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Artificial Intelligence at work

by Andrew Griffin

A Japanese insurance company, Fukuoku Mutual Life Insurance, is replacing its staff with an artificial intelligence system. The move, which will see more than 30 people sacked to make way for the computer, is being seen as one of the clearest examples of the coming changes that robots and machines will bring to the workplace.



The computer will be used to calculate how much policyholders should be paid out. For now, the calculations will only be used as a way of saving time by reducing how long it takes to work out payouts. Those calculations will still need to be signed off by a human. But even doing that will allow the company to save about 140 million yen, or £1 million, per year.

Japan hopes that by introducing more robots into its workforce it can address the problem of its shrinking and rapidly ageing population. Artificial intelligence machines are going to be integrated into the work of government from next month, helping ministers look up answers to questions and cutting out the work done by civil servants.

independent.co.uk, 2017



'Eco mermaid' breaks own world record

by Ben Hooper




- 1 Merle Liivand, a swimmer and conservationist known as the 'eco mermaid' broke a Guinness World Record by taking a 26.22-mile swim in the ocean. She spent 11 hours and 54 minutes swimming off the coast of Miami Beach, Fla., to break her previous record for farthest swim with a monofin.
- 2 Liivand, who is originally from Estonia and relocated to Florida 11 years ago, said she felt her previous Guinness World Record in April 2021 was hampered by less-than-ideal marine conditions, leading her to break her own record of 18.6 miles on May 7 of this year.
- 3 "I was born with auto-immune health problems, and I started swimming because my lungs collapsed," Liivand told Guinness World Records. "Today, my intention is to fight for Mother Earth's lungs."
- 4 She said her latest monofin swim was not without its difficulties. "I got stung by jellyfish and kept telling myself that it was not the time to cry," Liivand said. "The moments when I was feeling down, I had to remind myself that I'm a tool between the ocean and humans and I want my message to be heard." Liivand said she also had some positive wildlife interactions during her swim, including some dolphins and a mother manatee with a baby.

upi.com, 2022



Ireland's most venomous spider

- 1 In what is sure to be good news for absolutely no-one, the Noble False Widow spider, already considered the most venomous in Ireland, may be even more toxic than previously believed, according to new research.
- 2 Scientists investigating the venom of the Noble False Widow found that it can potentially deliver an even more toxic bite than was previously believed. They found that of 140 toxins found in its venom, 111 of those were also present in their more famous cousin, the true Black Widow. 
- 3 Originating from the Canary Islands and Madeira, the Noble False Widow spider has since spread throughout Europe, North Africa, West Asia and parts of North and South America. It has become one of the most common species of spiders in parts of Ireland and the UK, favouring urban areas.
- 4 Venomous bites from them are also on the rise, victims of which can expect intense pain and swelling for a few days. In some cases, victims have developed small wounds at the bite site, malaise and persistent stiffness in limbs.
- 5 John Dunbar, doctoral student and lead author of this new study, said that though their work shows the venom of the False Widow spider may be more potent than previously thought, that doesn't mean 6. "In many parts of the world even 'true' black widow bites rarely require medical attention. However, this new discovery will ultimately help medical professionals to diagnose and treat severe False Widow bites."

galwaydaily.com, 2020



The curse of Pompeii

by Madeleine Aggeler

- 1 A good rule of thumb when visiting the historic ruins of unspeakable human tragedy is to 7. This was the lesson one Canadian woman learned after she took bits of mosaic tiles, shards of an amphora vase, and a bit of ceramic wall from Pompeii in 2005.
- 2 The woman, identified only as Nicole, recently mailed the artifacts back to the Archaeological Park of Pompeii, along with a letter explaining what she had been through. Nicole explained that she took the ancient mementos because she “wanted to have a piece of history that couldn’t be bought.” After returning to Canada with them, though, she says she was plagued by misfortune, illness and financial struggles, hardships she attributes in part to the tiles she brought back with her from Italy. “I took a piece of history captured in a time with so much negative energy attached to it,” she wrote. “People died in such a horrible way and I took tiles related to that kind of destruction.”
- 3 Pompeii was an ancient city near Naples that was suddenly buried under nearly 20 feet of volcanic ash when nearby Mount Vesuvius erupted in 79 A.D. The site has been extensively excavated over the years, and is one of the most popular tourist destinations in Italy.
- 4 According to a spokeswoman for the park, Nicole is far from the first visitor to have returned stolen, and allegedly cursed, artifacts: “Over the years, around a hundred visitors have sent back items they stole from Pompeii, like tiles or pieces of plaster, along with letters claiming to have derived only bad luck from the shards.”



