they present the holograph as a concrete example of how this might work. DD underscore the feasibility of their approach by pointing to specific research that has conceptually established a process of '*holistic similarity recognition*', that may be used to retrieve experience that is appropriate to a current situation. DD's proposal is intriguing, and certainly merits full consideration as an alternative to traditional feature-based knowledge representations.

Even if one is less interested in such 'technical' issues as knowledge representation, DD is wortwhile reading because of its thoughtful analysis of where society is headed with its embrace of computers in general, and AI in particular. DD point at the danger of succumbing to the temptation of considering the simplified AI models as 'real' pictures of human decision making. Much publicized successes of rule-based expert systems, for example, have given the suggestion that human expertise is properly captured as (large) sets of simple heuristic rules. Such emphasis on rules, they claim, may lead people to equate human expertise with sets of rules, thereby denying what may very well be the essence of human expertise. This indeed is a danger, and we certainly need books like DD to point this out.

In conclusion, despite its shortcomings DD is a must for people with an interest in Artificial Intelligence. AI does not have a proprietary claim to the truth, and DD are very correct in asking hard questions and in proposing alternative models. It is part of the scientific process, and will result in further progress in the area. It is too bad, however, that the authors so undermine their examination of AI's 'fallibility' by ignoring that may be, just may be, they are fallible as well.

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Intelligent Knowledge Based Systems: An Introduction

From the series: Aspects of Information Technology, Van Nostrand Reinhold, Workingham, 1986, xii + 159 pages

This is an easy-to-read, introductory text on computer knowledge based systems.

Far from rigorous and detailed considerations, the author tries first to explain what is an expert system and what it is not, how it is built and what are its common features. This is followed by an appreciation of the Prolog programming language. The next part of the book introduces the topic of knowledge representation and examines the process of developing an expert system. The following chapter considers the relationship of knowledge-based systems to processes of learning. A large part of the book (one third) is devoted to fundamentals of natural language processing by computer, semantics in language understanding and intelligent interfaces to computer systems.

Each of the 8 chapters is terminated by a summary itemizing the key points contained within, as well as problems and exercises for testing the knowledge acquired. For more ambitious readers, the book contains a comprehensive further reading list of texts with reference to particular chapters.

Of course, the depth of coverage was restricted in favour of providing a comprehensive introduction to each topic. Nevertheless, the text is neither trivial nor misleading as some introductory books tend to be. The informal treatment should make it reasonably accessible to a large readership.

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M.L. BRODIE and J. MYLOPOULOS (eds.)

On Knowledge Based Management Systems: Integrating Artificial Intelligence and Database Technologies

From the series: Topics in Information Systems, Springer, New York, 1986, xxi + 660 pages, DM98.00

This book is a set of communications on the scope of connections between DBMS and KBMS. Communications were realised by specialists of both sides, meeting in a closed workshop, the aim being to discuss their points of view on theoretical

aspects. Each communication was followed by discussion, the main remarks of which are given.

This book shows in the end that KBMS are still designed closely similar to DBMS. There are still efforts to be made in order to design KBMS that will not be integrations of AI and DBMS.

It brings several points of view on the same topics, showing that contradictions exist among KBMS people; this appears obviously during discussions. It was stated that throughout the workshop, emphasis would be given to those discussions rather than to the papers: unfortunately, those which occurred are drastically summarised for the reader.

Interests of the communications are quite variable. Some are very short and then do not bring any valuable or even relevant information on the topic they were supposed to present (papers 12, 18, 7,...). Sometimes this becomes very frustrating since they should have dealt with quite importance matters (paper 31).

Part I is a broad overview which gives a good start.

Part II is surprisingly poor on its subjects while the same type of comparisons between KBMS and DBMS are largely developed in other papers (see 16). In general, there is no real presentation or discussion about advantages and disadvantages of both; in the end it is difficult for the reader to get a clear view of what to use for his problem.

Part III is theory-oriented; specially communications 13, 14 and 15 present interesting properties and relate fundamental research efforts.

Part IV leads to drawing analogies and opens slightly a door towards applications.

Parts V, VI, VII are rather philosophical discussions on KBMS's future. The survey of 24 brings a good overview of the state of the art.

It would be difficult to write that papers are outside the scope of the title of the book. The main presented themes are theoretical ones, which lends this book interest among theoretical people rather than practical ones. In that way it shows the various trends developed among United States researchers.

It would be very difficult, quite impossible in fact, to use this book to design a KBMS to be used in an industrial environment. Conceptual models, development methods, design approaches are not at all presented.

As regards presentation of the book, it does not avoid the difficulties of congress reports: redundancies are numerous, no real guide lines,... It should be quite interesting, once the European workshop was held, to deliver a more structured book, presenting theories, design and utilisation from a synthetic point of view.

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Advances in Artificial Intelligence: Proceedings of the Sixth European Conference on Artificial Intelligence, ECAI-84, Pisa, Italy, September 5-7, 1984

North-Holland, Amsterdam, 1986, xi + 423 pages, Dfl.100.00

Artificial Intelligence is a growing scientific field which tries to merge in a unique knowledge many classical scientific areas like psychology, logic, mathematics, computer science, linguistics and engineering.

Some links with operations research can be found just considering that a common area is the decision process. For an operations researcher the decision process has a normative target and the identification of an optimal strategy is the basic feature of the used models. Artificial intelligence has the aim of representing and reproducing the most powerful decision machine, that is the human mind.

The book is the result of three days of discussion among many specialists in the different fields of artificial intelligence, and covers the main topics of this new science, that is expert systems, robotics, cognitive modelling and learning, natural language and knowledge representation.

The main feature of the papers accepted for publication in the proceedings of the Conference is the attempt to assemble in a unique language very different fields. The quality of the papers can be considered another common feature of the volume, mainly because the effort is to introduce the problem in general terms such that it is possible to follow the logic arguments with a general background.

Some comments must be made on some special