publishers are clearly hoping to encourage the baffled reader to buy Pawlak's monograph on the subject. In each one the problem is sketched out in enough detail, the relevant mass of data presented in a table, and the results of applying Pawlak's method of analysis described. It would be churlish to complain about details such as the occasional lack of discussion in some of the papers (so that my reaction tended to be "so what?" when I got to the end), when the papers are so nicely presented, but there is a slightly more serious problem. That can be summarized by the question "Who is the intended audience for these papers?" The lack of description of the method is likely to make the papers impenetrable for anyone new to rough sets, but anyone who knows a lot about them is unlikely to be very interested in descriptions of applications. The only people likely to be impressed by such work are people who have a problem that they can't solve and might be inclined to adopt rough sets when they see someone solve a similar problem using them, and such people, I feel, will be put off by the lack of explanation. Anyhow, this is not too much of a problem, and as a whole the section is fine.

The second section contains six papers that relate rough sets to other techniques. These are all very interesting and would make a good point of departure for anyone considering developing the formalism. The papers include a typically worthwhile contribution by Dubois and Prade arguing for an eclectic combination of rough and fuzzy sets, as well as an interesting contribution on rough sets and topology, and two comparisons of the rough set method with numerical techniques for data analysis. It is unsurprising to find that one of these uses the data from the highly selective vagotomy patients.

The final section of eight papers, entitled "Further developments" is more of a mish-mash of different things. There is a description of some software for automating the application of Pawlak's method (in fact, this software was used by a number of the authors of the application papers), and a paper which gives an algorithm that seems likely to make this software redundant since it promises much faster solution in many cases. There is a paper describing the application of rough methods to the pipelining of processes on a multiprocessor machine, and a paper extending the use of rough sets to unify knowledge representation and classification. And there is, of course, a paper analysing the highly selective vagotomy data again, this time with the aim of determining which attributes are important in obtaining the "decision rules".

So, overall, a good book but not a great book, but one that deserves more than it is likely to get, which is to be buried in libraries rather than to be bought by individuals. That this will happen is a great shame, in my opinion, but is only too likely given the price of the book. It is possible to photocopy it, at commercial rates, for around one third of its retail price. Now to me this just does not add up. The publishers incur no typesetting costs since all the papers were provided in camera-ready form, so all they have done is to photocopy it and wrap it in a hardcover. This minimal service doesn't seem worth nearly £60, and of course it isn't. Kluwer, in their wisdom, have decided that they only want to sell it to libraries and have priced it accordingly, thus putting it out of reach of people who are genuinely interested in the subject but don't have £88 to spend—yet another example of commercial considerations coming before scientific ones. I wonder what the authors, and particularly the editor who seems to have made a considerable effort to tie the book together, think of the publisher cynically limiting the audience of their work . . . .

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Text and context—document processing and storage by Susan Jones, Springer-Verlag, Berlin, 1992, pp 298, DM54, ISBN 0-387-19604-8.

This book was written to support an option course dealing with various aspects of document processing, and is intended to help readers see links between a collection of topics which, although currently fragmented, might in the future present many possibilities for integration. As one might imagine, this is quite a tall order to satisfy since the topics that fall under the general rubric of

document processing fall into a large number of different categories and not all of them support the notion of integration in the same way.

The book consists of 12 chapters, and for reviewing purposes, we can usefully divide the wide range of topics covered into three broad classes: text processing including hypertext (five chapters), storage media and applications (four chapters), and information retrieval (two chapters). In addition, an introductory overview chapter is provided as well as a subject index.

The text processing theme is introduced early to familiarize the reader with the idea of language as data and the notion of text representation. It also provides a focus for corpus-based studies such as concordances and the use of computers in lexicography, taking the Cobuild project as an example. The text processing theme is taken up again in the concluding chapters which deal with hypertext, document description and mark-up languages (e.g. SGML; ODA), desk-top publishing (Ventura) and formatting systems (LaTeX and troff), and finally, Postscript. Taken together, I found these parts of the book the most substantial and informative, although I missed a systematic discussion of editing: a mention of Emacs would not have been out of place, even if only for historical reasons.

The storage media and applications theme includes optical storage, CD ROM, worm disk and video disk, and the author has made some attempt to pair up each kind of hardware with associated applications. The treatment of applications is not particularly homogeneous, consisting sometimes of descriptions of rather specialized examples (e.g. CD-ROM and British Airways Technical Publication, a set of manuals for aircraft maintenance); sometimes of very general application domains (e.g. worm disk and document image processing, video disc and computer-based training).

The initial chapter on information retrieval serves to introduce some underlying concepts such as query languages, database design as well as extensions to the basic techniques to handle morphological variation, output ranking, and so on. The second chapter considers issues associated with the implementation of full text retrieval systems (such as Reuters Newsbank) using commercially available software (e.g. the ICL CAFS extension) and the use of relational models based on SQL). Finally, a number of well-known techniques for text compression, such as Huffman coding, are described.

All in all, the book is certainly informative, being packed with information and carefully selected sets of examples. It also includes references on a chapter-by-chapter basis. I also liked the fact that an attempt has been made to impose a certain level of uniformity on the structure of each chapter: for each ends with a chapter summary and a set of investigations intended for the curious student. Only the chapter devoted to optical storage, which is far shorter than all the others, does not conform to this pattern.

My main worry about the book concerns its intended readership, since I get the feeling that it has been written very much in the wake of a particular course rather than than being designed with a particular kind of reader in mind. The content is, for reasons presumably having to do with the nature of the course, pitched at that uneasy level that sits between that of a simple guide intended to attract and maintain the attention of the uninitiated, and that of an undergraduate text which must, amongst other things, attempt to instill some expertise in the subject matter. There is a danger that there is too much detail to please the first kind of reader but not enough focus to satisfy the second.

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Knowledge engineering toolkits edited by C. J. Price, Ellis Horwood, Chichester, UK, 1990, pp 261, £44.95, ISBN 0-13-517178-4.

The stated goal of this book is to provide a foundation for determining the suitability of an application for implementation with knowledge-based systems (KBS) technology, as well as serve as a guide to selecting an appropriate KBS toolkit for this task. This is certainly a worthwhile topic,