thecut.com, 2020



Who are your friends?

by Olivia Petter

- 1 When it comes to friendships, it's important to have some things in common. However, while enjoying the same films and having similar taste in restaurants might seem important, the real test of a strong friendship could lie in your genetics. This is because friends are more genetically similar than strangers, claims a new study published in the National Academy of Sciences.



- 2 After carrying out a series of genetic comparisons between pairs of friends, the researchers found a lot of genetic similarities between them, far more than between pairs who didn't know each other. They also found that friends were on average around two-thirds as genetically similar as married couples. This might be because people are drawn to those with whom they have shared characteristics such as similar backgrounds, levels of education or being of a similar height and/or weight.
- 3 Another explanation they suggest is that people tend to form friendships within shared social environments. 11, they may attend the same school or live in the same community. This is known as social structuring, the authors write. The two explanations might also complement one another. However, lead author Stanford professor Benjamin Domingue concluded that the latter, which might be more subconscious, could be more influential in forming friendships.
- 4 "Are individuals actively selecting to be around people who are like them, or is it due to impersonal forces, such as social structures, that we all are affected by?" he asked. "Our evidence, with respect to friends, suggest that it's largely the effect of shared social environments."

The Independent, 2018



The day my house went Cillit BANG!



- 1 Ronald Cox hoped cleaning up the glue he spilled on the kitchen floor would be a relatively simple job. His local hardware store recommended Cillit Bang, the all-purpose cleaner which – according to the TV commercials – has almost miraculous powers. But after 75-year-old Mr Cox applied it to his floor tiles, he found the product wasn't quite having the desired effect. So to finish off the task, he used an eggcup full of petrol on the stains. This turned out to be a mistake 13 the cocktail of fluids gave off vapours which were then ignited by the pilot light in his living room boiler.
- 2 The ensuing explosion ripped through the semi-detached property, blowing out one of the front windows, bringing down part of the kitchen ceiling and causing structural damage to an inside wall. 14, Mr Cox, still in the kitchen, was unhurt by the explosion. Indeed, because he is partially deaf, he wasn't even aware of the magnitude of the blast until neighbour Dave Micheson rushed around and extinguished a fire that had started in the living room.
- 3 Mr Micheson said: "We just heard an almighty bang." He found Mr Cox standing shocked but unhurt in the kitchen. He called the fire brigade and officers were swiftly on the scene to check that the house was safe. Mr Cox, who suffers from angina, was given oxygen before being taken to hospital as a precaution.
- 4 Following Friday's drama he has now returned home to survey the damage to the property in Scunthorpe. "I am 15 there was nobody else in the house," the pensioner said yesterday. Vowing never to use fuel again as a cleaner, he added: "I only had an eggcup full of petrol."
- 5 Fireman Stuart Spence said: "The explosion has totally devastated his house – he is a very lucky man to survive this. The advice is very simple – the place for petrol is outside in motor vehicles. There are many products available which 16, so nobody should ever try to use petrol as a cleaner."

