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TECHNICAL NEWS

In This Issue..

- Alumni Section
- Bug in iOS can break iPhone Wi-Fi using rogue hotspot name
- Amazon Covid test kit now available online
- Microsoft will end Windows 10 support in Oct 2025
- Samsung aims to expand 7th gen V-NAND chip for heavy workloads
- Google team uses AI to create next-gen chips faster than humans
- Google is searching for a new method to classify skin tones to curb bias in products
- Swiggy, Anra Tech to launch first BVLOS drone delivery trials for food
- Airtel announces partnership with Tata group for 5G network solutions
- National Internet Exchange announces personalized email for .IN users

Alumni Section

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TECHNICAL NEWS

AWS Redshift

What is aws?
· Amazon web service is a secure cloud service platform from amazon.
· Aws service can be used to create and deploy any application in the cloud.
· It provides services over cloud and with aws, you only pay for what you use.

What is amazon redshift?
Aws redshift is a cloud-based petabyte-scale data warehouse service offered as one of amazon's ecosystem of data solutions. Based on postgresql, the platform integrates with most third-party applications by applying its odbc and jdbc drivers.
Redshift delivers incredibly fast performance using two key architectural elements: columnar data storage and massively parallel processing design.

Columnar data storage: many databases store their data by rows, which look like a spreadsheet. All the data about a record is stored in one row. By contrast, a columnar database stores its data by columns, with the data for each column stored together.
Massively parallel processing design :redshift delivers fast query performance by parallelising queries across multiple nodes. This means that while a query is running, all the nodes in the cluster are contributing.
The solution has quickly become an integral part of the big data analytics landscape through its ability to perform sql-based queries on large databases containing a mix of structured, unstructured, and unstructured data.

Key benefits
· faster performance
· cost effective
· easy setup, management, deployment
· scalable
· secure

Bug in iOS can break iPhone Wi-Fi using rogue hotspot name

A bug has been discovered in iOS that can disable an iPhone's ability to connect to Wi-Fi hotspots if it attempts to initially connect to a hotspot with a specific name that breaks the function. Security researcher Carl Schou gave a personal Wi-Fi hotspot a name comprising special characters --"%p%s%s%s%s%n".

On trying to connect to the hotspot, Schou discovered the iPhone simply couldn't connect to it at all, and later discovered that it disabled Wi-Fi connectivity completely on the device, Apple Insider reported. Attempts to connect to other hotspots failed, with the issue continuing to manifest after changing the hotspot's SSID and rebooting the iPhone, according to Bleeping Computer.

The issue was also confirmed by others testing out the same SSID name separately. Tests also point to it being a problem just with iPhones, as Android devices appear to connect to the unusually-named access point without issue.

Other researchers examining the phenomena believe it is an issue with input parsing, in which the percentage sign at the start may be misinterpreted by iOS as a string-format specifier, and the characters following may be a variable or a command rather than plain text. To fix the problem on affected iPhones, users have to reset their iOS network settings.

The discovery is reminiscent of text messages that contained strings and special characters that could cause problems for iPhones and loads, the report said.

For example, April's "text bomb" forced iPhones to crash if a flag emoji and a specific Sindhi language character were viewed in an incoming notification, it added.

Amazon Covid test kit now available online

E-commerce major Amazon has started selling its own test kits for Covid-19. The test kit is on sale for $39.99 on the e-commerce platform and has one-day shipping through Prime in some areas of the US, the Verge reported.

Results from the test will appear on an Amazon diagnostics website, originally designed for use by Amazon employees.

To use the test, a person needs to take a swab from his/her own nose at home and place it in a box with a prepaid shipping return label. The swabs are then sent to a centralized lab.

Amazon got the US Food and Drug Administration's approval on its Covid-19 test kit in March and planned to use it for its onsite employee testing programme.

Amazon also offers a Covid-19 testing kit made by the genomics company Dexterity and a rapid 10-minute testing kit made by Quidel. They sell for $99 and $24.95, respectively, the report said.

The in-house Covid-19 test kit is the latest in Amazon's expansion into the healthcare segment. In March, the company had started offering its telehealth and at-home healthcare program to other employers.

