

sense of their underlying mechanism; of course we are told how to do them).

Does this matter, to other than a few theoreticians? Yes it does: we want causal analyses of our successes as well as of our failures; and they are harder to get. Lots of methods work. We are told, no doubt on good evidence, that SSADM works. But abstract data typing and structured programming work *because they reduce programmer choices* (i.e. scope for error). Logic flow-charting worked because it documented structures too complex to fit in a human head. And that is what justified its abandonment: we should not program in such structures at all. Mere 'working'—quality and productivity improvement—is not enough.

This book should go to a second edition, and many more. Chunky as it is, it might be allowed another 50 pages if Gilb and Graham could—please—explain their success.

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Fundamentals of Neural Networks. Prentice-Hall, 1994, £21.95, 461 pp. softbound, ISBN 0-13-042250-9

This book is targeted at the growing undergraduate 'Artificial Neural Net' text book market. It consists of seven chapters, the first of which provides a resume of current applications of the neural net technology. It also includes a gentle introduction to various popular neural net paradigms in terms of their current and historical significance. This chapter, like all others in this book, includes many examples and exercise problems which provide a detailed description of the calculations and are quite easy to follow. The mathematical level of the narrative, examples, and exercise problems is that of a second year science/engineering undergraduate.

The second chapter discusses the neural nets that can solve linearly separable pattern-classification problems. The paradigms discussed include the Hebb net, perceptron, Adaline and their variants. Each of these paradigms is explained in terms of architecture, training algorithm and appropriate application examples.

Pattern association paradigms is the topic of the third chapter where the Hopfield net, bidirectional associative memory, brain-state-in-a-box and their variants are presented.

Chapter 4 describes competition based neural nets—fixed-weight nets as well as the more interesting adaptive-weight variety. This later group includes the self-organization map, learning vector-quantizer and the counterpropagation net.

The fifth chapter is titled Adaptive Resonance Theory (ART). This chapter provides a very accessible treatment of a relatively complex subject. Along with a detailed description of ART1 and ART2, the computationally streamlined version of ART2, Instant ART2, is also

presented. Unfortunately, this book does not include any discussion on the more recent ART variant—ART3.

The sixth chapter covers the backpropagation (BP) trained multilayer perception. After describing the standard version of the BP algorithm, the author introduces many of its currently in-vogue flavours, and then goes on to discuss some important issues regarding training strategies.

The final chapter is a smorgasbord of some of the neural net paradigms, which in the author's opinion, did not deserve a full chapter of their own. These paradigms include Boltzmann machine, recurrent BP net and neocognitron. This chapter also includes a discussion about ontogenic paradigms such as cascade-correlation. Surprisingly though, this book does not include much information about the currently popular radial basis function network.

There are approximately 100 solved examples in this book. The character recognition problem appears in most chapters, and is quite useful in identifying the underlying differences/similarities between various paradigms. A variety of programming projects is suggested at the end of all but the first chapter. In addition, a glossary consisting of about 180 commonly used terms and a list of around 200 references is also included.

In summary, this book is very readable, requires a minimum of mathematical background, and covers most of the popular flavours of the neural net paradigm. It can provide a sound foundation for an undergraduate course on artificial neural nets. I feel, however, that the treatment of the subject is not formal enough for a good post-graduate course.

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Information Management Case Studies. Pitman Publishing, 1993, £19.99, 246 pp. softbound, ISBN 0-273-60388-4

This is a refreshing collection of case studies from a range of organisational contexts. It is targeted at senior Business or Accounting Information Systems students and at MBA programmes (as a supplementary text). The book is organized in two sections. The first section is intended to provide a review of the key issues in Information Management for the mid-1990s and the second section contains 18 case studies for use in exploring these issues.

The first section already seems a little dated: too much space is allocated to the development of a historical context, and whilst it provides a very readable discussion of issues and concepts that have become significant over the past five years, it does not move on to explore significantly the issues that will be critical over the next few years. However, the case studies that follow provide a very useful mechanism for underpinning the ideas