May 22nd

George Harry Heilmeier

Born: May 22, 1936;

Philadelphia, Pennsylvania
Died: April 21, 2014

In 1964, Heilmeier discovered several new electro-optic effects in liquid crystals, which led to the first working liquid crystal displays (LCDs), setting the ball in motion for their use in calculators, watches, computers, and other instruments.

Between 1975 and 1977, as director of DARPA [Feb. 7], he was responsible for starting the ADA language standardization [Dec 10]. He also formulated "Heilmeier's Catechism", a set of questions that anyone proposing a research project should be able to answer:

- What are you trying to do? Articulate your objectives using absolutely no jargon.
- How is it done today, and what are the limits of current practice?
- What's new in your approach and why do you think it will be successful?
- Who cares? If you're successful, what difference will it make?
- What are the risks and the payoffs?
- How much will it cost?
- How long will it take?
- What are the midterm and final "exams" to check for success?

Shuji Nakamura

Born: May 22, 1954;

Ikata, Japan

Nakamura invented the blue LED, a major breakthrough in lighting technology, and surprisingly much more difficult to create than red and green diodes.

Blue light has a shorter wavelength, which means a smaller width for focused beams. This is why blue laser diodes can pack much more data onto Blu-ray discs [July 18; Nov 18] and HD DVDs [Dec 8].

Isamu Akasaki, Hiroshi Amano, and Nakamura were the joint recipients of the 2014 Nobel Prize for Physics "for the invention of efficient blue light-emitting diodes".

Ethernet Proposal

May 22, 1973

Robert Metcalfe [April 7] completed a 13-page Xerox PARC memo that proposed the "Ethernet," a way to connect computers together into a local area network.

The crucial idea was to divide the streams of data sent between the machines into *frames*. Each frame would contain a source and destination address, and error-checking so that damaged frames could be detected and discarded. Depending on the network protocol running on the Ethernet, lost frames could be retransmitted.

Metcalfe was inspired by Norman Abramson's [April 1] ALOHAnet for wireless computer communication between the Hawaiian Islands. Abramson dealt with the unreliability of his network by dividing the data into *packets*, and adding an acknowledgment / retransmission scheme to deal with packet loss and collisions.

But a wireless solution wasn't practical for PARC [July 1], so Metcalfe used coaxial cable instead. The cable was laid along PARC's corridors, and the first computers were attached on Nov.11, 1973, creating a network that offered speeds of 3 Mbps.

Ethernet remained an in-house system for the next few years, but when Metcalfe and David Boggs published the paper, "Ethernet: Distributed Packet-Switching for Local Computer Networks" in 1976, it triggered a surge of interest in the frame/packet approach. Ethernet eventually become the world's most popular network cabling standard [Sept 30].

A patent (US 4063220) for "a Multipoint data communication system with collision detection" was issued to Metcalfe, Boggs, Charles Thacker [Feb 26], and Butler Lampson [Dec 23] on Dec. 13, 1977.

The name "Ethernet" came from the 19th century theory that the transmission of light between the Sun and the Earth was carried by an invisible medium called the "ether". The first two computers linked by Ethernet were named Michelson and Morley, after the scientists who disproved its existence.

Puck/Pac-Man

May 22, 1980

Legend has it that some time in 1979 Namco employee Toru Iwatani was staring at a pizza missing two slices, when he noticed that it resembled a mouth. This gave him the beginnings of an idea for an arcade game based around eating.

The result was *Pakkuman* - a name derived from the Japanese slang "paku-paku taberu", the sound a mouth makes (in Japan) when it's opened and closed in quick succession.

In 1980, Iwatani, along with programmer Shigeo Funaki and Toshio Kai on sound and music, finished the game, now called "Puck-Man".

Toru Iwatani (2011). Photo at GDC.

Puck-Man was released in Japan on this day to huge acclaim. It eventually caught the attention of arcade game manufacturer Midway, who bought the US rights, and released the game in the US on [Oct 26], renamed as Pac-Man.

Midway changed the name since they feared that vandals would change the "P" to an "F" on the sides of the arcade machines.

The original arcade game was designed to never end. However, those proficient enough to get to level 256, would have the game go haywire which made the level impossible to win.

Bond Saves Silicon Valley

May 22, 1985

The 14th James Bond [Jan 3; May 28] film "A View To A Kill" had its premiere in San Francisco's Palace of Fine Arts.

It was the last to feature the debonair (but aging) Roger Moore as 007. Indeed, Moore later recalled that he had been mortified to find out that he was older than his female co-star's (Tanya Roberts) *mother*. The movie also starred Grace Jones and Christopher Walken (playing the villain of course, Max Zorin).

The story involves a nefarious plan to detonate explosives beneath the lakes along the Hayward and San Andreas faults, causing Silicon Valley [Jan 11] to be flooded, therby giving Zorin a monopoly over the microchip industry. This "Main Strike" is scheduled to occur today, which is why the film's premiere was held on this day.

In the first draft of the script, Zorin wanted to destroy Silicon Valley by changing the course of Halley's Comet, but that was deemed too unbelievable. The comet visited our solar system during the early months of 1986.

Minesweeper

May 22, 1990

The game Minesweeper was created by Curt Johnson, originally for OS/2 [Dec 4], and ported to MS Windows by Robert Donner. It appeared in the first Microsoft Entertainment Pack [next entry].

