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Book reviews

Fuzzy logic for the management of uncertainty edited by Lotfi Zadeh and Janusz Kacprzyk, John Wiley & Sons, New York, 1992, pp 676, £47.50, ISBN 0-471-54799-9.

Fuzzy sets and fuzzy logic provide techniques for modelling vagueness and imprecision, and approximate reasoning, respectively. Zadeh's pioneering work of the 1960s and 70s has developed into a rich and fertile field of research with wide application. To be pedantic, whilst imprecision and vagueness *are* matters of uncertainty management, fuzzy logic is strictly a logic of graded properties and not of uncertainty. That is, a conclusion is true to a degree, rather than there being an expression of the likelihood of a conclusion being true. So the title is perhaps a little misleading.

Fuzzy Logic for the Management of Uncertainty is primarily a research text, with the majority of the papers concentrating on theoretical issues. There is a selection of papers describing more application oriented work, which give a good flavour for the state of the art in the application of fuzzy logic to knowledge-based systems. The applications are, however, slanted towards systems for diagnosis and prognosis. With the exception of a paper on a VLSI fuzzy chip, there is relatively little reference to fuzzy process controllers or imaging systems; both of which are in widespread use in commercial "white goods". The section on fuzzy logic for knowledge representation and elicitation also provides a number of papers which will be of interest to the application builder, as well as theoreticians.

With the exception of one or two survey papers, most of the papers in this volume would be quite at home in research journals. This does provide for a wide sweeping survey of the state-of-the-art, with contributions from many of the leading practitioners the world over. However, an introductory survey together with perhaps an additional commentary on each section by one or both of the editors would have added immensely to the accessibility and value of this book as a self contained volume. In addition, there is a level of typographical errors which would be intolerable in any self-respecting journal.

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Foundations of fuzzy systems by Rudolf Kruse, Jörg Gebhardt and Frank Klawonn, John Wiley & Sons, Chichester, 1994, pp 265, £29.95, ISBN 0-471-94243-X.

This is an English translation of an original German edition which appeared about a year ago. The translation was carried out by professional translators with the support of the publishers, and is of a very high standard. The German edition was extremely well received as soon as it appeared, so this English language edition (produced as a slightly higher quality hardback) is to be welcomed as making the book accessible to a much wider audience.

Fuzzy sets and fuzzy logic still remain somewhat controversial in the west. There are still some lingering doubts about the applicability of this work, and the poor quality of some of the earlier treatises on fuzzy set theory has left many still suspicious of the integrity of the underlying formalism. This book must help in countering this, as the authors' technical ability is without question, *and* their work has well established links with industry which has given them direct experience with the development of successful applications.