

AI helps sight restoration

Google is partnering with Madurai-based Aravind Eye Hospital on an AI-based algorithm to screen diabetic retinopathy and detect the early onset of blindness.

Remember those colorfully-lit weighing machines on railway platforms that would take a coin and give out a small cardboard ticket with the person's weight and fortune? The Chief Medical Officer at Madurai's Aravind Eye Hospital (AEH), Dr. Ramasamy Kim, uses this analogy to explain how people could get a preliminary eye check-up done instead of visiting an ophthalmologist in the future.

"In one look, the machine will predict the condition of the retina and advise on the next step of action in seconds," he says.

"The impact," he says, "will be seen in patient care and diabetes management." He imagines a scenario where the scope of algorithms on smartphones will not require the consumer to even go near a machine. "People can take selfies of the eye on their phone cameras and have instant access to ophthalmic care."

The two organizations have been working on an automated tool that could detect diabetic retinopathy (DR), the second leading cause of blindness. DR is a condition where lesions develop in the retina of the eye of those living with long-standing diabetes. It puts them at risk of losing vision if left untreated.

"If the captured image of the eye shows negative for DR, then the person will be advised to rescreen



after 12 months. And in case of a positive result, the person would be asked to see an ophthalmologist for further evaluation and immediate treatment," explains Dr. Kim.

When a person can avoid hospital visits up to the stage of detection of DR, it may appear healthcare is lending itself to the risk of machine calculations instead of relying on human knowledge and experience. But Dr Kim argues in favour of using technology effectively and efficiently in times when computers are available everywhere and to everybody but healthcare is not.

The World Health Organization estimates 71 million Indians live with diabetes and at least 20% of them suffer from DR. Of these, 20% are not even aware of their eye condition because they haven't been in to a doctor for examination. Those who come to an ophthalmologist get their retinal images graded manually in what is today a time-consuming process taking from few hours to few days.

Though the challenge of a machine may lie in any false negative and deprive a patient of consultation, Dr. Kim says AI is superior to anything that he has seen in DR screening. "The machine is able to see something beyond the human eye," he says, "and as a doctor, my only interest is in getting a greater number of patients at an early detected stage for successful treatment."

Will AI make doctors obsolete?

Artificial intelligence technology has the potential to be more accurate than doctors at making diagnoses and performing surgical interventions as they simulate human intelligence by learning, reasoning, and self-correction., says Jörg Goldhahn, MD, MAS, deputy head of the Institute for Translational Medicine at ETH Zurich.

Increasing amounts of health data, from apps, personal monitoring devices, electronic medical records, and social media platforms are being brought together to give machines as much information as possible about people and their diseases.

Machine learning is also not subject to the same level of potential bias seen in human learning that reflects cultural influences and links with particular institutions.

While the ability to form relationships with patients is often presented as an argument in favor of human doctors, this may also be their "Achilles heel," Goldhahn points out. Trust is important to patients but machines and systems can be more trustworthy than humans if they can be regarded as unbiased and without conflicts of interest.

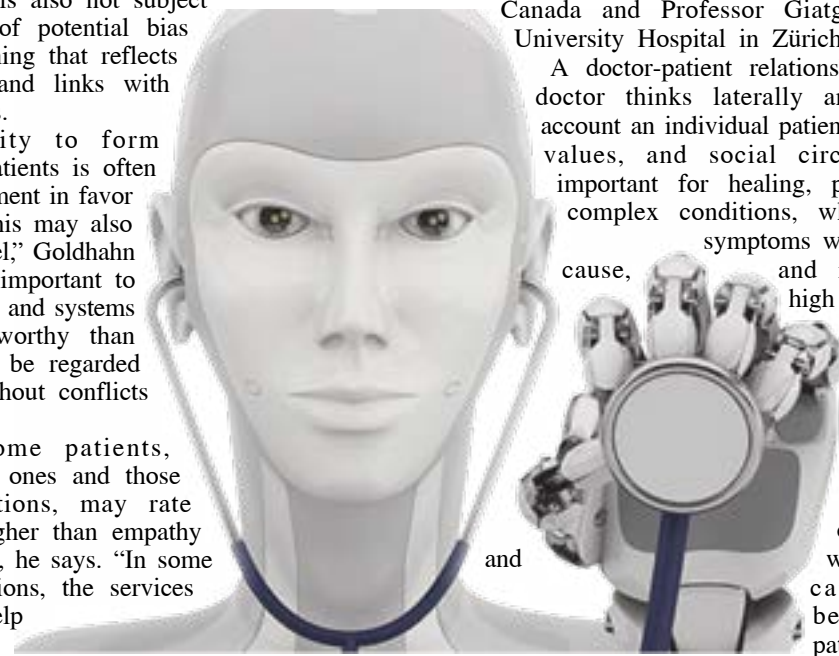
Furthermore, some patients, particularly younger ones and those with minor conditions, may rate correct diagnosis higher than empathy or continuity of care, he says. "In some very personal situations, the services of a robot could help patients avoid feeling