Daily Mail, 2006



A 2nd-Grade Class and a Science Experiment

by Kenneth Chang



- 1 Back in 2015, students in Maggie Samudio’s second-grade class at Cumberland Elementary School in West Lafayette, Indiana, were contemplating an offbeat science question: If a firefly went to space, would it still be able to light up as it floated in zero gravity?
- 2 Ms. Samudio said she would ask a friend of hers, Steven Collicott, an aerospace professor at nearby Purdue University, for the answer. “He teaches a class on zero gravity, and he would be the perfect person to answer the question.” Ms. Samudio sent an email. A day later, Dr. Collicott replied, and Ms. Samudio was surprised by his answer: “Instead of guessing, why not 18”
- 3 Blue Origin, a rocket company, was planning to offer the ability for schools to fly small experiments on its New Shepard suborbital spacecraft for as little as \$8,000. Dr. Collicott, who had sent several fluid flow experiments on New Shepard launches, pointed Ms. Samudio and her second-graders to Blue Origin. “For half the cost of high school football uniforms we were able to do a space experiment,” Dr. Collicott said. “So really any school district now that affords football, and there are many of those, can afford spaceflight.”
- 4 Cumberland Elementary has not been the only school to see the value of paying for an experiment aboard the New Shepard rocket. A Montessori middle school in Colorado sent up a sensor package designed and programmed by the students. An Alabama high school launched an experiment to test temperature fluctuations in microgravity. And this past December, an elementary school in Ohio sent up baby jellyfish.



- 5 Following Dr. Collicott's suggestion, Ms. Samudio's children at Cumberland got to work, collaborating with Purdue students in Dr. Collicott's classes. "For the next two years, I had future aeronautical engineers in my second-grade classroom teaching mini-lessons on basic principles of flight and propulsion as well as the basic principles of 'firefly' chemistry," Ms. Samudio said.
- 6 On Dec. 12, 2017, the firefly experiment was on board New Shepard. It did not contain any actual fireflies. "It appears when scared, fireflies don't light up," Dr. Collicott said. "And we were concerned that the boost would scare them. And then there's also the problem that I don't know how to keep fireflies alive and keep them happy." Instead, the apparatus replicated the chemistry of how fireflies generate light, with syringes mixing the glow-creating substances together as the capsule reached the top of the trajectory more than 60 miles above West Texas. A video camera recorded what happened. Dr. Collicott attended the launch, and two days later, was back in Ms. Samudio's classroom presenting the results. The bugs can indeed glow in space.
- 7 "Several parents told me that the simple question of asking their child what they had done in school that day exploded into amazing family conversations, extra reading and research, and the contemplation of future personal pursuits and goals," Ms. Samudio said.

nytimes.com, 2020



Wartime letters recovered from the SS Gairsoppa



- 1 The fragments of a 1941 love letter to a woman named Iris, found nearly three miles under the ocean in a shipwreck, have been painstakingly pieced together by experts, 80 years after it was posted. “Look after yourself my darling, not only for your own sake for mine also,” wrote the unknown serviceman stationed in the Waziristan region, now part of Pakistan.
- 2 The letter is one of 717 that were never delivered by the cargo ship, the SS Gairsoppa, which was destined for the US. The ship was torpedoed off the coast of Ireland by a German U-boat on 16 February 1941. The ship lay nearly three miles deep until 2011, when Odyssey Marine Exploration, a US firm that won the contract from the British government in 2010 for salvage, discovered it. The company recovered more than 100 tonnes of silver from the wreck, along with the letters. The missives had been sealed within the hold under tons of mailbags and sediments, protected from light, currents, heat and oxygen, and stayed mostly intact.
- 3 “It’s an environment without oxygen so the corrosion is slowed down completely. And because there were so many mailbags together, a massive percentage of the whole post office mail would have been destroyed, but a central part of all this big bundle of mailbags has survived,” said conservator Eleni Katsiani. While a handful of the more complete letters from the ship were displayed in an exhibition at the Postal Museum in London, the museum’s archive team have been working on some of the more damaged specimens over recent months, piecing together fragments to reveal glimpses of wartime lives.



