Sir George Alfred Julius

Born: 29 April 1873;

Norwich, UK
Died: June 28, 1946

Julius' family emigrated to New Zealand when he was a child. From around 1907, he began working on the design for a mechanical vote-counter, but after the government rejected his request for funding, he cleverly repurposed it as an automatic totalisator (a tote machine), the world's first.

The first "Julius" (as the machine later became known) was installed at the Ellerslie Racecourse in Auckland in 1913, where it proved indispensable. Organizers of a course at Longchamps in France, introduced one in 1928, and Britain got its first Julius in 1930. Julius' totalisators came to dominate the international tote industry for well over 50 years.

George Julius. CSIRO Archives. CC BY 3.0.

The machine displayed the total number of 'unit bets' made on each horse (or greyhound, depending on the race course), and the grand total of all the bets. Its design allowed for bets to be placed on the same horse/hound at the same instant at up to 30 ticket windows without any bets being lost. It was powered by electricity, with numbers accumulated through a train of gears, and indicated on large rotating drums.

The original Ellerslie Julius filled a room of 10 x 10 meters, making it the largest mechanical calculating machine ever built. Some historians have also argued that these totalisators were the earliest real-time data processing systems.

Later versions became sophisticated enough to issue tickets, tot up the money placed on each runner, and calculate the odds in proportion to the bets laid. In the 1930's, mobile machines on trucks (aka totemobiles) brought the totalisation to remote country sites, and could be seen as the first 'portable' computers (for a more realistic first, see [April 00]).

In 1926 Julius became the first chairman of Australia's Council for Scientific and Industrial Research (CSIR), and was knighted in 1929.

Gustav Tauschek

Born: April 29, 1899;

Vienna, Austria
Died: Feb. 14, 1945

Tauschek was a self-taught engineer who was granted more than 200 patents in the computing field. He worked for IBM for many years, and devised numerous improvements to their punched card machines.

In 1929, he developed an early OCR (Optical Character Recognition) device called the "Reading Machine", and obtained a German patent for it, although Emanuel Goldberg's [Aug 13] work on OCR dated from the 1910s.

In 1932, Tauschek was awarded a US patent for the very first magnetic drum device (US 1880523). It could store 500,000 bits across its surface, giving it a capacity of about 60K. The earliest computer to employ a drum memory was the Atanasoff–Berry computer [Jan 15] in 1941.

Paul Baran

Born: April 29, 1926;

Grodno, Poland.
Died: March 26, 2011

Baran was one of the two independent inventors of packet switched computer networking, the other being Donald Davies [June 7].

While at RAND [Oct 1] in 1962, Baran took on the task of designing a "survivable" communications system that could maintain a link between its end points in the face of damage from nuclear weapons. He initially found inspiration in RAND director Franklin R. Collbohm's work on emergency communication over radio.

Baran's packet switching network proposal was presented to the Air Force in the summer of 1961, and published between 1960 and 1962 in a series of RAND tech. reports. The essential idea was to divide the data into small packets (or datagrams), labeled with an ID, its source, and destination. Within the network, packets would be forwarded from one computer to another using any available link until the information arrived at its stated destination. If the destination found it was missing some of the packets in a message, it could request the source to resend them.

A few years later, Larry Roberts [Dec 21] and Leonard Kleinrock [June 13] adopted similar technology for the ARPANET [Oct 29]. This link is one reason for the rise of the myth that the ARPANET (and therefore the Internet) was developed to withstand nuclear strikes, whereas it's simply that packet switching is a good way to connect machines.

Baran was one of the first people to write about the issue of computer privacy, and became the first computer scientist to testify on the issue before Congress [July 26].

His other contributions include the doorway gun detector (like the ones now used in airports),

along with a prototype that he built with Harold Steingold at RAND. He also proposed that the barrel of every rifle could be inscribed with a set of binary scratches so that every bullet fired would be uniquely marked.