shame."

The key challenges for today's healthcare systems are rising costs and insufficient numbers of doctors. "Introducing AI-driven systems could be cheaper than hiring and training new staff, Goldhahn says. "They are also universally available, and can even monitor patients remotely." Doctors as we now know them will become obsolete eventually." But doctors can relate to the patient as a fellow human being and can gain holistic knowledge of their illness as it relates to the patient's life, says Vanessa Rampton at the McGill Institute for Health and Social Policy in Montréal, Canada and Professor Giatgen Spinaz at University Hospital in Zürich, Switzerland.

A doctor-patient relationship where the doctor thinks laterally and takes into account an individual patient's preferences, values, and social circumstances is important for healing, particularly for complex conditions, when there are symptoms with no obvious cause, and if there is a high risk of adverse effects.

Feeling they've been heard by someone who understands the seriousness of the problem whom they can trust can be crucial for patients.



Game changing skin sensor for hydrocephalus

Most people simply take ibuprofen when they get a headache. But for someone with hydrocephalus - a potentially life-threatening condition in which excess fluid builds up in the brain - a headache can indicate a serious problem that can result in a hospital visit, thousands of dollars in scans, radiation and sometimes surgery.

A new wireless, Band-Aid-like sensor developed at Northwestern University could revolutionize the way patients manage hydrocephalus and potentially save millions of dollars.

Hydrocephalus can affect adults and children. Often the child is born with the condition, whereas in adults, it can be acquired from some trauma-related injury, such as bleeding inside the brain or a brain tumor.

The current standard of care involves the surgical implantation of a straw-like catheter known as a 'shunt,' which drains the excess fluid out of the brain and into another part of the body. Shunts have a nearly 100 percent failure rate over 10 years.

When a shunt fails, the patient can experience headaches, nausea and low energy. A patient experiencing any of these symptoms must visit a hospital because if their symptoms are caused by a malfunctioning shunt, it could be life-threatening. Once at the hospital, the patient must get a CT scan or an MRI and sometimes must undergo surgery to see if the shunt is working properly.

The new sensor allowed patients in the study to determine within five minutes of placing it on their skin if the fluid was flowing through their shunt. The soft and flexible sensor uses measurements of temperature and heat transfer to non-invasively



tell if and how much fluid is flowing through.

A very small rechargeable battery is built into the sensor. The device is Bluetooth enabled so it can talk to a smartphone and deliver the readings via an Android app. The sensor advances concepts in skin-like "epidermal electronics," which the Rogers Research Group has been working on for nearly a decade.

It uses a thermal transport measurement, which means the sensor uses tiny amounts of thermal power to minimally increase the temperature of the skin.

If the shunt is working and the excess cerebral spinal fluid is draining properly, the sensor will measure a characteristic heat signature. Similarly, if there is no flow because the shunt has malfunctioned, the sensor will be able to quickly indicate that through heat flow measurements.

Numerical simulations of heat flow allowed the team to better understand the system and informed the final sensor design.

New framework pushes the limits of high-performance computing

Large-scale, advanced high-performance computing, often called supercomputing, is essential to solving both complex and large questions.

Everything from answering metaphysical queries about the origins of the universe to discovering cancer-fighting drugs to supporting high-speed streaming services, requires processing huge amounts of data.

But storage platforms essential for these advanced computer systems have been stuck in a rigid framework that required users to either choose between customization of features or high availability.

Now, Virginia Tech researchers have found a way to give high-performance computing (HPC) data systems the flexibility to thrive with a first-of-its-kind framework called BespoKV, perhaps helping to one day achieve the HPC goal of performing at the exascale, or 1 billion billion calculations per second.