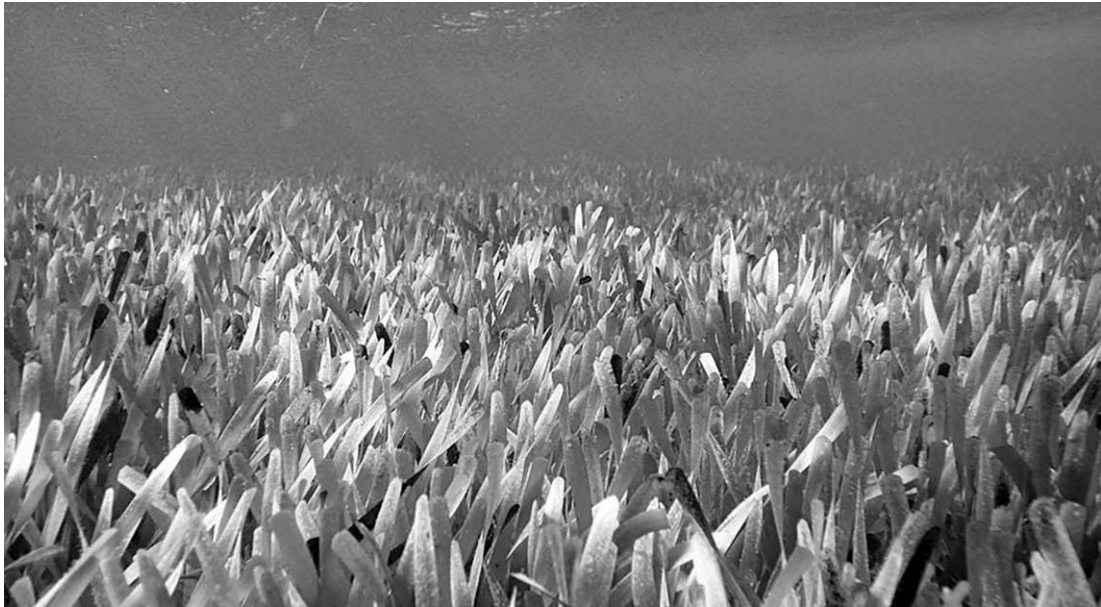
- 4 The letters were immediately freeze-dried after the discovery, to stop the decay process. They were also washed in freshwater to get the salt out, said Katsiani, “an intense and 24-1 process for each letter but one that secured their current condition and therefore worth all the hours of work.” The Postal Museum’s senior paper conservator, Jackie Coppen, came across the letter to Iris, which she described as “a tender testament to love and longing, written on incredibly thin and fragile paper. Like many of the letters, it has suffered, but despite 24-2 areas, enough remains to appreciate the sentiments,” Coppen said. “It talks of hope and the future, it professes dreams of embracing tightly and being together again. It evokes a romantic past, when the handwritten word sent through the post was often the only means of 24-3 long-distance relationships.”
- 5 Under half of the letters have now been worked on by the conservators, giving, as the museum puts it, “insight into the lives of ordinary people, living in extraordinary circumstances during the Second World War.” “There were missionaries, business people, soldiers and generals writing, ordinary travellers who had gone to India,” said Katsiani. “The letters are talking about life, love, faith, business – and the weather, of course.” “It feels somewhat touching and appropriate to be uniting these letters on the 80th anniversary of the ship’s sinking,” said Coppen. “It is inevitable that while piecing the letters together I have come to form an intimate relationship with them – they are mesmerising and capture a remarkable snippet of life during a most significant period.”

theguardian.com, 2021



Australian Sea Plant

by Margaret Osborne



- 1 Scientists have discovered the world's largest plant – a seagrass in Australia that grew more than 70 square miles by repeatedly cloning itself. The plant, called Poseidon's ribbon weed or *Posidonia australis*, is about 4,500 years old, according to a study published in *Proceedings of the Royal Society B*.
- 2 "It's the largest known example of a clone in any environment on Earth," co-author Elizabeth Sinclair from the University of Western Australia tells *New Scientist's* Alice Klein. It is "arguably the world's largest living organism," writes Kate Golembiewski for the *New York Times*.
- 3 As part of a survey, researchers collected samples from ten seagrass meadows across Western Australia's Shark Bay, about 500 miles north of Perth, and studied 18,000 genetic markers to test how many different plants grew in the area.
- 4 [...]
- 5 "Polyploid plants often reside in places with extreme environmental conditions, are often sterile, but can continue to grow if left undisturbed, and this giant seagrass has done just that," Sinclair says. "Even without successful flowering and seed production, it appears to be really resilient, experiencing a wide range of temperatures and saltiness plus extreme



high light conditions, which together would typically be highly stressful for most plants.”

