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In its early years, Computer was published bimonthly. Please check back for more historical highlights in upcoming 2018 issues.

DECEMBER 1992

Computer Society President’s Message—Finishing Up (p. 5) “The past 11 months have gone much too quickly. As I’m sure was the case with my predecessors, I assumed office with enthusiasm and an ambitious agenda of work to be done. And, like them, I’m ending my term encouraged by what we accomplished, yet convinced that we barely scratched the surface and that much remains to be done.” [Editor’s note: Looking back, the same can be said for all IEEE CS presidents. Many achieved quite a bit but the changeover after a single year also stopped many important developments because the new president, of course, sets new priorities. A multi-year appointment, as is done in many societies, might help in that respect.]

Computer Editor in Chief’s Message—Logging Off (p. 8) “Having served as your editor in chief for the past two years, I take this opportunity to say goodbye and to look back. ... The descriptors ‘technically substantive’ and ‘well-written’ represent the keystone of Computer’s editorial policy, and obtaining a high-quality revision is essential to the maintenance of high standards.”

From Discipline in Crisis to Mature Science—Evolving Needs for Computing Research Infrastructure (p. 18) “One reason the discipline has improved over the last 10 years is that the NSF and others paid more attention to building a research infrastructure. ... The government—through NSF’s Co-ordinated Experimental Research Program, NSFNET, and cooperative DARPA programs—improved experimental research facilities at about two dozen US universities. ... However, [there is] intense competition for declining resources, as measured by the low and rapidly declining funding success rates at NSF and other agencies. Success rates within NSF’s Computer and Information Science and Engineering Directorate are only about half those of 1981. ... Much progress has been made, but the discipline is still fragile. Clearly, the need for research infrastructure funding has not lessened; indeed, participants felt that an expansion (above inflation) is required.”

Object-Oriented Real-Time Systems—Concepts and Examples (p. 28) “Our work has included the development of the Concurrent Hierarchical Adaptable Object System (Chaos), an object-based language and programming/execution system designed for dynamic real-time applications. Chaos was designed to study real-time method and message issues, so we decided it need not support inheritance. Chaos objects and messages have both functional and temporal attributes.” [Editor’s note: Although object-oriented real-time programming never had the hoped-for breakthrough, the concepts introduced here were later used in other approaches.]

Load Distributing for Locally Distributed Systems (p. 33) “Load-distributing algorithms can improve a distributed system’s performance by judiciously redistributing the workload among its nodes. This article describes load-distributing algorithms and compares their performance. ... Adaptive load-distributing algorithms are a special class of dynamic algorithms. They adapt their activities by dynamically changing their parameters, or even their policies, to suit the changing system state. ... We describe several representative algorithms that have appeared in the literature. They illustrate how the components of load-distributing algorithms fit together and show how the choice of components affects system stability.” [Editor’s note: Examples given are sender-initiated, receiver-initiated, symmetrically initiated, and adaptive algorithms. Locally distributed systems led to general distributed systems like grid, cloud, and now edge systems, where load balancing is an essential component that has resulted in many other such algorithms.]
Copyrights and Author Responsibilities (p. 46) "Copyright law protects the expression of ideas. It does not protect the ideas themselves. Under this law, authors own the sequence of words used to express an idea. However, other writers are free to use different words in different ways to express the same idea. The law also establishes that a copyright is a form of property, and as such, that its rights can be licensed or sold in full or in part by an author. ... In the electronic age, prospective authors can gain access to documents in electronic form. Authors might become enamored with how some paragraph or section of a document makes a point so clearly that they can find no better way to express it. The ease of electronic cutting and pasting makes verbatim reuse very tempting. ... If the material appears verbatim, Prof. Doe must indicate the start and end of the verbatim material, usually with quotation marks. Lengthier quotations must be set off from other material by spacing and indentation. ... The boundary between fair use and copyright infringement is one of the gray areas of the law and is often argued in court." [Editor's note: These plagiarism issues still plague the scientific publishing world. Nowadays, publishers and universities routinely use plagiarism-detection systems; however, human control of such investigations are essential to detect positive and negative outliers.]

Color and Sound in Algorithm Animation (p. 52) "Algorithm-animation systems offer sensory insight into algorithms, but creating effective visualizations is an art, not a science. ... We review the techniques developed by Brown and Sedgewick in the mid-1980s using the Balsa algorithm-animation system in Brown University’s ‘electronic classroom.’ We also describe new techniques that focus on color and sound areas just opening up in workstation-based interactive algorithm-animation systems. We are, in fact, unaware of any earlier work using sound to convey how an algorithm operates." [Editor's note: This investigation makes interesting use of sound notation and play to illustrate both the dynamic and static behavior of mathematical algorithms.]

Trends in Advanced Packaging Technology (p. 67) “Advanced packaging is shifting to greater use of multi-chip modules for all applications, not just those running on mainframes. The reasons are threefold: higher performance, smaller size, and lower cost.” [Editor’s note: Today, we talk about multicore technology in which multiple CPUs are integrated into one chip and multiple such chips might be mounted on one substrate.]

Is There Life after Desktop? (p. 89) “Well, I held out until the current crop of laptops included a 486 processor and at least 80 Mbytes of hard-disk space. After all, I also wanted to run Windows on my machine and have Ami Pro, Excel, or PowerPoint run just as speedily as they did on my old desktop. Battery life was never an issue for me. ... I set my price point at something under $3,000 ... Its 486/SLC notebook included an 80-Mbyte drive; 2 Mbytes of RAM, upgradable to 16 Mbytes; 640 × 480 VGA resolution in 32 shades of gray; a 3.5-inch floppy-disk drive; one parallel and two serial ports; and external connections for a keyboard, an external display, and a bus connector. ... After many months, I have been very satisfied with my decision: Yes, there is life (and a lot more of it) after desktop.”

Laws and Lemmas for the Computing Masses (p. 120) “Unless the results are known in advance, funding agencies will reject the proposal.” [Editor’s note: This is an entertaining commentary about laws such as Murphy’s, and lemmas such as Rocky’s.]

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