reward for information leading to the arrest and conviction of anyone removing this sign. Overall, the book is an extremely well-written bridge between the world of literature, letters, and wit on the one hand, and the world of science, precision, and economy on the other hand.

Computer scientists and roboticists will be especially interested in the three chapters on the fine points of Lisp, a language used by much of the artificial intelligence community. They provide a neat introduction into recursion, non-numerical processing, why a Lisp interpreter can be written down in Lisp, and how Gödel invented Lisp! Indeed, these three chapters are a handy dialect-independent supplement to any Lisp textbook.

Page 58, Hofstadter, discussing viral sentences and self-replicating structures, writes, "Even more tantalizing is the title of Thompson's imaginary book, which Wheelis casually mentions toward the end of the novel: it is The Way Things Are — a striking contrast to the title of the real book in which it exists. What is the meaning of this elegant literary platitude?"

The reviewer points out that the physicist PW. Bridgman, who won the Nobel Prize in 1946, published a book on operationalism entitled The Way Things Are (Harvard University Press, 1959) a few years before committing suicide. Surely this would interest Wheelis, who is a psychiatrist and novelist.

In several of the postscripts (for example, on page 228), it is not always very clear whether the comments are from ideas by the author or from ideas by unnamed people commenting on the author's column in Scientific American. In any case, I highly recommend the book as a mind-expanding experiment for students and teachers of computer science.

**Interactive Microcomputer Graphics**

Chan S. Park (Addison-Wesley, Reading, Mass., 1985, 458 pp., $49.95)

Robert D. Haskins, Jet Propulsion Laboratory

The importance of computer graphics in science, engineering, and business applications cannot be overemphasized. This is demonstrated by the many graphic-oriented software packages currently on the market and by the clamoring of students for courses in graphics programming.

**Interactive Microcomputer Graphics** is targeted to undergraduates who have had one course in Basic and some background in mathematics (up to a level of linear algebra) and to professionals in the field with little knowledge of graphics programming.

The major drawback of the book is that it is specifically written for the ubiquitous IBM PC and PC-XT, so those with no access to an IBM would find little of value in the book.

Another, more serious problem is the use of an unstructured language to teach graphics programming. Although this is not, in a sense, the author's fault — he is just using what is available on the IBM PC — the book will be obsolete when structured Basic is available on the PC.

For those readers with a pressing need for information on graphics programming on the IBM PC, the book is valuable. The first part is a brief — but thorough — hardware description of the IBM. The next part, "Mathematical Elements for Computer Graphics," is the heart of the book. It has a well-written exposition of the mathematics needed to understand the rest of the book.

The major elements are two- and three-dimensional geometrical transformations and hidden-surface-removal algorithms. The author does a good job here in explaining the scan-line coherence algorithm and in explaining edge coherence.

The third part, "User Interface Design," combines the mathematics introduced in the second part with interactive program design to provide insight into writing a complete software package.

The last section, "Graphics Applications in Management Decision," introduces regression analysis with a modicum of mathematical treatment. The author develops an automated forecasting system based on Winters' method, which is commonly used in time-series analysis. The author also — with the graphics presented in the previous parts — presents an effective example of how to display the results of mathematical calculations.

An important part of any book on programming is the actual programs written in the book — and the author, via publisher Addison-Wesley, provides a disk with the programs for $49.95. Having the programs at hand is a nice way to learn the subject. The references and the exercises given at the end of every chapter are carefully chosen and thorough.

**WANG INSTITUTE OF GRADUATE STUDIES**

School of Information Technology

**Visiting Scholar in Software Engineering**

The School of Information Technology offers visiting appointments (1985/86) for scholars of demonstrated software engineering skill and accomplishment. The focus of the School is a curriculum in software engineering. A primary goal for the School is to bridge the gap between academic and industrial approaches to software engineering. The Institute offers excellent facilities for professional development, including modern computing systems, an excellent software engineering library, graduate assistants, and secretarial support. The student/faculty ratio is 6 to 1. The balance between teaching and research efforts is negotiable; however, it is expected the visitor will have a definite plan of activities for the year. Interested parties should submit a letter of application to the Chair of the Faculty, including a discussion of plans for the visit, required technical support, names of three references, and a resume. Compensation and benefits are appropriate to the position.

