Feb. 2nd

John Henry Holland

Born: Feb. 2, 1929;

Fort Wayne, Indiana
Died: Aug. 9, 2015

Holland studied Complex Adaptive Systems (CAS), including the brain, ant colonies, and tropical rain forests, which led to his ground-breaking book on genetic algorithms, "Adaptation in Natural and Artificial Systems", published in 1975.

In the mid-1980's, Holland and several Nobel laureates in physics and economics founded the Santa Fe Institute, which quickly became the premier institution devoted to the study of CAS.

Holland may have been the recipient of the first computer science Ph.D. (from the University of Michigan in 1959), although it wasn't conferred by a computer science programme. If that's a requirement, then Sister Mary Kenneth Keller was probably first [June 7].

Holland's supervisor was one of the ENIAC [Feb 15] designers, Arthur Burks [Oct 13].

Holland often pointed to "The Genetical Theory of Natural Selection" (1930), by Ronald Fisher, as an inspiration, because of the way that it viewed evolution as an engine for adaptation.

Rocket Mail

Feb. 2, 1931

Rocket designer Friedrich Schmiedl delivered the first mail by rocket on this day; the missive followed a smooth trajectory down Austria's Schockel Mountain towards the town of Sankt Radegund at its base, a distance of some three kilometers. His V-7 (Experimental Rocket 7) was 880 cm long, held 102 pieces of mail, and landed safely by parachute.

Schmiedl subsequently set up the first regular rocket-mail service, known as Schmiedl's Post Rocket R1, between the towns of Semriach and Hochtroetsch; it operated for two years, from Feb. 1931 to March 1933.

Schmiedl wanted to expand the service, and proposed the development of rockets for long-range mail delivery between Vienna and Budapest, and Graz to Budapest. Sadly, the Austrian Post office preferred to support a law prohibiting rocket mail activities, followed by a general ban on private rocket development in 1935.

At the start of WWII, Schmiedl destroyed all of his rocket research, not wanting it to be used for military purposes, and refused an offer after the war to conduct rocket work in the USA.

Printed Circuit Patented

Feb. 2 1943

Paul Eisler began developing an etched foil printed circuit board (PCB) design in 1936, soon after arriving in the UK, having escaped Nazi persecution in Austria.

A radio built using his prototype PCB technology attracted the interest of a telephone company because it demonstrated how PCBs could eliminate the need for excessive wiring. But the project was dropped after the company's management noted that the wiring work was done by "girls" and "girls are cheaper and more flexible."

Eventually, Technograph Ltd invested in Eisler's PCB ideas in 1941, but Eisler accidentally forfeited rights to his invention when he neglected to read the contract before signing it. He finally got around to filing a patent on this day in 1943.

There was little demand for PCBs until the military started using proximity fuses in anti-aircraft shells, for which printed circuits were deemed vital.

In his spare time, Eisler was an inveterate inventor of gadgets, including the pizza warmer, heated wallpaper, and a rear window defroster for cars.

Ralph C. Merkle

Born: Feb. 2, 1952;

Berkeley, California

In 1974, while still an undergraduate, Merkle developed a scheme for communication over an insecure channel, known as Merkle's puzzle. It allows two parties to agree on a shared secret by exchanging messages, even if they have no shared secrets in common beforehand.

In other words, it's an example of public key cryptography which predates Martin Hellman [Oct 2] and Whitfield Diffie [June 5] famous paper of June 1976. However, Merkle's work is mentioned in that article, and Hellman later said: "Ralph really deserves equal credit with us."

Ralph Merkle (2007). Photo by david.orban. CC BY 2.0.

Merkle is also responsible for the Merkle tree, which has recently become an important data structure for implementing blockchains.

While at Xerox PARC [July 1] from the late 1980's, Merkle designed the Khufu and Khafre block ciphers, and the Snefru

hash function (all named after Pharaohs).

