interested in the additional material in R&N, such as neural nets, you're possibly better off with this book. I doubt there are many of you in this case though) and tends to be less pedagogical. It is also more uneven regarding the depth at which topics are covered, with a fairly strong bias toward the topics where the authors appear to be active researcher. Such a bias would be ok for a more advanced textbook, but we're talking about a fairly introductory text here, and it feels a bit unbalanced. I cannot therefore recommend it highly, but I am not highly critical either, as I still managed to learn a couple of things. Below are detailed notes, which I hope might be of interest to outline the stronger points. As a side note, this is a very theoretical book, with no direct

programming application or exercises. This did not bother may, but may not be clear from the other reviews.The introduction sets the scene well and provides a useful conceptual background. How the following chapters are articulated against the principles discussed in the introduction is not always straightforwardly clear though. In that sense, the authors may fall a bit short of their overall goal.

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