The main ingredient to the functioning of the new platform is key value (KV) systems. KV systems store and retrieve important data from very fast memory-based storage instead of slower disks. These systems are increasingly used in today's high-performance applications that use distributed systems, which are made up of many computers to solve a problem. High-performance computing relies on having computers intake, process, and analyze huge amounts of data



at unprecedented speeds. Currently, the best systems operate at a quadrillion calculations per second, or a petaflop.

The research is relevant to industries that process large amounts of data, whether it be the space-hogging, intense

visual graphics of movie streaming sites; millions of financial transactions at large credit card companies; or user-generated content at social media outlets. Think large media sites like Facebook where content is everchanging and continually

accessed. When users upload content to their profile pages, that information resides on multiple servers.

But if you have to continually access certain content, KV systems can be far more efficient as a storage medium because content loads from the faster in-memory store nearby, not the far-away storage server. This allows the system to provide very high performance in completing tasks or requests.

"I got interested in key value systems because this very fundamental and simple storage platform has not been exploited in high-performance computing systems where it can provide a lot of benefits. BespoKV is a novel framework that can enable HPC systems to provide a lot of flexibility and performance and not be chained to rigid storage design," said Ali Anwar, first author on the paper being presented and a recent Virginia Tech graduate who is currently employed at IBM Research. The main innovation of BespoKV is that it supports composing a range of KV stores with desirable features. It works by taking a single-server KV store called a datalet and enables immediate and ready-to-use distributed KV stores. Now, instead of redesigning a system from scratch to accomplish a specific task, a developer can drop a datalet into BespoKV and offload the "messy plumbing" of distributed systems to the framework. BespoKV decouples the KV store design into the control plane for distributed management and the data plane for local data storage.

Virtual twin in 10 minutes

The ICSPACE system has come up with the technology that produces virtual twin of the user within minutes. In order to create avatars for the ICSPACE system, the researchers "scan" people.

The computer scientists use a circular array of 40 DSLR cameras to photograph the respective person from all sides and use these images to compute several million three-dimensional sample points on the person's body.

A generic virtual human model is fitted to this data in such a way that it corresponds to the shape and appearance of the person scanned. "Our virtual human model was generated from

more than one hundred 3D scans and contains statistical knowledge about human body shape and movement," says Professor Dr. Mario Botsch, head of the Computer Graphics and Geometry Processing research group and one of the coordinators of the ICSPACE project.

"Only through this model are we able to create avatars quickly and automatically."

The resulting virtual people can be animated in detail: they can move all joints, even

individual fingers, and communicate through facial expressions, speech and gestures. "The most important feature, though, is that they reflect the user photorealistically," says Botsch. This is crucial

because personalized avatars are much more readily accepted by users. For the current study, his team has developed algorithms that accelerate the complete processing of the photo data right up to the animatable

avatar. "This way, we can now generate the avatar of any person within ten minutes," says Jascha Achenbach, lead author of the resulting publication. "We create the virtual avatars in a format that is also used by the computer games industry," says Thomas Waltemate, who, like Achenbach, works in Botsch's research group. Test subjects wear 3D glasses similar to those worn in the cinema.

It is the first system of its kind worldwide to simulate the complete training process and adapt flexibly to the user's behavior.



Foldable smartphone on anvil

Samsung Electronics Co. plans to launch its first foldable smartphone in March, along with a fifth-generation (5G) network-powered Galaxy S10, industry sources said lately. According to the sources, the South Korean tech giant plans to unveil the flagship Galaxy S10 smartphone in February, followed by the presumed foldable Galaxy F and another edition of the Galaxy S10 that runs on the 5G network in March.

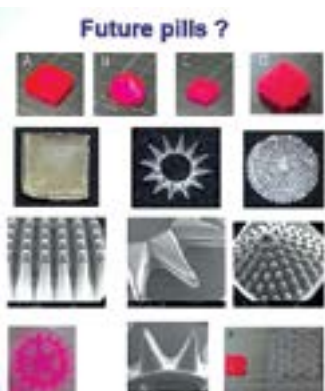
The outlook came after Samsung Electronics President Koh Dong-jin, who heads the mobile business, said last week that the company will release a foldable smartphone within the first half of 2019. Koh said the shipment volume of the foldable smartphone will be at least 1 million. Industry watchers said Samsung is expected to showcase the upcoming foldable smartphone in the Mobile World Congress in February, ahead of the official launch in the following month.

