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Book Reviews

A Semantic Web Primer, Second Edition by Grigoris Antoniou and Frank van Harmelen, MIT Press, 288 pp., $42.00
doi:10.1017/S0269888909990117

The first edition of *A Semantic Web Primer* came out in 2004 and was reviewed in *Knowledge Engineering Review* volume 19, number 3. As one might expect from such a young technology, the semantic web has continued to develop over the intervening years, and this new edition has been revised and expanded to take account of those developments. Just as its predecessor, this edition of *A Semantic Web Primer* does a very competent job. The book provides a solid introduction to the use of XML for creating structured documents, the use of RDF and RDF Schema to describe Web resources, and the use of OWL for building ontologies, covering each of these three aspects in a separate chapter. Further chapters then cover mechanisms for reasoning with semantic web data, case studies of semantic web applications, and a discussion of the process of creating ontologies.

The bulk of this material is exactly that covered in the first edition, all of it material that has stood the test of time. In addition, there are several new topics, including the RDF query language SPARQL and the use of OWL DLP and SWRL for reasoning, which help to bring the new edition up to date. There is even a brand new final chapter which identifies a number of common objections to the semantic web (including those raised in my review of the first edition), along with reasons why the authors feel these objections are misguided, and a discussion of some of the ongoing issues and research challenges.

The fact that there is a second edition of *A Semantic Web Primer* suggests that the first edition was, as predicted in the review mentioned above, a very successful textbook. I see no reason why this edition should be any different. As I said of the first book, this would be my choice if I was to teach a course on the semantic web, and it would be the text that I would recommend to any graduate student who wanted to get to grips with semantic web technology.

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Essentials of Game Theory: A Concise, Multidisciplinary Introduction by Kevin Leyton-Brown and Yoav Shoham, Morgan & Claypool Publishers, 88 pp.
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In recent years, game theory has become a core topic in computer science, particularly in the area of artificial intelligence where ideas from game theory have been used to analyze problems in which interaction between autonomous entities plays an important role. The reason for the adoption of game theory in such situations is easy to understand. Game theory provides a rigorous mathematical way of describing such interactions, and allows for situations in which the entities can not only act independently, but also act in their own best interests (which closely fits many real-world situations). In addition, game theory provides a set of solution concepts, in essence different ways of describing possible outcomes of interactions, which can be used to reason about how those autonomous, self-interested entities will behave when they get to interact.

The aim of *Essentials of Game Theory* is to provide an introduction to the basic concepts. As the subtitle indicates, this is a concise introduction. Very concise. Each of the topics is introduced and described in a way that is perfectly understandable, but there are not many examples, and there is certainly no talking around the subject. In addition, the booklet (as the authors themselves describe it) really does limit itself to the essentials. As the introduction explains, the aim was to include the core ideas that anyone, in any discipline, will need to grasp if they are going to make use of techniques from game theory. The flipside of that, of course, is that there is much of game theory that anyone who wants to use it will not find in *Essentials of Game Theory*. Whatever your interest in game theory, you will need more than this slim volume to satisfy it.

Just in case those two points sound like criticism, let me say clearly that I think that *Essentials of Game Theory* is great. It is exactly what I want from an introduction to the subject, and I found it much easier to deal with than a number of well-known texts that cover more ground, and which take more space to deal with the topics that *Essentials of Game Theory* does cover. I used it as a source book the last time I had to teach any game theory—it covered everything I needed much better than the notes I already had—and I will use it when I have to teach game theory in the future. I also know what to recommend the next time a student asks for a good book on game theory, and I like the book enough that I won't be lending my copy. However, I won't guarantee that the student in question will like *Essentials of Game Theory*. I can see that some will find its brevity off-putting rather than attractive, and I can also imagine that there will be those who want something that is more angled towards their specific discipline, especially if that angling includes examples that make it clear exactly why each topic applies to the kind of problems that they are interested in. In addition, anyone who wants to get deeply into the area will need an additional textbook—something like the works by Binmore (1991) or Osborne and Rubinstein (1994)—that is a lot more comprehensive in its coverage. However, I still think that *Essentials of Game Theory* is a great addition to the literature, and in my opinion does a better job of introducing the material that it does cover than any other book that I know.

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References

Binmore, K. 1991. *Fun and Games: A Text on Game Theory*. D.C. Heath.
Osborne, M. J. and Rubinstein, A. 1994. *A Course in Game Theory*. MIT Press.