It is also offering six-month prescriptions for common medications starting at $6 through its Amazon Pharmacy programme, it added.

TECHNICAL NEWS

Microsoft will end Windows 10 support in Oct 2025

A s the next version of Windows is expected to be unveiled on June 24, Microsoft has revealed that it will end support for Windows 10.

The company quietly announced the news in a support page update, as spotted by Thurrott.
Previously, the page noted when Microsoft would end support for certain versions of Windows 10, reports Engaged. It now states Microsoft started supporting Windows 10 Home and Pro on July 29, 2015 and reveals the operating system's "retirement date".

The end-of-support timeline puts the Windows 10 lifecycle at a hair over 10 years, similar to previous iterations of the OS.

Microsoft recently cancelled Windows 10X, which was initially going to be for dual-screen devices. It said it would bring some features planned for that OS into the standard version of Windows.

"Soon we will share one of the most significant updates to Windows of the past decade to unlock greater economic opportunity for developers and creators," Microsoft CEO Satya Nadella said recently.

The executive went on to say he's been personally testing the latest iteration of the OS for the past several months.

TECHNICAL NEWS

Samsung aims to expand 7th gen V-NAND chip for heavy workloads

Samsung Electronics aims to expand the use of its seventh generation V-NAND chip solutions, a senior executive said on Tuesday, as the South Korean tech giant eyes to bolster its technology prowess in the memory sector.

In the second half of the year, the world's leading memory chip maker will introduce a new consumer solid state drive (SSD) product based on its seventh generation V-NAND chip that boasts the smallest cell size yet in the industry, according to Song Jai-hyuk, head of Samsung's flash memory products.

"The company's solution will be optimised for multitasking huge workloads, such as simultaneous 3D modelling and video editing," Song said in an editorial posted on the company's website.

"Samsung is also planning to expand the use of its 7th generation V-NAND to data center SSDs." V-NAND refers to Samsung's NAND flash solution vertically stacking memory cells in a 3D structure.

Samsung is the first chipmaker to commercialize such a memory solution, having unveiled its first 3D V-NAND in 2013, reports Yonhap news agency. A NAND flash is a type of non-volatile memory that stores data even if there is no power.

In the NAND industry, more memory cell layers in a chip mean better capacity with enhanced bit density, but as the product's height gets taller, Song said the company came up with solutions to reduce the cell volume.

Song said Samsung has already secured a working chip of its eighth generation V-NAND solution featuring over 200 layers and plans to introduce the product after analyzing market situations and consumer demand. Samsung is the world's largest NAND flash vendor with a 33.5 percent revenue share in the first quarter, according to market researcher TrendForce. Its NAND business logged US$4.97 billion in the first three months of 2021, up 7 percent from a quarter earlier.

TECHNICAL NEWS
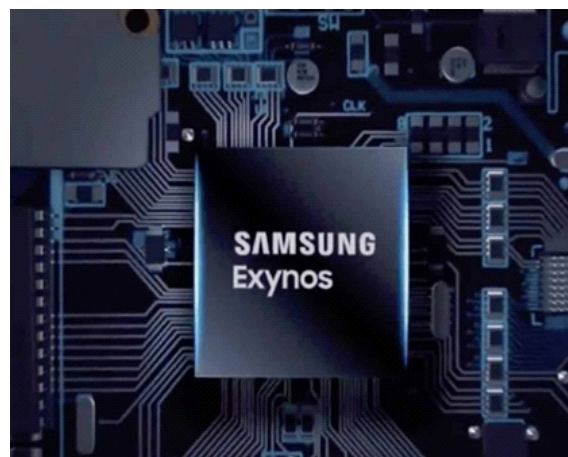
Google team uses AI to create next-gen chips faster than humans

A s the world faces acute semiconductor or chip shortage, a team of Google researchers is working on to design next-generation artificial-intelligence (AI) chips, and has created an AI model that allows chip design to be performed by artificial agents with more experience than any human designer.

The new AI method utilises past experience to become better and faster at solving new instances of the problem.

"Our method was used to design the next generation of Google's artificial intelligence (AI) accelerators, and has the potential to save thousands of hours of human effort for each new generation," the team wrote in a paper appeared in the scientific journal Nature.