The much-awaited foldable smartphone, however, is not expected to support the 5G network. While the price of the foldable smartphone has not been decided, industry watchers said it may cost around 2 million won (US\$1,770). The steep price is expected to limit sales.

Shape-shifting 3D printed pills

Researchers at The Hebrew University of Jerusalem have developed a new way to create drug capsules using 3D printers, a step that will pave the way for pills that can be tailored to perform better than the conventional capsules manufactured nowadays.

The custom printed pills are made out of a hydrogel in which the medication is inserted. The substance has the consistency of malabi, a Middle Eastern milk pudding. The technology enables the creation of pills with complex designs, from star-shaped to crystalline to round, that can expand, change shape and be activated on a preset schedule. This is currently not possible or very expensive to do, in conventional pharmaceutical manufacturing techniques. The flexibility enables the capsules to expand or release their medication at the location they need to target. For example,



a tablet can be printed that can swell in the stomach to give a feeling of fullness, or to only release its medication in the intestine, where acidity is lower than in the stomach. It will also allow doctors to more specifically tailor the dosage of the drugs to individual patients.

These 3D printed objects will be able to change shape through contact with water, or humidity - enabling them to open only under certain conditions. This technology is bringing us closer to a future in which the medical field can offer personalized, patient-centered care.

In a 3D printing process, a computer-controlled design shapes a material - like metal powder or a liquid dispersion of metal particles - to create a three-dimensional object. These objects are generally created by adding layers of material, one over the other, Magdassi explained.

Simpler-than-ever quantum 'hard drive for light'

Physicists at the University of Alberta in Canada have developed a new way to build quantum memories, a method for storing delicate quantum information encoded into pulses of light.

"We've developed a new way to store pulses of light - down to the single-photon level - in clouds of ultracold rubidium atoms, and to later retrieve them, on-demand, by shining a 'control' pulse of light," said Lindsay LeBlanc, assistant professor of physics and Canada Research Chair in Ultracold Gases for Quantum Simulation. LeBlanc conducted this research with postdoctoral fellow Erhan

Saglamyurek.

Quantum memories are an important component of quantum networks, serving much the same role as hard drives in today's computers. And the interest in storing quantum data efficiently and effectively is only growing, with practical applications including a quantum fibre-optic internet and other methods of secure communication.

"This experiment involved taking short pulses of light, in which we could encode quantum information, storing the light in the atoms, and then retrieving the original pulse that carries the same information," explained

Saglamyurek. The novel method developed by LeBlanc and Saglamyurek, which is best-suited for key applications requiring high-speed operation, also has considerably fewer technical requirements than required in common quantum storage techniques.

"The amount of power needed, for example, is significantly lower than current options, and these reduced requirements make it easier to implement in other labs," added Saglamyurek. This discovery will allow for the crucial scaling up of quantum technologies, which has proven the biggest challenge to date in the emerging field.

New tech detects faces in dark

A new type of facial recognition technology has been developed to work in the dark, allowing night-time recognition and identification of people.

Here technologists have developed an artificial intelligence and machine learning platform that produces a visible face image based on a thermal image of a person's face. The image is captured in low-light or night time conditions. Given the success rate, the technology could lead to enhanced real-time biometrics. In terms of the intended military use, the technology could assist with post-mission forensic analysis stemming from covert nighttime operations.

There are potential civilian applications. Face recognition is increasingly being used in crowded spaces, such as to replace a boarding pass and shorten time at customs or to identify terror suspects to prevent public threats. Facial recognition also has other applications, like improving social networks and the curating of photographs for news media.

To develop the new platform, special thermal cameras called Forward Looking

Infrared sensors, were deployed on aerial and ground vehicles. These enable devices to digitally capture facial imagery for recognition without active illumination. Deep neural networks were then 'trained' to spot faces of subjects and to determine their identity. This worked by using a non-linear regression model to map a given thermal image into a corresponding visible latent representation, followed by an optimization problem that projects the latent projection back into the image space.