The goal is to uncover all the squares that don't contain mines without being "blown up" by clicking on a square with a hidden mine. The location of the mines can be discovered by a process of logic.

Bill Gates became so addicted to the game that he finally had it deleted from his office machine, but only after his personal record for completing the game was down to a mere five seconds (most people take a few minutes.)

To beat Gates' time, Tom Reeves, a Microsoft development manager, wrote a program that played the game automatically. It would only click only on one corner of the board and then restart the game until it happened upon a configuration that was solved with just that click – thereby giving a winning time of one second.

When Gates was told, he fired off an email: "My critical skills are being displaced by a computer. This technology thing is going too far. How can one retain human dignity when computers do the important stuff better than people?"

The earliest ancestor of Minesweeper was probably Jerimac Ratliff's Cube, which also involved avoiding hidden mines. It was first published in David Ahl's [May 17] '101 BASIC Computer Games' in 1973.

Entertainment for Windows

May 22 ??, 1990

The Microsoft Entertainment Pack was a collection of 16-bit games for Windows 3.0 [May 22] including: Cruel (a card game); Golf (another card game); Minesweeper [previous entry]; Pegged (Peg solitaire); Tetris [June 6]; TicTactics (a tic-tac-toe variant) [Aug 25]; and IdleWild (a screensaver).

The pack was put together by the company's "Entry Business" team with the aim of making Windows more appealing to home users and small businesses. The intention was made by clear by various slogans printed on the software's box, such as "No more boring coffee breaks".

The project was assigned almost no budget, and no major game publishers got involved because they doubted Windows' legitimacy as a gaming platform. This meant that the resulting games mostly came from Microsoft employees who had written them in their spare time.

The product manager, Bruce Ryan, wrote the user guide, and took it to the local copy shop himself to run off 20,000 photocopies.

Three more Entertainment Packs were released in later years, with more than 500,000 sold altogether. In 1992 *Computer Gaming World* magazine described the complete series as "the Gorillas of the Gaming Lite Jungle".

Windows 3.0

May 22, 1990

Prev: [Dec 9] 1987; Windows 2.0
Next: [April 6] 1992; Windows 3.1

Microsoft released Windows 3.0 at the City Center Theater in NYC, spending $3 million on its opening-day marketing, and $10 million for the entire campaign.

Windows 3.0 was a significant revamping of Windows 2.x to make better use of the capabilities of Intel's 80286 [Feb 1] and 80386 [Oct 17] processors. It introduced the ability to run MS-DOS [Aug 12] programs in their own windows, which brought multitasking to the system. However, if Windows started misbehaving, which it did quite often, then the user could still retreat to the safety of running MS-DOS directly.

The feeble Program Manager (a GUI shell) inspired a number of quite nifty third party alternatives, such as Norton Desktop for Windows [Nov 14], and HP NewWave [March 17]. Naturally, Microsoft mostly put a stop to them in Windows 95 by forbidding PC makers from pre-loading other shells.

Version 3.0 went on to become the first version of Windows to garner widespread success, with over 100,000 copies sold during the first two weeks of its release.

The always insightful John Dvorak [April 1; Sept 27; Dec 26] said at the time: "I think Windows 3.0 will get a lot of attention; people will check it out, and before long they'll all drift back to raw DOS. Once in a while they'll boot Windows for some specific purpose, but many will put it in the closet with the Commodore 64 [Jan 7]."

Aaron Goldberg, of International Data Corp. remarked, "I don't know if anyone has tried to run Windows on a 286 machine, but frankly I'd rather have knitting needles in my eyes."

First Internet Movie

May 22, 1993

"Wax: or the Discovery of Television among the Bees", by David Blair, became the first full-length movie (85 mins) posted to the Internet; the film had been shown in theaters in 1992.

It tells the story of a beekeeper, Jacob Maker, who once designed weapons guidance systems. Maker explains how his bees implanted a TV inside him, causing him to lose all perception of space and time. He now wanders the deserts of the American West, hallucinating. These visions take the form of collages of computer animations, home video, and old photos.

Blair explained, "It started as a three-and-a-half minute piece, a sort of experimental graphic piece, and then I added a story to it."

The Internet version was converted to black and white, and streamed at the rate of two frames per second. The limited data-carrying capacity of the Internet at the time meant that the movie only had about half the resolution of a normal TV image.

There's also an online adaptation called "WaxWeb". It was one of the earliest Web sites, and is still online at http://waxweb.org/.

Bitcoin Pizza Day

May 22, 2010

On this day, now celebrated as Bitcoin Pizza Day, Laszlo Hanyecz agreed to pay 10,000 Bitcoins for the delivery of two Papa John's pizzas.

A British man took up Hanyecz's offer and bought the two pizzas for him in exchange for the 10,000 Bitcoins [Jan 3]. He got himself a bargain, paying $25 for the pizzas, while 10,000 Bitcoins were worth around $41 at the time.

However, Hanyeczs' pizzas have continued to get more and more expensive. Nine months after the purchase, the pizzas were worth $10,000, but by May 2021 – the 11th anniversary of Bitcoin Pizza Day – the two pizzas were valued at around $458 million.