SEPTEMBER 1967

First Annual IEEE Computer Conference (p. 1) “The First Annual IEEE Computer Conference, sponsored by the IEEE Computer Group in cooperation with Northwestern University and the IEEE Chicago Section, has the major objective of providing a forum to meet the specialized requirements of the Computer Group Membership. ... There will be 38 research papers organized in 10 technical sessions. Each of these papers has passed our rigorous reviewing process, and falls into one of the following areas: reliability, design automation, pattern recognition, new computer elements, and new computer system organizations.” [Editor’s note: This was one of the first “generic” conferences to provide an overview of the computing field. Although initially successful, as the field became broader and more specialized, these types of conferences lost their audience and eventually died out.]

Language Survey (p. 19) “A report of the Comparison of Languages Subcommittee of the ACM Special Interest Committee on Symbolic and Algebraic Manipulation. ... It reports on the following programming languages: ALTRAN, AMBIT, COGENT, COMIT, CONVERT, CORAL, DYSTAL, FLIP, FORMAC, FORMULA ALGOL, IPL-V, LISP1.5, LISP2, L6, PANON, SLIP, SNOBOL, AND TRAC.” [Editor’s note: Few of these languages have had a lasting effect on the field, but the article’s comparison of their features nevertheless reveals the thinking of the time.]

SEPTEMBER 1992

The Epilog System: Automated Long-Term Electroencephalography Monitoring for Epilepsy (p. 5) “Background electroencephalography (EEG) is important because it indicates the brain’s underlying condition. This signal might include any of a wide variety of abnormal events—some occur frequently, others may be very rare. ... So that clinicians can accurately correlate behavior with EEG events surrounding seizures, accurately synchronized video recording must accompany the EEG recording. ... EEG is a data-intensive, high-volume endeavor. This is particularly true in monitoring for the planning of epilepsy surgery: more than 100 electrodes can be placed on and in a patient’s head. ... During the entire stay, more than 10,000 Mbytes will flow through the buffers disk, and about 500 Mbytes will go to the work disk. Final segments’ storage is typically 100 Mbytes. About 15 pages, representing 10 Mbytes of data, might be printed. The overall ratios for acquire:review:save:print are therefore 1,000:50:10:1.” [Editor’s note: The main concern regarding this system is the real-time reduction in the amount of data to be stored and printed. By today’s measures, 10 Gbytes for a five-day monitoring period could easily be handled, with offline evaluation possible.]
The RightPages Image-Based Electronic Library for Alerting and Browsing (p. 17) “The prototype takes advantage of fast hardware, multimedia workstations, and broadband networks to process scientific and technical journals for users at AT&T Bell Laboratories and to offer a service that (1) alerts them to the arrival of new journal articles matching their interest profiles, (2) lets them immediately examine images of pages in the alerted articles and browse through other articles in the database, and (3) enables them to order paper copies of any articles in the database.”

Operational Versus Definitional: A Perspective on Programming Paradigms (p. 28) “Figure 2 [presents] the operational–definitional continuum—imperative, object-oriented, functional, asynchronous, synchronous, transformational, logic, form-based, dataflow, constraint-programming, demonstrational.” [Editor’s note: This article offers a very systematic analysis of the above programming styles. The authors use examples to explain the different approaches’ strengths and weaknesses.]

Data-Diffusion Machine—A Cache-Only Memory Architecture (p. 44) “In a cache-only memory architecture (COMA), the memory organization is similar to that of a NUMA (nonuniform memory architecture) in that each processor holds a portion of the address space. … Besides being a large cache for the processor, it might also contain some data from the shared address space that the processor never has accessed—in other words, it is a cache and a virtual part of the shared memory. We call this intermediate form of memory attraction memory.” [Editor’s note: Much of this discussion resembles other discussions about in-memory databases at the time.]

Software Is a Product … NOT! (p. 128) “Software as a service. What is a service paradigm? … As PCs came along, software truly became a product. Now, we can go into a store and buy software off the shelf … With the attitude that software is a continuing service, we plan and budget for what was called maintenance as part of that service.” [Editor’s note: Nowadays, software as a service (SaaS) is common, and software is often licensed, rather than bought, with upgrades and maintenance included in the agreement.]