According to one of the developers, this technology enables matching between thermal face images and existing biometric face databases/watch lists that only contain visible face imagery. The technology provides a way for humans to visually compare visible and thermal facial imagery through thermal-to-visible



face synthesis.

In further facial recognition news, Facebook has begun the process of asking its European and Canadian users to allow the social media giant to use facial recognition technology. This is for the purpose of identifying users in photos and videos.



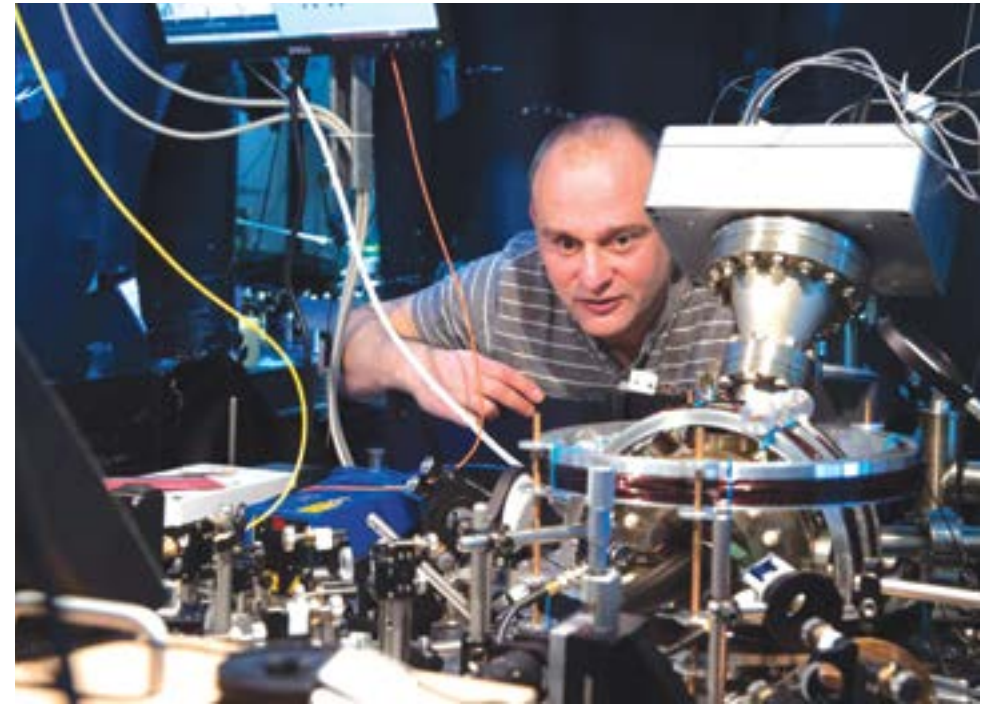
PUBG PS4 expected soon

PlayerUnknown's Battlegrounds aka PUBG might finally release on the PS4 in December, according to multiple reports. This comes as a user claims to have seen PUBG on Sony's server while a gaming analyst also suggested a December release date for PUBG on the PlayStation 4.

Members of video gaming forum ResetEra unearthed a post in a separate PlayStation forum called PSNProfiles, wherein a user claimed that PUBG was in their PS4's game database. "Don't know when it's coming out, but it's already on Sony servers, hosting the game image and Content-ID for the PSN store," the PSNProfiles member added, with two individual content IDs for North America and the US. Both currently display a 404 error.

In the ResetEra thread, video games analyst Daniel Ahmad said that PUBG would be out in December on PS4, with other users suggesting it points to a one-year exclusivity deal for Microsoft and Bluehole, the South Korean parent company of PUBG Corporation. In response to comments about a possible release around The Game Awards 2018 on December 6 in Los Angeles, Ahmad added: "Pretty much. Although maybe they'll announce its actual existence earlier or something."

This comes on the back of the previous leak that the Korean Game Rating and Administration Committee had rated PUBG for PS4. And with the game recently hitting 1.0 on Xbox One, it makes sense that the developer would want to explore more platforms. The full release on Xbox One also carried the label "console launch exclusive", which further points to a release on PS4 at some point.



Professor Winfried Hensinger

Scientists stop disruptive environmental effects on quantum computers

A team of scientists, led by Professor Winfried Hensinger at the University of Sussex, has made a major breakthrough concerning one of the biggest problems facing quantum computing: how to reduce the disruptive effects of environmental "noise" on the highly sensitive function of a large-scale quantum computer.

