MAY 1967

**FCC Investigation of Computers Moved Ahead** (p. 1) “In November 1966, the Federal Communications Commission [FCC] published a Notice of Inquiry that showed a profound official interest by the FCC in the computer industry, that interest being based on ‘the growing convergence of computers and communications.’ A list of areas of specific interest and questions in need of answers was given and interested parties were invited to provide input.” [Editor’s note: This call and the responses from 23 organizations—some of which don’t exist anymore—reflect the US government’s very strong regulatory power at the time.]

**The Copyright Revision Bill in Relation to Computers** (p. 6) “I. Computer Programs ... Copyright of a computer program on the other hand [as compared to patents], would be available on the basis of ‘originality,’ that is, merely an absence of copying without regard to true inventiveness; that there would be no serious governmental scrutiny in advance; and the protection would run for a lengthy period of time (the present period is 56 years, and the Revision Bill proposes roughly 75 years). This kind of easy and broad protection for computer programs would threaten to tie up the computer program field and inhibit its progressive development. ... II. Use of Copyrighted Materials by Means of Computers ... They seem to eliminate virtually all preference for educational and related institutions utilizing copyrighted works by means of computers. Assuming that the exact line of the traditional exemptions is to be abandoned and concessions made to publishers, it still appears that the Revision Bill in its present version goes too far and makes undue concessions.” [Editor’s note: Unfortunately, concerns about that bill, which were insufficiently investigated at the time, were completely justified by the development of e-publishing and the ongoing problems regarding fees, open access, unauthorized use, and so on.]

**AFIPS Symposium on Privacy** (p. 19) “Prompted in part by New Jersey Congressman C.E. Gallagher, chairman of a special House subcommittee on the invasion of privacy, the AFIPS [American Federation of Information Processing Societies] conference brought together more than 30 representatives selected from government, business and industry, labor, law enforcement agencies, the social sciences, and the academic community. ... In the course of these discussions, it was revealed that there is no well-established right to an individual privacy, and that there are no explicit laws that protect the privacy of information.” [Editor’s note: This discussion—already in full swing 50 years ago—still hasn’t been satisfactorily resolved.]

MAY 1992

**Computer Architectures for Intelligent Systems** (p. 6) “Many sensors, processors, actuators, models, algorithms, and software programs have been proposed and implemented to solve problems related to intelligent systems. These efforts, along with the promise of VLSI, fueled the search that led to the development of very large scale integrated intelligent (VLSI) systems. ... This special issue on computer architectures for intelligent systems is intended to provide a unified perspective of the field.” [Editor’s note: Remarkably, many of the performance complaints driving such proposals for special hardware have been eliminated in the past 25 years by the continuous application of Moore’s law. So, although some of the solutions presented in this issue are interesting, in my mind they never found wide applicability.]

**Distributed Real-Time Control of a Spatial Robot Juggler** (p. 12) “This article describes the Yale spatial juggler. Further, based on this experience, we describe an emerging set of working principles for the design and implementation of embedded real-time distributed controllers. We are convinced that complex, coordinated motion-control applications will increasingly incorporate medium-grained event-driven parallel processing. ... In particular, we wish to call attention to a programming style that substitutes event-driven dynamical processes and geometrical transformations
for a more syntactically oriented, if-then-else approach. We call this style ‘geometric programming.’ Its recourse to low-level feedback loops in the pursuit of medium- or even high-level goals—uncommon as this might be within the traditional computing community—typifies the control engineer’s approach."

**A Very High Speed Architecture for Simulated Annealing**

(p. 27) “Annealing’s major disadvantage is that it can be extremely slow … and much discussion about using parallel computers to accelerate annealing techniques has occurred. Some parallel systems, in fact, achieve close to ideal speedup on small processor arrays. I describe an alternative technique to speed annealing: a special-purpose computer architecture that supports the simulated annealing of scheduling problems based on counting costs and distance-measure costs.”

**SNAP: Parallel Processing Applied to AI**

(p. 39) “Current machine translation systems, for example, might take several seconds to process a sentence in specialized domains such as business correspondence or technical articles. … In this article, we argue that a viable solution for building future intelligent systems is to design special-purpose parallel computer architectures. We restrict the applications to those using semantic networks for knowledge representation. Reasoning on these networks is achieved with a marker-passing model of processing. The Semantic Network Array Processor (SNAP), implemented at the University of Southern California, is a marker-passing parallel computer dedicated for natural-language and other knowledge-processing applications.”

**Touring Machines: Autonomous Agents with Attitudes**

(p. 51) “The operating environments at such facilities as automated factories, nuclear power plants, and space stations are continually becoming more complex. … This article presents a new multilayered integrated architecture for controlling autonomous mobile agents, or Touring Machines. The Touring Machine architecture (not to be confused with the machine that A.M. Turing created in 1936) combines capabilities for producing a range of reactive and deliberative behaviors in dynamic, unpredictable domains. “[Editor’s note: The article’s examples remind me of the additional complexities that are being encountered and must be resolved today with autonomous vehicles.]"

**Compcon Spring 92 Report**

(p. 95) To use these rich data types [multimedia, virtual reality, high-performance computing, communication], PCs will have to incorporate features that support them. For example, each computer would need features that produce audio output, decompress digital video, and display graphics.” [Editor’s note: All these features fit on today’s smartphones; what a development!]