

## Modelling of Computer and Communication Systems

**By I. Mitrani, University of Newcastle upon Tyne. Cambridge Computer Science Texts No 24. Cambridge, New York: Cambridge University Press, 1987. Price in Sterling: paperback 9.95; hardcover 27.50.**

This is a book of 192 pages filled with probability theory, stochastic processes, queueing models, scheduling strategies etc. The author wrote the book, because "the designers and users of complex systems obviously have a vested interest in knowing how those systems perform under different conditions. This is no less true of computers and communication networks than it is of motorway junctions, manufacturing facilities and nuclear power stations. In all cases, it is necessary to have a clear understanding of the factors that influence performance... Such understanding can be gained by experimentation. Alternatively, one can construct a mathematical model of the system and obtain the desired information by analysis". This is the approach adopted and pursued in the book, the author concludes.

The preface also points out that the book is intended for computer science and operations research undergraduates and postgraduates, and for practitioners in the field. Some mathematical background is assumed, including first year calculus.

A very interesting aspect of this book can be attributed to the statement that "the systems in which we are interested are subjected to demands of random character. The processes that take place in response to those demands are therefore also random". From this, the author extended the scope to queueing networks (open, closed, optimal multiprogramming and networks with multiple job types), and to packet-switching networks (broadcast, slotted and token ring).

This excellent work is completed by a bibliography and an index. All six chapters end with commented literature information. For engineers and scientists with interest in the theoretical background of system performance, this book is a very good recommendation.

## Computer Architectures for Robotics and Automation

**Edited by James H. Graham, University of Louisville, Kentucky. New York, London: Gordon and Breach Science Publishers, 1987. Price in US\$: 96.00.**

It is not only since CAM and CIM that robotics and automation became a very "hot" field. Specialized architectures for this field were discussed in workshops, symposia etc. for several times. One reason, among others, to create this book was obviously the well recognized fact that "it is necessary to incorporate many of the recent advances in the fields of image processing, control and machine intelligence into the robotic system in real time".

The book is a collaborative effort of several

active researchers who are attempting to address various aspects of the problem: to incorporate both parallelism and special purpose hardware in the design of advanced robotic systems. In all there are 8 articles written by 15 authors and organized in 4 sections: Introduction, Special architectures for control of robots and automation, Special architectures for sensing and vision, Other special architectures.

It is a pity that this interesting and rather expensive book offers only an index of merely 70 keywords.

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