In the real-world, technological developments need to operate in imperfect conditions; what can be successfully tested in a highly controlled laboratory may fail when presented with realistic environmental factors, such as the fluctuations in voltage from an electronic component or stray electromagnetic fields emitted by everyday electronic equipment.

The University of Sussex's Ion Quantum Technology Group have managed to dramatically reduce the effects of such environmental "noise" affecting trapped ion quantum computers, reporting their findings in an article published recently. It means the team is one step closer to building a large-scale quantum computer with the capability to solve challenging real-world problems.

Small-scale quantum computers currently in existence only contain a handful of quantum bits - components of quantum computers that store information and can exist in multiple states, also referred to as qubits. As such, current quantum computers are small enough to be operated in a highly controlled environment inside a

specialized laboratory. However, such machines do not have the processing power required to solve complex problems because of the limited number of qubits.

When built, large-scale quantum computers will be able to solve certain problems that would take even the fastest super computers billions of years to calculate. In order to create a quantum computer that can solve such problems, scientists will need to increase the number of qubits, which in turn will increase the size of the quantum computer. The problem is that the more qubits that are added, the more difficult it becomes to isolate the computer from any realistic "noise" that would disrupt the computing processes.

Hensinger's team of University of Sussex physicists have made a quantum computing breakthrough that is capable of mitigating some of these problems. They collaborated with theoretical scientist Dr. Florian Mintert and colleagues from Imperial College London, who proposed a theory of how one might be able to solve this problem by manipulating the strange quantum effects in use inside a quantum computer. The theory allows - making use of the strange properties of quantum physics - the execution of quantum computations in such a way that changes in the initial operational parameters of the machine do not lead to a substantial change in the end result of the computation. This in turn helps to insulate the quantum computer from

the effects of environmental 'noise'.

Dr. Sebastian Weidt, senior scientist in the Sussex Ion Quantum Technology Group, explains the significance: "Realising this technique may have a profound impact on the ability to develop commercial ion trap quantum computers beyond use in an academic laboratory."

The Sussex team went to work to see whether they could actually implement this theory. They used complicated radio-frequency and microwave signals capable of manipulating the quantum effects inherent in individual charged atoms (ions), to demonstrate this in practical experiments. Their implementation is based on microwave technology, such as that present in mobile phones. Following months of intensive work in the laboratory, the Sussex scientists have managed to make this new method a reality, experimentally demonstrating its capabilities to substantially reduce the effect of "noise" on a trapped ion quantum computer.

Hensinger's group is now utilising this new technique as they put the final touches to a powerful quantum computer prototype that is currently in their laboratory at the University of Sussex. Hensinger says: "It's now time to translate academic achievements into the construction of practical machines. We're in a fantastic position to do this at Sussex and my team is working round the clock to make large-scale quantum computing a future reality."

Graphics processing unit to spy on web activity

Computer scientists at the University of California, Riverside have revealed for the first time how easily attackers can use a computer's graphics processing unit, or GPU, to spy on web activity, steal passwords, and break into cloud-based applications.

Marlan and Rosemary Bourns College of Engineering computer science doctoral student Hoda Naghibijouybari and post-doctoral researcher Ajaya Neupane, along with Associate Professor Zhiyun Qian and Professor Nael Abu-Ghazaleh, reverse engineered a Nvidia GPU to demonstrate three attacks on both graphics and computational stacks, as well as across them. The group believes these are the first reported general side channel attacks on GPUs.

All three attacks require the victim to first acquire a malicious program embedded in a downloaded app. The program is designed to spy on the victim's computer.

Web browsers use GPUs to render graphics on desktops, laptops, and smart phones. GPUs are also used to accelerate applications on the cloud and data centres. Web graphics can expose user information and activity. Computational workloads enhanced by the GPU include applications with sensitive data or algorithms that might be exposed by the new attacks.

GPUs are usually programmed using application programming interfaces, or APIs, such as OpenGL. OpenGL is accessible by any application on a desktop with user-level privileges, making all attacks practical on a desktop. Since desktop or laptop machines by default come with the graphics libraries and drivers installed, the attack can be implemented easily using graphics APIs.