The NSA [Oct 24] asked Xerox not to publish the ciphers, but a reviewer of an internal report about the work inadvertently passed a copy to John Gilmore [Aug 00], who posted it to the sci.crypt newsgroup.

Since 1988, Merkle has been known for nanotechnology and cryonics, and consequentially made an appearance in the SF novel, "The Diamond Age", (1995) by Neal Stephenson. Richard Feynman [May 2], K. Eric Drexler [Dec 29] and Merkle appear as characters in a fresco at the Merkle Hall, where nanotechnological items are designed and constructed.

Merkle is the grandnephew of baseball legend Fred Merkle, who unfortunately is probably best remembered for a base-running error he made at the start of his career. It became known as "Merkle's Boner" and earned him the nickname "Bonehead".

Charles Petzold

Born: Feb. 2, 1953;

New Brunswick, New Jersey

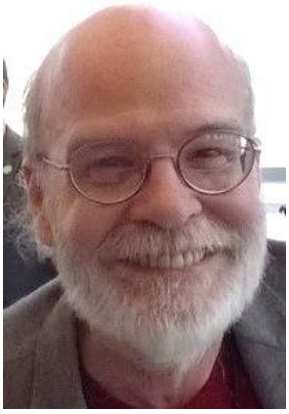
Petzold is a technical author best known for two quite different books: "Programming Windows" (1988), and "Code: The Hidden Language of Computer Hardware and Software" (1999). He's also one of the seven "Windows Pioneers" [May 00].

"Programming Windows" presents the best explanation of the Win32 API, and so has often been used to criticize the API's verbosity. For instance, the first example, a Windows version of "Hello World" [July 21], requires 150 lines of code. That's a little unfair since it also illustrates a lot about how Win32 works, and it's perfectly possible to cut the program down to a few lines:

```
#include <windows.h>

int WINAPI WinMain(
  HINSTANCE hInstance,
  HINSTANCE hPrevInstance,
  PSTR szCmdLine,
  int iCmdShow)
{
  MessageBox (NULL,
    TEXT("Hello,
          Windows"),
    TEXT("HelloMsg"), 0);
  return 0 ;
}
```

Petzold's "Code" book is a delight – an introduction to the design and workings of computers and software for the layman.



Charles Petzold (2015). Photo by Paul Hester. CC BY-SA 2.0.

Petzold's writing career began when he purchased a two-diskette IBM PC [Aug 12] in 1984 for $5,000. He decided to use it to pay off the debt, so wrote an article about MS-DOS for *PC Magazine*, which earned him $800.

RadioShack's Computer

Feb. 2, 1977

In April 1963, Charles Tandy acquired control of the failing RadioShack company. The story goes that he paid $300,000 for it, just enough to cover its outstanding bills.

Within two years, RadioShack's $4 million loss had been turned into a profit, and by the mid-1970's the company was being praised for its audio equipment and citizen's band radios.

In 1975, Don French, a buyer for RadioShack based on the West Coast, purchased a MITS Altair [Dec 19]. HIs interest in computers blossomed, and he eventually built his own PC, which he showed off to RadioShack's vice president for manufacturing, John Roach. This convinced Roach to look into the idea of RadioShack selling its own microcomputer.

In mid-1976 Roach and French visited National Semiconductor to check out its SC/MP (the "Scamp") microprocessor [Feb 00], and met Steve Leininger.

In June 1976, Leininger and French began working on a RadioShack kit, but Leininger successfully argued that "too many people can't solder", and that a pre-assembled computer would be a better seller. He also moved the choice of chip away from National Semiconductor's Scamp to the Zilog Z80 [March 9].

On Feb. 2 1977, French and Leininger demoed a prototype to Tandy by running a simple tax-accounting program jokingly called "H&R Shack". Tandy typed in his salary of $150,000 and promptly crashed the code since Integer BASIC only supported 16-bit numbers at the time. Tandy kindly entered a smaller value, which was correctly processed. He gave the project a green light, and the TRS-80 was announced on [Aug 3] 1977.

