

the papers are application-orientated. One cannot fail to be impressed by the diversity of topics covered. This clearly reflects the wide applicability of artificial intelligence to manufacturing. Indeed, one of the most desirable features of the journal is that it provides a rare panoramic view of this subject which is otherwise quite difficult to obtain. On the whole, the publication is well balanced between papers offering solutions to particular problems and those addressing more general issues. There are also special issues that are devoted to particular topics such as neural networks in manufacturing, manufacturing and decision processes and intelligent heuristics for the design of manufacturing systems. It may be argued that a few of the papers lack a level of academic abstraction — they seem to be more like extracts from a textbook rather than academic papers seeking to expand the frontier of know-

ledge.

Nevertheless, they provide interesting and useful accounts (such as that of the design approach of fuzzy control processes), and the choice of topics that they cover appears to be in line with the editor's objective of seeking to bridge the theory-practice gap.

In this era of rapid technological changes, I am sure that those involved in the research, development and application of advanced manufacturing technologies, particularly those who are interested in the applications of artificial intelligence in manufacturing, will join me in congratulating the editors and publisher for producing a timely, good-quality journal that successfully bridges the gap. □

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## Net profit

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**International Journal of Neural Systems.** Editor-in-chief Benny Lautrup. *World Scientific*. 4/yr. \$190, developing countries \$65 (institutional); \$86 (personal)

IF the publication of John Hopfield's 1982 paper on neural networks (*Proceedings of the National Academy of Sciences U.S.A.* 79, 2254-2558) can be blamed for the resurgence of interest in this field, it is interesting to note that 1991 marks the last year of a decade of this revival. Have great things happened? Is there promise still ahead? These are the questions that will determine the life span of the journals that are steadily proliferating in this field. *International Journal of Neural Systems* must be among 15 or so similar projects, all of which are competing for the attention of about 8,000 neural-network researchers in the world. While publishers are quick at seizing the opportunities offered by this sort of bandwagon, the acid test is whether the quality of papers in the journal is sufficiently high for researchers to add it to their reading list.

On the strength of the first volume, I think that a reasonable quality has been achieved. The range is broad, covering mathematical, biological and engineering interests. Duplication with the content of other journals is low and editorial filtering (or just fortune?) has kept the quality of the papers high. An interesting aspect is the distinct European flavour of the papers, and this is not a bad thing. While there are contributions from California and Australia, the peak of the geographical distribution of contributions is somewhere in the middle of the

Alps, with the standard deviation ranging between Scandinavian countries and Israel. Without wishing to upset my colleagues in the United States, it is palpably true that 'European' in neural-net research implies a greater variety of ideas than can be found purely on the American continent. This may be because the United States is the land where, in 1969, Marvin Minsky and Seymour Papert ruled that "thou shall not work on neural networks". The post-1982 US researchers then found themselves picking up the trails of a truncated scientific culture where Europeans have had the benefit of the maturity that comes from unbroken experience. So they look for new pastures with greater confidence. There is evidence of this in this new journal.

Everyone has a list of important developments they would like to see in neural networks. Mine contains systems with many associative nets, hybrid systems that integrate conventional and neural computation, neural nets that understand language aided by images, and nets that are truly sensitive to complex temporal structures. Perhaps it would be unreasonable to expect that such material would be found in the first volume. Some is, and the key thing for the survival of a journal such as this is whether it can encourage and attract advanced contributions on new developments. It will be up to the 41 associate editors to be clear about their own wish lists, and for them to ensure that what is published is truly new and not merely the twist of a synapse in an ancient neural model. □

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## Binary bibles

John A. Campbell

**International Journal of Foundations of Computer Science.** Editors E. Engeler, T. Ito, D. J. Lee, R. Parikh and J. V. Tucker. *World Scientific*. 4/yr. \$195 (institutional); \$82 (personal, and institutional for developing countries).

**Mathematical Structures in Computer Science.** Editor G. Longo. *Cambridge University Press*. 3/yr. \$135, £75.

**Computational Mathematics and Modeling.** Editors W. A. Light and A. N. Tikhonov. *Plenum*. 4/yr. US and Canada \$295, elsewhere \$345.

**Journal of Visual Languages and Computing.** Editors S. K. Chang and S. Levialdi. *Academic*. 4/yr. US and Canada \$140, UK £72 (institutional); US and Canada \$60, UK £72 (personal).

COMPUTING is a popular field for new journals, many of which are responses to the increased amount of important work in established topics. Others recognize or attempt to define new topics. There are examples of both in the selection reviewed here.

Theoretical computer science and the foundations of computing are certainly undergoing an expansion of activity at present. Although some of it is due to displaced mathematicians looking for a larger and possibly richer audience, there is enough fire to justify the amount of smoke that is visible. *International Journal of Foundations of Computer Science* takes its share of the action by accepting papers in quite a broad theoretical spectrum, with emphasis so far on algorithms and their properties, programming-language semantics, and aspects of logic programming. It does not lack competitors, such as *Theoretical Computer Science*, *SIAM Journal of Computing*, *Journal of Algorithms* and *Acta Informatica*, and evidently supplements them rather than offering a distinctive new profile. For those who have the money, it is a useful supplement.

*Mathematical Structures in Computer Science* is more specialized. It relies on the correct assumption that progressively more mathematical territory (mainly algebraic, not the typical analytic kind of applied mathematics used in other sciences) is being colonized, or at least raided for items of value, by computer scientists. Some of its contents are uncontroversial, in the sense that they could have appeared in any of the above journals. The remaining papers are less obviously items that raiders from computer science will want to capture, but the journal disarmingly admits this in print