- 6 In 2010 and 2011, a heatwave hit Western Australia, damaging Shark Bay’s seagrass meadows. Though the ribbon weed was impacted, it has already begun to recover, the study shows. “This is somewhat surprising, as this seagrass does not appear to reproduce sexually – which would normally be the best way to adapt to changing conditions,” write the researchers in *The Conversation*. The scientists suspect that the seagrass is extremely well-adapted to its local environment, on the edge of its species’ range. In places like these, species that reproduce by cloning themselves rapidly and repeatedly may adapt better and more quickly than species that reproduce sexually, which can be a slower process.
- 7 Seagrasses help purify water, are carbon sinks and host a large number of other species, which is why they are important to protect, Marlene Jahnke, a biologist at the University of Gothenburg in Sweden who was not involved in the research, tells *The Times*.

smithsonianmag.com, 2022



Barbie Queen

- 1 Ever wanted to hang out with a tiny version of the Queen? Of course you have. Now, you won't have to make do with a paper cut-out, as Mattel has unveiled a special Queen Elizabeth II Barbie, to be released on the Queen's 96th birthday on Thursday.¹⁾
- 2 In celebration of the Platinum Jubilee, the doll version of the Queen isn't wearing one of her usual brightly coloured twinsets, but instead a formal ivory gown, a tiara (modelled on the one the Queen wore on her wedding day), and a blue ribbon adorned with decorations of order. The pink ribbon on the doll's sash gives a nod to the one given to the Queen by her father George VI and the pale blue one refers to the ribbon handed down from her grandfather George V. Spot the little silver brooch pinned underneath? That represents the Garter Star, the insignia of the highest order of chivalry in the UK.
- 3 The Queen doll forms part of Barbie's Tribute Collection, which launched in 2021 to celebrate 'visionary individuals with an outstanding impact and legacy within society'.
- 4 Alas, the doll version of the Queen hasn't been given her own tiny corgi (sort it out, Mattel) but it will be sold in a box inspired by Buckingham Palace, made from a 3D ornate die-cut border framing the figure, and an inner panel showing the throne and the red carpet of the throne room. Snazzy. It's all based off a portrait commissioned to mark her 60th year on the throne back in 2012.
- 5 No word yet on the price for this fun bit of memorabilia, but we do know the doll will be sold at Harrods, Hamley's, Selfridges, John Lewis, and Amazon.




metro.co.uk, 2022

noot 1 Deze pop en deze tekst zijn verschenen voordat Koningin Elizabeth II is overleden.



‘Third Eye’ for ‘Smartphone Zombies’

- 1 A ‘third eye’ has been created to prevent “smartphone zombies” from walking into things while focused on their screens. South Korean industrial designer Paeng Min-wook, 28, says the robotic eyeball can be strapped to a person’s forehead, allowing them to browse injury-free. He said the device was a “satirical solution” which he hoped would make people “recognise the severity of their gadget addiction and look back at themselves”. The device – called The Third Eye – senses when the user’s head has been lowered to look at the phone and it then opens its translucent eyelid. When the person comes within one or two metres of an obstacle, The Third Eye beeps to warn them of danger. Mr Paeng said: “As we cannot take our eyes off our smartphones, the extra eye will be needed in future.”
- 2 Mr Paeng, a postgraduate student in innovation design at the Royal College of Art and Imperial College London, has trialled the device around Seoul. Among those who saw it was resident Lee Ok-jo, who said: “I thought he looked like an alien with an eye on his forehead. These days many young people can get into accidents while using their mobile phone. This would be good for them.”
- 3 The Third Eye uses a gyro sensor to measure the angle of the user’s neck and an ultrasonic sensor to calculate the distance between the robotic eye and obstacles. The sensors are both linked to an open-source single-board microcontroller with a battery pack.