SimCity Released

Feb. 2, 1989

SimCity is an open-ended city-building game designed by Will Wright [Jan 20]. He started coding it for the Commodore 64 [Jan 7] in 1985, and spent nearly four years finding a publisher (Jeff Braun at Maxis) willing to try something so different. In the meantime, Wright had run out of memory on the C64 and switched to the Mac Plus [Jan 24].

SimCity arguably spawned two genres: the real-time strategy game and open-ended gaming with no set objectives. For example, it forged a path that was followed by such classics as Sid Meier's [Feb 24] Civilization, and numerous spin-off "Sims" titles [Feb 4].

Wright later noted that he'd been inspired by urban planning theories put forward in “Urban Dynamics” (1969) by Jay Forrester [July 14].

One element not found in Forrester's work was the "Monster" option on the "Disasters" menu. The PC version of SimCity featured a Godzilla-like creature, but the Super Nintendo [Sept 23] version employed Bowser [Sept 13].

On Jan. 10, 2008, the SimCity code was open-sourced as part of a donation to the "One Laptop Per Child" project [Jan 31]. However, its name reverted to Micropolis (Wright’s original choice of moniker), since EA (who had bought Maxis in the intervening years) retained the SimCity trademark.

Amelio Becomes Apple CEO

Feb. 2, 1996

Gil Amelio was named CEO of Apple, replacing Michael Spindler whose management of the company in the previous three years had included the layoff of 1,300 employees and severe financial losses.

Amelio observed, “Apple is like a ship with a hole in the bottom, leaking water, and my job is to get the ship pointed in the right direction;” he started bailing on Feb. 5.

Apple's main technical challenge was developing a new OS to replace the aging Mac System 7 [May 13]. The in-house Copland project [May 8] was deemed a failure, and cancelled by Amelio in Aug. 1996. Instead he turned to outside companies for ideas, first negotiating with Be Inc. [Oct 00] to obtain their BeOS. Apple offered to buy the company for $120 million, later raising their bid to $200 million. The discussions stalled when Be CEO (and former Apple executive) Jean-Louis Gassée demanded $275 million.

In Nov. 1996, Amelio switched to Steve Jobs’ NeXT [Oct 12] and its NeXTStep OS, and soon announced plans to buy that company [Dec 20] for $429 million. Jobs and Steve Wozniak [Aug 11] also joined Apple’s executive committee as advisors.

In spring 1997, a hostile takeover bid for Apple by Oracle’s Larry Ellison [Aug 17] failed, and 1.5 million shares of Apple stock were suddenly sold, causing the company’s value to slump. It later came to light that Steve Jobs had supported Ellison’s move, and had sold the stock.

On the July 4 weekend, Jobs convinced the Apple directors to oust Amelio in a boardroom coup, who submitted his resignation on July 9; he had been CEO for exactly 500 days. Jobs became interim CEO on [Sept 16].

The GitHub Arctic Code Vault

Feb. 2, 2020

The GitHub Arctic Code Vault is a data repository in the Arctic World Archive (AWA), a very-long-term archival facility 250 meters deep in a decommissioned coal mine in the Svalbard archipelago, just over one mile from the famous Global Seed Vault.

Today's snapshot contains every active public GitHub [Feb 8] repository, amounting to 21 TB of data, archived to 186 reels of film. For greater data density and integrity, most data was stored QR-encoded, and compressed. A human-readable index and guide is included on every reel explaining how to recover the information.

An Arctic Code Vault Badge is displayed in the highlights section of a developer’s profile on GitHub if their work has been archived.

The AWA is a joint initiative between Norwegian state-owned mining company Store Norske Spitsbergen Kulkompani (SNSK) and digital preservation provider Piql AS.

While Svalbard is affected by climate change, it's likely to change only the outermost few meters of permafrost, at least in the foreseeable future.