Richard E. Fairley
Chair of the Faculty
Wang Institute of Graduate Studies
Tyng Road
Tyngsboro, Massachusetts 01879
telephone@wanginst - CaNet
decvax/wanginst/fairley

**WANG INSTITUTE OF GRADUATE STUDIES**

School of Information Technology

**Software Engineering Faculty**

Wang Institute provides a unique educational environment that combines the best features of academy and industry. Faculty members teach one graduate course per semester, interact closely with small numbers of graduate students who have industrial experience, supervise pro-
MONMOUTH COLLEGE
WEST LONG BRANCH, NEW JERSEY
VACANCY ANNOUNCEMENT
Software Engineering Faculty/ Program Coordinator

Applications are invited for a tenure-track position available June or September 1986. Monmouth College is developing a new program at the master's level in Software Engineering. This program is jointly sponsored by the Computer Science and Electronic Engineering Departments and builds upon the strengths of the graduate programs in these two departments. The program is designed to integrate elements of computer science, software engineering, and computer communications into systematic methods for developing reliable and effective computer software systems. This program was developed jointly by Monmouth College faculty and representatives from several high technology industries such as AT&T, Perkin-Elmer, Fort Monmouth, and Bell Communications Research. The program is highly selective and enjoys the support of local high technology industries. A person with vision and imagination is sought to fill this initial appointment in software engineering. This person will be expected to provide the leadership requisite for the systematic refinement of the software engineering topics in the program as they relate to local high technology industries. Preference will be given to candidates who have exhibited curriculum development in software engineering or related areas.

Monmouth College is located in scenic and historic Monmouth County, one mile from the Atlantic Ocean, fifty miles south of New York City. Applicants should submit resume to: Dr. Harris Drucker, Chair, Electronic Engineering Department, Monmouth College, West Long Branch, New Jersey, 07764. Applications will be considered until the position is filled. Women and minorities are encouraged to apply. AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.

ROCHESTER INSTITUTE OF TECHNOLOGY
School of Computer Science and Technology

Tenure-track faculty position available in September for individual who has experience in the instruction of Software Engineering topics, both managerial and technical. Ph.D. or Master's (with professional experience) degree in appropriate discipline required. Duties will include teaching at the undergraduate and graduate (M.S.) level as well as the design and development of a master's level curriculum in Software Engineering. The School of Computer Science includes both undergraduate and graduate departments in Computer Science as well as the Department of Applied Computer Studies dealing with programs in computer applications. The School's computing facilities include 4 VAX 11/780, a Pyramid-90X, 5 Masscomp MCS53, 2 PDP-11, all networked and Unix based. There are 5 student labs with over 200 student workstations. A major Xerox grant has provided 15 Dandelion workstations and associated servers. Send resume to Wiley McKinzie, Director, School of Computer Science, 1 Lomb Memorial Drive, Rochester, New York 14623. RIT is an equal opportunity affirmative action employer.

UNIVERSITY OF CALIFORNIA, LOS ANGELES
Computer Science Department

The Department of Computer Science at the University of California, Los Angeles, invites applications for tenure-track positions at the Assistant Professor level in Computer Science beginning July 1986. Applications are also welcome from highly distinguished candidates at the senior level. All applicants should possess the Ph.D. in Computer Science by July 1986. Quality is our key criterion for selecting applicants. We expect them to have a strong commitment to both research and teaching and an outstanding record of research for their level. It is important that they exhibit strong potential for continued excellence in university research and teaching.

We seek applicants in any mainstream area of Computer Science and we particularly welcome those with research strength in software related areas. Interested applicants should send a letter of application, a resume, and the names of four references to: Professor Joseph V. Boxer, III, Chair, Faculty Recruiting Committee, Boelter Hall 4731K, Computer Science Department, University of California, Los Angeles, Los Angeles, CA 90024.

The University of California is an Affirmative Action/Equal Opportunity Employer.

CARNegie MellON UNIVERSITY
Software Engineering Institute
Education Division

The Education Division of the Software Engineering Institute is charged with the task of increasing the number of well-educated software engineers through a variety of activities. The major project is the design and development of a Master of Software Engineering (MSE) curriculum. The Software Engineering Institute plans not only to create but also to disseminate the curriculum to academic institutions, industry, and government through active affiliate programs.

The Education Division invites experienced computing educators to apply for temporary and permanent positions on the technical staff. Work involves production of educational materials including syllabi, course outlines, reading lists and textual materials. Planned future work includes teaching software engineering educators and the development of educational software.

Opportunities also exist to work on a variety of innovative educational programs and their delivery. The Software Engineering Institute also encourages people to interact on other software engineering projects in other divisions of the institute.

We desire educators with a Ph.D and several years teaching experience. Please send a vita with at least three names of references to: Dr. Norman E. Gibbs, Assistant Director for Education, Software Engineering Institute, Carnegie-Mellon University, Pittsburgh, PA 15213. For more information call (412) 578-7703.

The Software Engineering Institute is a Federally Funded Research and Development Center sponsored by the U.S. Department of Defense and operated by Carnegie-Mellon University.

Carnegie-Mellon University is an equal opportunity affirmative action employer.