"Finally, we believe that more powerful AI-designed hardware will fuel advances in AI, creating a symbiotic relationship between the two fields", they noted.

In about six hours, the model could generate a design that optimizes the placement of different components on the chip.

To achieve this, the Google team used a dataset of 10,000 chip layouts for a machine-learning model, which was then trained with reinforcement learning.

"Our RL (reinforcement learning) agent generates chip layouts in just a few hours, whereas human experts can take months," Anna Goldie, research scientist at Google Brain, who took part in the research, said in a tweet. "These superhuman AI-generated layouts were used in Google's latest AI accelerator (TPU-v5)!" She added.

Google has used the model to design its next generation of tensor processing units (TPUs), which run in the company's data centres to enhance the performance of various AI applications.

Chip floor-planning is the engineering task of designing the physical layout of a computer chip. Despite five decades of research, chip floor planning has defied automation, requiring months of intense effort by physical design engineers to produce manufacturable layouts.

"In under six hours, our method automatically generates chip floor plans that are superior or comparable to those produced by humans in all key metrics, including power consumption, performance and chip area," according to the Google AI team.
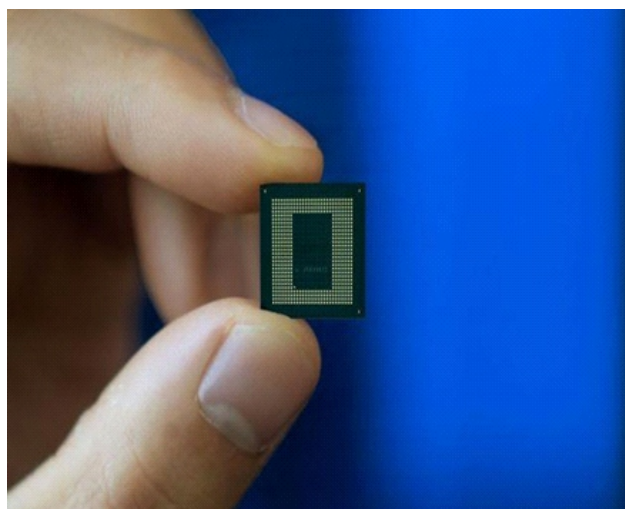
Google is searching for a new method to classify skin tones to curb bias in products

Alphabet Inc's Google told Reuters this week it is developing an alternative to the industry-standard method for classifying skin tones, which a growing chorus of technology researchers and dermatologists says is inadequate for assessing whether products are biased against people of color.At issue is a six-color scale known as Fitzpatrick Skin Type (FST), which dermatologists have used since the 1970s. Tech companies now rely on it to categorize people and measure whether products such as facial recognition systems or smartwatch heart-rate sensors perform equally well across skin tones.

In response to Reuters' questions about FST, Google, for the first time and ahead of peers, said that it has been quietly pursuing better measures.

"We are working on alternative, more inclusive, measures that could be useful in the development of our products, and will collaborate with scientific and medical experts, as well as groups working with communities of color," the company said.

Companies know their products can be faulty for groups that are under-represented in research and testing data. The concern over FST is that its limited scale for darker skin could lead to technology that, for instance, works for golden brown skin but fails for espresso red tones.

The issue is far from academic for Google. When the company announced in February that cameras on some Android phones could measure pulse rates via a fingertip, it said readings on average would err by 1.8% regardless of whether users had light or dark skin.

The company later gave similar warranties that skin type would not noticeably affect results of a feature for filtering backgrounds on Meet video conferences, nor of an upcoming web tool for identifying skin conditions, informally dubbed Derm Assist. Those conclusions derived from testing with the six-tone FST.

Swiggy, Anra Tech to launch first BVLOS drone delivery trials for food

Anra Technologies and Swiggy have said that stakeholders from Ministry of Defence, Directorate General of Civil Aviation and Ministry of Civil Aviation awarded final clearances for a consortia to start trials for beyond visual line of sight (BVLOS) operations in India. Months of planning, risk assessments, air traffic control integration, training, equipment preparation, and coordination culminated with Anra's flight team launching its first sortie.

