

not suitable for large part of this audience, and an informal presentation 'by examples' and general discussions. Such a compromise has been certainly necessary and the result is quite interesting and the examples are pleasant to read. Some scientists, however, might find the book too verbose in some parts, in particular the last chapter dedicated to the history and survey of ASM research, where all the previous applications of ASM techniques in applicative and industrial fields are listed. Some people, on the other hand, will be only interested in practical applications and will find some mathematical formalizations boring. In any case, this book represents an interesting experiment.

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ENID MUMFORD

*Redesigning Human Systems—InfoSCI 2003*. IRM Press (2003). ISBN 1-59140-118-6. £59.50/\$79.95. 304 pp. Hardbound.

Enid Mumford became a guru for many of us even before the concept of guru became part of our daily language. It is wonderful that she is still active in publishing since it is now 35 years ago when I read and reviewed my first book by Enid Mumford.: *Computers: Planning for People*, published in 1968.

At that time, her message broke totally new grounds with the human perspective of the development of 'EDP-systems'. For some, it was a saber-rattling eye-opener, for others her gospel fell on 'thorny ground'. But for those prepared to listen, she transplanted the socio-technical tradition of the Tavistock School to the IT area, and she rightfully became world-renowned and recognized through the world. She took the gospel of humanization and participation (democratization) and made it relevant, practical and easily applicable. Through her writings on action research in the IT field and the easy to apply tools, she became one of the most influential researchers in IS.

The philosophy of Mumford's latest book is that 'problem solving and the management of change will be facilitated by participation' (p. 248). To document this, the book has five parts: an introduction to socio-technical design based on the principles of participation of those who are going to use the systems; designing for manual workers; designing for office workers; designing for companies; and designing for the future.

This book represents the highlights of Mumford's normative work on participation brought up to date and put into the context of modern day challenges. As such, the book is for anybody 'concerned with the choice and implementation of organizational structures that mesh with the technology and create a viable socio-technical system' (p. 249).

However, is the book new to somebody familiar with the work of Enid Mumford? I would say no. Most of the cases are old, but that should not put you off. I feel that the book serves at least two purposes. First, it provides a historic

overview, which helps to bring our present day challenges into perspective. Second, it is an easy-to-read book, which over and over illustrates very aptly that history repeats itself. Maybe the accusation that IT creates routinized, demeaning and alienating jobs cannot, as many studies have shown, be sustained. But in the way that far too often we are designing (or acquiring) IT solutions without user participation. We forget or ignore that the technical costs are typically 20%, and the costs of organizational implementation are 80%.

Some of the recommendations can seem trivial. For instance, when Mumford writes on page 125: 'Good communications is essential and if it does not exist it will be replaced with rumors'. However, it is amazing how often this type of insight is neglected in spite of our experiences.

I have forgotten who said it, but one might define experience rather cynically as 'our ability to recognize our mistakes the second time we commit them'. It is so difficult for us to learn. And yet, (re-)reading the advice of Mumford, she presents the case in such a nice, easy to apply way that it is a surprise why so many mistakes of a socio-technical nature are committed.

For everybody familiar with the work of Enid Mumford, this book represents an excellent collection of highlights based on the thinking and experiences of user participation in IT, which will fit nicely at the row with other books by her. For those not familiar with her work, I can strongly recommend this overview.

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*Feature Extraction and Image Processing*. Newnes (2002). ISBN 0-7506-5078-8. £24.99/\$47.50. 362 pp. Softbound.

Image processing, primarily concerned with the transformation of images into images, is currently a hot topic for a great number of undergraduates and professionals. Feature extraction also is a very important field with growing applications in science and engineering. The main aim of feature extraction is to extract important features from image data, from which a description, interpretation or understanding of the scene can be provided by the machine. This book focuses on feature extraction, whilst also covering issues and techniques of image processing such as image acquisition, sampling theory and point operations.

There is a certain amount of mathematics in this book. Therefore, its target audience is probably third or fourth year students on BSc/BEng/MEng courses in electrical or electronic engineering, computer science, mathematics or physics. Each chapter of the book presents a particular package of information concerning feature extraction in image processing and computer vision. Each package is developed from its origins and later referenced to more recent material that will be really interesting for a wide range of practitioners and professionals in this field.

The book provides working implementations (in Mathcad or Matlab) of most of the major techniques it describes, and

applies them to process a selection of imagery. Although the focus of the book is more in analysing medical imagery or in biometrics (the science of recognizing people by behavioural or physiological characteristics, like face recognition), the techniques are general and can be migrated to other application domains.

