Gerard Salton, professor of Computer Science at Cornell University and for years the preeminent figure in the field of automated document retrieval and question-answering systems, died of recently diagnosed lung cancer on August 28, 1995 in Ithaca, NY. He was 68.

Gerry was born in Nurnberg, Germany, on March 8, 1927, the son of Rudolf and Elizabeth Sahlmann. He spent his youth in Germany, but World War II forced his family to flee. He recalled that in this flight he and his brother were led across a border late at night, eluding German guards. He came to this country in 1947, and attended Brooklyn College where he received a B.A. (1950) and an M.A. (1952) in mathematics. While at college he married May Birnbaum in 1950 and became a U.S. citizen in 1952.

In that year he was accepted as a graduate student by Howard Aiken, then the only professor covering the computer area at Harvard. He was the last of Aiken’s 16 post-war PhD students, receiving his degree in January 1958. He continued at Harvard, first as an instructor (1958-1960) and then as an assistant professor (1960-1965).

He later published a fond appreciation of Aiken and his experiences with him. (“Howard Aiken’s Children: The Harvard Computation Laboratory and its Students,” Abacus, vol. 1, no. 3, Spring, 1984, Springer-Verlag.) In 1962 he was a Guggenheim Fellow.

At the Harvard Computation Laboratory, Gerry was one of the first programmers for the Harvard Mark IV computer and became interested in natural-language processing, especially information retrieval. This interest led in the 1960s to what he developed into his main research tool, the SMART information retrieval system. Whatever the true origin of the acronym the system has always been known as “Salton’s Magical Automatic Retriever of Text.”

From Harvard he went to Cornell in 1965 as one of the founders of its Computer Science Department where he continued for 30 years.

In 1966 the National Academy of Sciences report, “Languages and Machines, Computers in Translation and Linguistics,” was taken as a condemnation of the excessive promises of computer translation of natural language and, by unfortunate extension, of all related work including Gerry’s quite different field, automatic retrieval of natural language text. This led to a severe decline in government funding and a consequent loss of academic and commercial interest. With his dedication and loyalty to his field, Gerry kept it alive.

The ideas and concepts in SMART fundamentally changed full-text processing methods, providing the field of information retrieval with solid underpinnings. Among the now well-known concepts introduced in SMART were the vector space model, sophisticated statistical term weighting schemes that distinguish concepts important for text representation from more marginal concepts, and the widely-used “relevance feedback” technique for query optimization. In 1971 Salton edited a description of SMART and its experiments, The Smart Retrieval System—Experiments in Automatic Document Processing, Prentice Hall.

Today, dozens of well-known commercial systems exploit the vast amounts of text material now available in machine-readable form by using the techniques and concepts that Gerry developed in SMART. Individual, a newscutting service, licensed the technology directly. Others such as WAIS (Wide Area Information Server) and DOWQUEST (a tool for the Dow Jones newswire) use technology derived from SMART, and many new systems have leveraged off his years of research including WIN (the West Publishing Company’s legal retrieval system) and INQERY, another eminent research tool.

Salton enjoyed writing and did a lot of it. He published more than 150

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**Gerard Salton**

**Born:** March 8, 1927, Nurnberg, Germany  
**Died:** August 28, 1995, Ithaca, NY  
Leading figure in the field of automatic text retrieval and creator of the SMART system.  

**Education:** BA, 1950; MA, 1952; Brooklyn College; PhD, 1958; Harvard University.  
**Academic Career:** Instructor, 1958-1960, Assistant Professor, 1960-1965, Harvard University; Professor of Computer Science, 1965-1995, Cornell University.  
research articles and five texts on information retrieval, his most recent being *Automatic Text Processing—The Transformation, Analysis, and Retrieval of Information by Computer*, Addison-Wesley, 1989.

He gave a great deal of time to the Association for Computing Machinery (ACM). He was editor-in-chief of *Communications of the ACM* and the *ACM Journal*, served on the ACM Council for seven years, at one time as the representative of the Northeast Region. He was active in SIGIR (Special Interest Group on Information Retrieval) since its creation, serving as its chair 1979-1983. In 1983 SIGIR gave him its first Award for Outstanding Contributions.

At the time of his death he was an editor of the *ACM Transactions on Database Systems*. He was for many years a faithful reviewer for *Computing Reviews*, taking great care and pride in his work. His extremely skillful and informative review of Mind Over Machine: The Power of Human Intuition and Expertise in the Era of the Computer by Dreyfus, Dreyfus, and Athanasiou (Free Press 1986) was selected as the Best Review of 1988. He became an ACM Fellow in 1995.