news.sky.com, 2021



Why Square Hot Dogs Could Save Lives

The American Academy of Paediatrics has recommended that hot dogs be redesigned to make them, well, less sausage-shaped. Their round form makes them a perfect plug for a child's airway. Other high-risk foods highlighted by the academy included grapes, nuts, chunks of vegetables and items such as hard sweets, chewing gum and marshmallows.

The academy wants food manufacturers to put choking warning labels on their products, in the way that toy manufacturers are required to. They hope this will decrease the number of choking incidents.



According to Stephen Cadwallader, a food technical consultant, hot dogs could easily be redesigned in any number of ways: square, circular or “pretty much any shape you wanted. But then would it be a hot dog as we know and love it?”

But if there is no market for a flat hot dog, what is the answer? “I think people could just cut them into bits, that’s what we do for our two kids,” says Cadwallader.

The Guardian, 2010



Beautiful Skellig Michael



- 1 ONE OF Ireland's most spectacular landmarks has gained international recognition for its sheer beauty. Skellig Michael, is a UNESCO World Heritage site and popular tourist site which became even more famous than before when it was featured in the Star Wars movies 'The Force Awakens' and 'The Last Jedi'.
- 2 Located on the Great Skellig just off the gorgeous Dingle Peninsula, the historic site is home to an ancient monastery and stone structures which have survived over the centuries despite being battered by the elements at the edge of the Atlantic ocean. Skellig Michael is also a wildlife preserve home to hundreds of Puffins, who are so common that when the Star Wars series was filming, producers were forced to create a new monster, Porgs, as they could not edit the animals out and could not interfere with their breeding grounds.
- 3 Now international travel magazine *Big Seven Travel* has named the historic site as one of the most beautiful movie locations in the world. Travel writers took into account the 'wow-factor' of the setting, its importance and impact on the scene, overall fame of the movie itself and unique features.
- 4 Skellig Michael joins such iconic locations as Salzburg, as featured in 'The Sound of Music', Skiathos in Greece from 'Mamma Mia', and Matamata in New Zealand, aka Middle Earth from 'The Lord of the Rings' series in the travel magazine's list of the 50 most beautiful movie locations in the world.
- 5 It is far from the first time that *Big Seven Travel* recognised Ireland's spectacular beauty – just last week, a remote Irish beach was named one of the very best in the world, beating out strands in Fiji and Hawaii among others.

irishpost.com, 2021



ENGINEER YOUR FUTURE



A major new, free gallery looking at how engineers change the world will open at the Science Museum on Friday 23 June 2023. Visit our interactive exhibition for teens thinking about their futures, where challenges, games and films will help you understand what engineers do – and find out whether this could be a job for you.

PLAY RUGGED ROVERS

Design a space rover that will travel the furthest across a challenging alien landscape full of jumps, boulders and slopes. Can you problem-solve and beat your friends' creations?

TEST YOUR BRAIN

Play our game to build and test systems inspired by some seriously complex engineering, from electrical grids to rail networks and baggage handling systems.

WATCH OUR SHORT FILM

In *We Engineer* you'll find out how engineers make the best better at some of the country's most hi-tech test labs, and see their cutting-edge test models on display.

SURPRISE YOURSELF

Play *FutureVille* to explore a city of the not-too-distant future and meet the women and men who engineer in places you didn't expect – from hospitals to Hollywood.

MORE ABOUT ENGINEERING

Take a look at our hand-picked links for information, activities and guidance that will help you discover more about engineering. Get inspired with some hands-on activities, find out more about engineering or kick-start your engineering career.

sciencemuseum.org.uk, 2023

