

Listed are abstracts from recent papers by IBM authors. Inquiries should be directed to the publications cited.

The VM/370 performance predictor, Yonathan Bard (IBM Cambridge Scientific Center, Cambridge, MA), *ACM Computing Surveys* **10**, No. 3, 333-342 (Sept. 1978). This paper describes the VM/370 Predictor, a tool designed primarily for use by IBM systems engineers for modeling VM/370 systems. The tool consists of an analytic model and also the data reduction package that develops input for the model from VM/370 Monitor data. Output of the tool is estimated performance measures. The paper covers the structure, typical usage, features, and limitations of the VM/370 Predictor. This issue of *ACM Computing Surveys* is a special issue on queuing network models of computer system performance.

A methodology for the design of distributed information systems, Giacomo Bucci and Donald N. Streeter (RES Yorktown Hts., NY), *Communications of the ACM* **22**, No. 4, 233-244 (April 1979). A macro model of a distributed information system is presented that describes the major costs of using an information system from the perspective of the end user. The model is intended to provide guidance to the system designer by making evident the effect of various design and operating parameters on overall cost per transaction. The technique is illustrated by application to the design of an interactive transaction processing system.

Storage technology: Capabilities and limitations, Albert S. Hoagland (RES San Jose, CA), *Computer* **12**, No. 5, 12-18 (May 1979). It is important to understand storage technology trends because of their impact on the information processing industry. An overview of storage technology and its hierarchical structure is followed by discussions on charge coupled devices, magnetic bubble memory and optical video disk. The paper concludes with a discussion on the position of magnetic recording in today's technology and its future.

System R: A relational data base management system, System R Group (RES San Jose, CA), *Computer* **12**, No. 5, 42-48 (May 1979). This paper provides a concise introduction to System R, an experimental data base management system developed at the IBM Research Center at San Jose. The paper is a part of a special issue on technology and architecture for data management.

Processor architecture anticipates future performance requirements, Richard E. Birney (GSD Boca Raton, FL), *Computer Design* **18**, No. 4, 71-79 (April 1979). The design of the Series/1 reflects the needs of the real-time, sensor-based and distributed data processing applications it is meant to service. This paper discusses the design characteristics of the Series/1, in particular the instruction set, interrupt structures and input/output interfaces. Alternatives and results are related to design goals and performance specifications.

Image processing and computer graphics, Robin Williams (RES San Jose, CA), *Computer Graphics and Image Processing* **10**, No. 2, 183-193 (June 1979). Recently the fields of image processing and computer graphics have been drawn closer together through common technology, techniques and equipment. This paper explores this intermixing of graphics and image processing. After an introduction to color display systems, the similarities and differences between the two fields of endeavor are compared and some areas where the fields merge are described. Two specific applications, map editing and slide making, are discussed.

Abstracts

The IBM 3033: An inside look, William D. Connors (A/FE), John H. Florkowski, and Samuel K. Patton (DSD Poughkeepsie, NY), *Datamation* **25**, No. 5, 198-218 (May 1979). Design objectives for the IBM 3033 processor were developed from analysis of the IBM 3168 processor performance. This paper reviews 3168 processor design for background and perspective and then discusses 3033 architecture, specifically its differences from the 3168. Included in the description are the 3033 multiprocessor mode, the channels and their directors, and the console. A performance analysis concludes the paper.