For several years, he was Chair of Section T of the American Association for the Advancement of Science and on the Board of Directors of the American Society for Information Science (ASIS).

In some ways Salton exemplified the traditional eminent professor. He was professionally literate in many subjects, from linguistics to German literature. He could express himself like a professor of English yet the highly technical subject that he created depended totally on computers and mathematics. He upheld the highest standards of scholarship for himself, his students, and his colleagues both inside and outside Cornell. He could be depended upon to do what he said he would. He was a nurturing, caring advisor and supervised 20 PhD students, now in both industry and academia.

Recreation was an important part of Gerry's life. He was an avid concert-goer, rarely missing a Cornell concert, and served many years on the Faculty Committee on Music. He sailed, swam, and ice-skated regularly and was an enthusiastic supporter of Cornell ice-hockey. He skied regularly, cross-country and downhill, both in Ithaca and Aspen. He loved flowers and spent a great deal of time in his garden.

In addition to the awards already mentioned, two of his books and papers won awards from the ASIS which also gave him its award of merit in 1989. He won a prestigious German Alexander Humboldt Senior Scientist Award in 1988.

He is survived by his wife of 45 years, Mary Birnbaum Salton, a son, a daughter, and three grandchildren. Contributions may be made to the Gerard Salton Distinguished Lectureship Series in Computer Science through Marsha Pickens, Carpenter Hall, Cornell University, Ithaca, NY 14853.

Acknowledgments

This obituary is partially based on the biography of Salton in *Computer Pioneers* by J.A.N. Lee, IEEE Computer Society Press, and an obituary prepared by the Cornell University through Cynthia Robinson.

Alonzo Church, who was born on June 14, 1903 in Washington, D.C., died Friday, August 11, 1995 in Hudson, Ohio at the age of 92.

Services were held in the Marquam Transept of the University Chapel at Princeton University. Interment was at the Princeton Cemetery.

The family has suggested that memorial contributions be made to the Association for Symbolic Logic, 1409 West Green Street, Urbana, IL 61801, and marked “For the Alonzo Church Fund.”

**Bernard M. Oliver,** 79, designer of the hand-held calculator died November 23, 1995 in Los Altos Hills, Calif., of heart failure.

Educated at Stanford and Caltech, Oliver joined Bell Telephone Laboratories in New York in 1940, initially working on developing quality television systems before turning to radar during World War II. In 1952, he joined fellow Stanford alumni William Hewlett and David Packard at their Palo Alto electronics company as director of research. He became a vice president and joined the Hewlett-Packard board five years later. Over four decades, Oliver garnered 50 patents for technological inventions but was best known for designing the hand-held calculator. The company introduced it to the public in the early 1970s, and the design later earned Oliver the National Medal of Science.

In recent years, Oliver devoted himself to the search for extraterrestrial intelligence by use of radio telescopes at NASA's Ames Research Center and later at the private SETI Institute in Mountain View. In Palo Alto, Oliver served on the school board and was a major supporter of the Los Altos Repertory Co.


The following appreciation was delivered by Peter Robinson at Neil Wiseman's funeral on June 26, 1995:

“I only had the privilege of knowing Neil Wiseman for the past 20 years, first as his student and later as a colleague; there are many here whose memories go back much further. We each have our own particular recollections of his academic inventiveness and enthusiasm, his teaching skills, his wisdom and gentle humanity, and especially his sense of humor.

“Working with Neil was never dull. I would like to share a few cameos from his life with you now.

“Neil showed an early technical aptitude and in 1950 he joined the Pye electronics company in Cambridge as an apprentice, which was to prove a regular path for engineers into the University's Mathematical Laboratory in the 1950s and 1960s. At the time, television was just becoming fashionable after the suspension of transmissions during the second World War. The technological challenge and the supply of war surplus components proved irresistible to an enthusiast like Neil and he built his own television receiver. Indeed, it was a colour set, and the colour was green. This was because the only cathode-ray display tubes that were readily available were war surplus radar tubes. These had the further disadvantage that they had a fairly long-persistence phosphor; once part of the screen had been illuminated it continued to glow for several seconds. This meant that any movement in the picture became seriously blurred. However, it worked.

“At home, this enterprise had a further challenge in the absence of mains electricity, which Neil duly solved by installing his own generator. This was not quite as stable as might be desired, so even static pictures became blurred as they drifted across the long-persistence tube. But it was television, and the neighbours in rural Suffolk overcame their natural suspicion of what looked dangerously like witchcraft to gather round and watch the live outside broadcasts of the Queen's Coronation.

“Spurred by this success, Neil enrolled in 1954 to study...