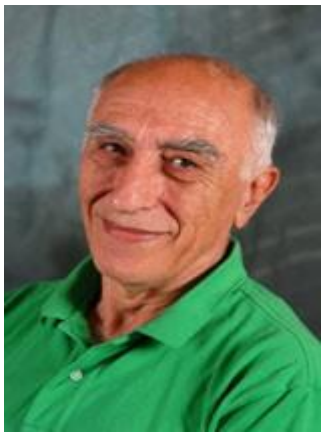
Dec. 20th

Boris Artashesovich Babayan

Born: Dec. 20, 1933;

Baku, Soviet Union

In the 1970's, Babayan developed the first Soviet superscalar computers, the Elbrus-1 and Elbrus-2, at the Lebedev Institute of Precision Mechanics and Computer Engineering (IPMCE) in Moscow. This was followed by the Elbrus 16-bit supercomputer series (starting with the Elbrus 3 in 1986). These computers were used in the Soviet space program and for nuclear weapons research.



Boris Babayan (2007). Own work. CC BY-SA 3.0.

Babayan was one of the first computer science student in Russia – a field so new it was still called "machine mathematics" when he enrolled at the Moscow Institute of Physics and Technology in 1951.

Babayan began working at IPMCE in 1956, initially on Sergey Lebedev's [Nov 2] BESM-2. Like Lebedev, he enjoyed mountain climbing, and won a silver medal in the 1957 USSR National Championships.

Other soviet computing pioneers include Bashir Rameyev [May 1], and Georgi Lopato [Aug 23].

Robert Sedgewick

Born: Dec. 20, 1946;

USA

Sedgewick's research interests relate to the analysis of algorithms, and his textbook on the subject is a standard in the field. He also teaches the subject on Coursera [April 18].

Sedgewick and Leo J. Guibas invented the red–black tree, a type of self-balancing binary search tree. A balanced tree is desirable since it makes searching for and changing elements faster. The tree's two colors (actually one bit of extra data) help to keep the tree balanced during element insertions and deletions.

In 1999 he was asked to list the top-ten books every developer should read. The only non-programming text he mentioned was "The Visual Display of Quantitative Information" by Edward Tufte [April 20].

Billion Dollar Brain Released

Dec. 20, 1967

"Billion Dollar Brain" is an espionage film directed by Ken Russell, based on a novel of the same name by Len Deighton [June 29]. It features Michael Caine as secret agent Harry Palmer.

The "brain" of the title is a sophisticated computer which manages a worldwide anti-Soviet spy network, which speaks using the actor's Donald Sutherland's voice. Sutherland also has a small role as a computer technician.

The brain's consoles belong to a Honeywell 200 [July 14] (H200), which were filmed on site at a Honeywell facility in the UK. Several H200 peripherals appear in the movie's opening credits, decorated with the words "reaction", "ingenuity", and "versatility". The same panels figure on the jacket of Deighton's book, reissued at the time.

ALGOL 68 Adopted

Dec. 20, 1968

ALGOL 68 (short for ALGOrithmic Language 1968) was conceived as a successor to ALGOL 60 [Jan 11] by IFIP Working Group 2.1. It had many more features (e.g. user-declared types, reference parameters, strings, matrix slicing, and concurrency) and a more rigorously defined syntax and semantics, based on a two-level grammar formalism invented by Adriaan van Wijngaarden [Nov 2].

The language was criticized for abandoning the elegant simplicity of ALGOL 60, even by some of its own design committee members, including Tony Hoare [Jan 11] and Edsger Dijkstra [May 11].

As a result, later revisions removed some of the more complicated ideas, such as proceduring and formal bounds. These changes were also partly due to the experience of implementing a compiler for the simpler ALGOL 68-R at the UK's Royal Radar Establishment (RRE). The implementers, Ian F. Currie, Susan G. Bond, and John D. Morrison, announced their work during the July 1970 IFIP meeting to discuss implementing ALGOL 68. The attendees were astonished that the compiler was ready, since estimates had been circulating of up to 100 man-years to write one.

Philip Woodward (another RRE engineer) and Susan Bond were responsible for the first easily understandable guide to ALGOL 68. The first print run of 17,000 copies quickly sold out.

Although European defence agencies promoted the use of ALGOL 68, the American side of NATO decided to develop Ada [Dec 10] instead, and made that language obligatory for US defense contracts.

Flash Memory

Dec. 20, 1980

Flash memory was invented by Fujio Masuoka while working at Toshiba. His team had come up with a new type of EEPROM (electrically erasable programmable read-only memory) that employed a single transistor rather than the usual two – a small difference that had a huge impact on cost. Erasing his EEPROM also took much less time.

The name "flash" was suggested by Masuoka's colleague, Shōji Ariizumi, because the memory erasing process reminded him of the flash of a camera.

Masuoka, along with Hisakazu Iizuka, filed a patent on Nov 13, 1981, and it was granted on this day.

Toshiba recognized his efforts by awarding him a bonus worth a "few hundred dollars". Not long after, Masuoka left Toshiba to become a professor at Tohoku University, and later sued his former employer demanding fairer compensation for his efforts. The settlement in 2006 was for ¥87m ($758,000).

Apple to Buy NeXT

Dec. 20, 1996

Apple announced its plan to buy NeXT Software [Oct 12] for an estimated $429 million; the deal was completed on Feb. 4, 1997.

Apple's intention was to utilize the NeXTSTEP OS as the basis of its future Mac OS X [March 24]. Perhaps more importantly, it also brought Steve Jobs [Feb 24] back into the fold, and by [Sept 16] he had reclaimed the CEO position.

Honda P2 Unveiled

Dec. 20, 1996

The Honda P2 was the first humanoid robot capable of walking independently in a human-like fashion (i.e. on two legs), even on rough surfaces and stairs, and able to recover from sudden destabilizing external forces. It was 180 cm tall and weighed 210 kg.

The P2 had two hands that could perform tasks such as tightening bolts, using a screwdriver, opening and closing doors, and lifting up to 2 kg.

There had been a P1, developed back in 1993, but Honda kept its existence a secret until after the P2 was announced.

Honda P3. Photo by by machu. CC BY 2.0.

The P-series continued for a while (P3, P4), and then became the ASIMO [Oct 21], with later robots becoming smaller, lighter, and more energy efficient.

For more humanoid robots, see [March 16], [Sept 5].