Each chapter starts with an overview section and ends with a detailed bibliography ('further reading' and 'references' sections). This bibliography suggests further reading, such as the original sources of what was presented in the chapter, or publications on topics not covered by the text. Finally, a website (<http://www.ecs.soton.ac.uk/~msn/book/>) hosts the working Matlab and Mathcad files, which not only allows readers to see the techniques described in the book in use, but also lets them explore areas with which they are unfamiliar. The website also contains interactive demonstrations, list of errata or links to other material.

The book is organized as follows. Chapter 1 provides an overview of computer vision hardware, software and established material, with reference to the human vision system. The first chapter also provides a comprehensive bibliography of material on the subject, not only including textbooks, but also available software and other material (journals, etc.). The following chapter concerns the basics of signal processing theory for use in computer vision. It introduces the Fourier transform for looking at a signal in a new way (frequency domain), and working out the minimum size of a picture to conserve information, to analyse the content in terms of frequency and even helps to speed up some of the vision algorithms. This chapter also presents other transforms: discrete cosine, Hartley, wavelet.

The book then starts to look at basic image processing techniques (Chapter 3), where image points are mapped into a new value first by considering a single point in an original image, and then by considering groups of points. This is where the techniques are implemented as algorithms in Mathcad and Matlab to show precisely how the equations work. Chapter 4 concerns low-level feature extraction, including edge detection, which is the technique that describes the content of an image at the level of a whole image, rather than in distinct regions of it. The major techniques are presented in detail, together with descriptions of their implementation. Other image properties (measures of curvature and measures of movement) also are covered in this chapter. These edges, the curvature or the motion need to be grouped in some way in order to find shapes in an image. Chapter 5 is the first approach of the book to shape extraction, analysing the match of low-level information to a known template of a target shape. As this can be computationally very cumbersome, the book presents another technique that improves computational performance, whilst maintaining an optimal performance. This is the Hough transform, a very popular technique. The chapter on shape extraction by matching is followed by one on flexible shape analysis. This is a topic that has shown considerable progress lately, especially with the introduction of snakes (active contours). These seek to match a shape to an image by analysing local properties. Furthermore, the chapter explains how to describe

a shape by its symmetry and also how global constraints concerning the statistics of a shape's appearance can be used to guide final extraction (active shape models).

Chapter 7 considers techniques that can be used to describe the shape found in an image (object description). In particular, the two major approaches concern techniques that describe a shape's perimeter (shape boundary descriptors) and those that describe its area (region descriptors). The final chapter introduces texture analysis (texture describes patterns with no known analytical description), prior to some introductory material on pattern classification and texture segmentation. This chapter is a window on a much larger area, to which appropriate pointers are given. Finally, the appendices include material that is germane to the text, such as co-ordinate geometry and the method of least squares, aimed to be a short introduction. Other related material is referenced throughout the text, especially to on-line material. The appendices include a printout of one of the shortest of the Mathcad and Matlab worksheets.

In conclusion, the book is well organized and presented, and covers all major areas of feature extraction in image processing and computer vision. There is considerably more material in the subject than is presented in the book. For example, there is an enormous volume of material in 3D computer vision and in 2D signal processing which is only hinted at. However, the book is already 362 pages long and these could form another book.

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NIGEL PHILLIPS AND GEOFFREY ELLIOTT  
*Mobile Commerce and Wireless Computing Systems.*  
Pearson Education (2003). ISBN 0-201-75240-9. £32.99.  
552 pp. Softbound.

No doubt at all: wireless and mobile communication experienced tremendous growth rates and, thus, many companies have hopes of big profits in mobile commerce. Based on a sound motivation of M-commerce, the book guides the reader through the sometimes confusing world of mobile communications—from technology via networks and devices to applications. While the title of the book might imply that commerce and technology are balanced, the book clearly emphasizes wireless computing and even extends into security considerations. The book is never boring to read—many boxes, side-stories, activity items and historical comments liven up the technical contents. The authors mix plain technical content accompanied by simple diagrams with flashy pictures and interesting case studies. So, if you want an overview of mobile systems including a discussion of security and ethical issues accompanying mobile commerce systems, get the book.

However, if you want a technologically sound book stay away from it! The authors should really have asked someone working in the field before writing the book. Many definitions are simply wrong, so are acronyms and