

Conditional Logic in Expert Systems

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One of the contributors to this book comments, 'I will leave it to the many enthusiasts of fuzziness to crystallize the imprecise and generally wasteful information combining techniques commonly employed by the common man as he commonly goes bumbling through life.' The author does not make clear who he means by the common man. However, he and most of his fellow contributors do make their own intentions abundantly clear throughout. This is a book about increasing the precision and efficiency of artificial intelligence. How do we handle ignorance? How do we distinguish between disbelief and lack of belief?

This edited volume is a collection of articles devoted to the investigation of various aspects of conditional logics, that is, the mathematical logics of implicative propositions in uncertain environments. The articles consider three main approaches to reasoning under uncertainty, namely Bayesian, Fuzzy sets and Belief Functions.

The book begins with a lengthy chapter which attempts to develop a sound algebraic basis for fuzzy set theory. The application of fuzzy reasoning is discussed later with particular attention to connectives, T-operators, implication and Modus Ponens. Further chapters consider the topics of measure-free conditioning, conditioning operators for non-monotonic reasoning and the combination of evidence with conditional objects. The main chapter on Belief Functions considers the practical problem of computer memory. Even moderately sized problems exhaust a computer's storage space when applying traditional Belief Function theory. This article presents both a fast algorithm and a means for more efficient storage. Finally, there is a chapter which considers random sets as a formalism for evidential reasoning.

The book is clearly aimed at AI academics and researchers. It would therefore be unfair to criticize it for its strong theoretical bias and minimal discussion of applications. Occasional comments to the effect that an author has further work to complete, underline how current the research is. The mix of writings produces an interesting overlap and divergence of ideas and opinions. Whether the editors are justified in including Expert Systems in their title is, I feel, contentious. This is a book primarily about conditional logic. Somebody who is looking to cement the logical foundations of an existing system or application will probably have to bumble for a little while yet.

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Operational Research '90

HUGH E. BRADLEY (Editor)

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This collection of selected papers from the 1990 IFORS conference in Athens, must be one of the few books whose cover information can be taken literally: 'an invaluable record of the state of OR worldwide', 'plenary papers', 'national contributions', a selection of 'outstanding papers that were refereed', 'a wide variety of applications of OR methods', and 'latest developments in theory'.

IFORS conferences come every three years. Too far apart to be silted up by the nfe-too material of the once-yearly and twice-yearly series in Europe and North America. But also too far apart to sustain threads of research and debate. So what appears is a collection of peaks rising out of a wide sea of activity. The main emphasis is perhaps on looking outward at real-world OR from academic bases, but there is a good salting of reports from within investigated organizations. Each IFORS conference, with its book of the conference, offers unique opportunities to become aware of currents of thought and activity away from your normal network of interactions – to be re-stimulated in your vision of the potential for OR.

National contributions, no more than three per country, are what each national society most wants to bring to the notice of people in other countries. They constitute about half the book. They come from all six continents, though 16 European countries claim the lion's share. This route seems to ensure relevance and consistently good quality. The UK is represented by Christer's ongoing