László A. Bélády
Born: April 29, 1928;
Budapest, Hungary

Bélády devised the eponymous Bélády's optimal memory caching algorithm in 1966 while working at IBM; it states that the most efficient caching scheme should always discard the information that won't be needed for the longest amount of time in the future. It's also known as the "clairvoyant" algorithm because of the problem of predicting what might happen in the future. Nevertheless, it's become useful as a ideal benchmark for comparing with more "feasible" memory page replacement algorithms.

Les Bélády. (c) IEEE Computer Society.

He was also responsible for Bélády's anomaly: the phenomenon where increasing the number of OS page frames may actually result in an increase in the number of page faults for certain kinds of memory access.

Bélády, David Sayre, and Robert Nelson designed the groundbreaking , experimental IBM M44/44X, which simulated multiple IBM 7044s as virtual machines. It was used to explore different paging approaches, and their effect on performance. This led into research with Manny Lehman on large system complexity and program behavior modeling.

Although Bélády was born in Hungary, he left following the 1956 uprising and the resulting Soviet crackdown. He escaped the country by walking 30 miles through swamps to the Austrian border.

3D TV
April 29, 1953

ABC made the first experimental 3D TV broadcast via its affiliate station KECA-TV in Los Angeles. It was a 30-minute episode of the sci-fi series "Space Patrol", aired live during the 31st annual National Association of Radio and Television Broadcasters (NARTB) conference at the Biltmore Hotel. It was necessary to wear special 3D viewing glasses to watch the show, otherwise the black-and-white image became very blurry.

At the time, "Space Patrol" was a popular hit for ABC. It followed the 30th-century adventures of Commander-in-Chief Buzz Corry of the United Planets Space Patrol and his youthful sidekick, Cadet Happy. The 3D episode was called "The Theft of the Rocket Cockpit."

NASCAR E-mails
April 29, 2001

A NASCAR fan was upset that a Boston TV station, WXFT-TV, had decided not to televise the NAPA Auto Parts 500 race, in favor of a Red Sox-Kansas City Royals game. He made his displeasure known by sending six complaint e-mail messages to the station, which automatically forwarded them onto Fox Entertainment Group in Los Angeles.

Six e-mails doesn't sound like many, but the fan had also knocked together some software that kept sending them repeatedly. Eventually, 530,000 e-mails arrived at Fox, forcing it to shut down its Web site for

several hours because of the relentless barrage.

The fan was sentenced to a year's probation and ordered to spend the first six months in home confinement (probably watching TV).

Checkers Solved
April 29, 2007

Jonathan Schaeffer (1957 -) announced that the game of checkers (aka draughts) was "solved": in a normal two-player game, the result will always be a draw if neither person makes a mistake.

Schaeffer's software was able to get this answer by searching only a subset of board positions, since some layouts could be considered equivalent, resulting in a mere 10^{14} calculations taking just under two decades. At its peak, Schaeffer had 200 PCs working on the problem although in later years he reduced this to 50 or so.

Schaeffer has a history in checkers-playing, having written Chinook, the first program to win a world champion title in 1994, playing against Marion Tinsley, one of the greats of checkers. After six drawn games, Tinsley's had to withdraw due to illness.

Schaeffer also created a chess program that tied for first place in the 1986 World Computer Chess Championship. Until 2004, he also led a team that developed several strong programs for playing Texas hold 'em poker.

For more gaming defeats of humans by computers, see [Jan 11], [Feb 10], [Oct 5].

CleverPet is a Good Boy
April 29, 2014

On this day, CleverPet Inc. began a Kickstarter [April 28] campaign which reached its

$100,000 goal after just two weeks.

The "CleverPet Hub" is a games console for dogs because, as its creators explained, "Our customer base has literally nothing better to do with their time." The company was founded by neuroscientists Dan Knudsen and Leo Trottier in 2014, so neither of them are barking mad.

The console consists of a plastic dome with flashing lights, speakers (a sub-woofer perhaps?) and a dispenser that gives out dry dog food when a task is completed.

Games include 'catch the squirrel', a light chasing game that challenges a dog to put its paw on a flashing light, and 'pattern plan', which encourages the dog to learn increasingly complex light patterns, but nothing too 'ruff'.

During a startup pitch at CES 2016, CleverPet was the only one to draw cheers from the audience. You could say, they were all 'fur' it.