For the next several weeks, the flight team will conduct BVLOS food and medical package deliveries in Etah and Rupnagar districts using Anra SmartSkies technology. Out of the selected participants in the programme, Anra is the only UAS technology provider approved by the Ministry of Civil Aviation to lead two consortia as part of this pioneering initiative.

One consortium consists of Anra along with its partners Swiggy, Indian Institute of Technology in Ropar and BetterDrones, a drone service provider which will focus on food delivery. The second consortium includes Anra and the Indian Institute of Technology in Ropar, and will focus on medical deliveries.

"We are excited about the potential that drones offer and look forward to trials on BVLOS operations for use case of food delivery," said Shilpa Gnaneshwar, Principal Programme Manager at Swiggy.

The on-demand delivery platform connects consumers to over one lakh restaurant partners and stores in over 500 cities. Anra Technologies is an international provider of airspace management solutions for unmanned aircraft operators and airspace managers.

TECHNICAL NEWS

Airtel announces partnership with Tata group for 5G network solutions

Leading telecom firm Bharti Airtel on Monday (June 21, 2021) announced a strategic partnership with the steel-to-software conglomerate Tata Group for 5G Network solutions. Based on open radio access network (ORAN) technology, the plan is to roll out the solution initially for India and subsequently for exports.

Bharti Airtel has roped in Tata Counsaltany Services(TCS) for its system integration capability. The ORAN technology requires expertise in integration of disparate elements of hardware and software based on an open-source technology.

The earlier technology, provided by incumbent telecom gear makers like Ericsson and Nokia, was based on proprietary technology with hardware and software fused into one offering.

Under ORAN, telecom operators can buy their hardware as well as software from multiple players, thus increasing competition and reducing overall costs of the network. But to enable this, telcos need a system integrator for powering the network.

The Tata group has also built state of the art ORAN-based radio as well as standalone and non-standalone core, which control the network. The ORAN network is increasingly dependent on software, giving it more flexibility as well as efficiency. Reliance, which also bought Radisys in the US, has used it as a base for software solutions required for 5G.

The new alliance has an advantage over Jio in the global market as Bharti Airtel already either has its own networks or holds stake in telecom ventures across many geographies including Africa, Bangladesh and Sri Lanka. As for TCS, it services numerous telcos around the world.

There are other JVs too. For instance, the group has signed up with Dixon Technologies for manufacturing a range of telecom products under the production-linked incentive (PLI) scheme.

An internal R&D team will be at work for system integration and technology collaboration.

National Internet Exchange announces personalized email for .IN users

The National Internet Exchange of India (NIXI) today announced that it will provide users a personalised email services with 10 GB space for .IN users. A user may approach www.registry.in to get a free personalized e-mail.

"This is perhaps the most unique offering being made by an CCTLD, in an attempt to take the .IN domain to a much larger proportion," said Ajay Prakash Sawhney, secretory, MeitY. Sawhney was talking at the celebrations of the completion of 18 years of NIXI.

NIXI, the first Internet Exchange of the country, facilitates peering of ISPs among themselves for the purpose of routing the domestic traffic within the country, instead of taking it all the way to the US/abroad, thereby resulting in a better quality of service and reduced bandwidth charges for ISPs by saving international currency on International Bandwidth. NIXI is also the .IN Registry managing India's country code top-level domain (ccTLD) -.IN. NIXI also manages the National Internet Registry of the country delegating Internet Protocol addresses (IPv4 and IPv6) and Autonomous System numbers to the Indian Affiliates.

India has surpassed 2.7 million registrations of .in domain, making India the third-largest nation in Asia in the country-centric, top-level domain growth, said NIXI.

Further, NIXI is also focusing on promoting local content with its .भारत initiatives. Starting with five languages, the. भारत domain is now available in all 22 official languages. India is the only country to provide domain in 22 official Indian Languages.

Sawhney also pointed out that as the country moves towards becoming a digital economy the focus of the government will be to see how users can get more access to government services digitally.

Sawhney also stressed on the need of skilling students in digital skills for which the MeitY has launched Future Prime Skills, where with industry partners a large number of high-quality courses in digital skill are being made available for free.

TECHNICAL NEWS