The first attack tracks user activity on the web. When the victim opens the malicious app, it uses OpenGL to create a spy to infer the behaviour of the browser as it uses the GPU. Every website has a unique trace in terms of GPU memory utilization due to the different number of objects and different sizes of objects being rendered. This signal is consistent across loading the same website several times and is unaffected by caching.



Robo-anchors read news in China

Chinese news readers may have some new competition — artificially intelligent robot anchors that can mimic human facial expressions and mannerisms while reading out reports. The AI anchors, developed by the state news agency Xinhua and the tech firm Sogou Inc, were on display at the World Internet Conference in the eastern Chinese town of Wuzhen, drawing in curious passers-by. Based on the appearances of two flesh-and-blood Chinese news presenters, the computerised avatars read out text — one in Chinese, one in English — that is fed into their system, their mouths moving in tandem with the reports.

The anchors — the Chinese one is modelled on real-life newsreader Qiu Hao and sports a black suit and red tie — are part of a major push by China to advance its prowess in AI technology, from surveillance equipment to self-driving cars.

In another video presentation from Xinhua, a different robot presenter said it

was his “very first day” at the news agency and promised to “work tirelessly to keep you informed as texts will be typed into my system uninterrupted”.

China’s state-controlled news broadcasters have long been considered somewhat robotic in their daily recitation of pro-government propaganda, and new AI presenters will do little to dispel that view.

Sogou marketing staff said it wasn’t clear when the technology would actually go into use, but crowds gathered nonetheless to take selfies with the digital anchor and Qiu himself, who was also at the event.

The digital anchors offer certain advantages over humans, Xinhua said, such as being able to work 24 hours a day and to quickly disseminate breaking news.

The conference is China’s top tech event of the year, and has in the past attracted the likes of Apple CEO Tim Cook and Google’s Sundar Pichai. This year’s version, however, was more muted and has a less glitzy global lineup, even as battle lines for control of the web have hardened amid a trading war between China and the United States.

Foreign websites such as Google and Facebook are blocked in China, where authorities also tightly control online content and censor or punish those who post material seen as opposed to “core socialist values”.

Smart shopping with cart robot

LG Electronics Inc. said it inked an agreement with E-mart Inc., a retail giant in South Korea, to develop a new type of service robot that can assist shoppers at supermarkets.

Under the agreement, the two companies will develop what they call a smart-cart robot that can automatically identify obstacles and follow shoppers as they walk through aisles. LG said the new robot will free visitors from the hassle of pushing heavy carts by themselves.

The South Korean tech giant said the robot will be developed by its research lab, which has been releasing various robots under the CLOi brand.

So far, LG has released eight different products under the brand, which are suited for different tasks, including guiding, cleaning and even mowing the lawn. The company unveiled the CLOi SuitBot, which can help workers lift and move heavy objects easier as well.

LG said it has been making efforts to bolster its robot business by joining forces with different clients, including airports, bakeries and retail shops.



CLOi stands for clever, clear, close operating intelligence, LG said.

The company has been making investments in robotic firms, including Robotis, AI startup Acryl and U.S.-based robot maker Bossa Nova Robotics.

Robots can see into their future

Using this technology, called visual foresight, the robots can predict what their cameras will see if they perform a particular sequence of movements. These robotic imaginations are still relatively simple for now — predictions made only several seconds into the future — but they are enough for the robot to figure out how to move objects around on a table without disturbing obstacles.

Crucially, the robot can learn to perform these tasks without any help from humans or prior knowledge about physics, its environment or what the objects are.

That’s because the visual imagination is learned entirely from scratch from unattended and unsupervised exploration, where the robot plays with objects on a table. After

this play phase, the robot builds a predictive model of the world, and can use this model to manipulate new objects that it has not seen before.

“In the same way that we can imagine how our actions will move the objects in our environment, this method can enable a robot to visualize how different

behaviors will affect the world around it,” said Sergey Levine, assistant professor in Berkeley’s Department of Electrical Engineering and Computer Sciences, whose lab developed the technology. “This can enable intelligent planning of highly flexible skills in complex real-world situations.”



Coollest robots extends helping hands



Milo Robot:

Milo is a robot developed by American humanoid manufacturer Robokind to support children with Autism. Two-feet tall, it’s been designed specifically for parents, therapists, and educators to teach children social skills.

The robot displays different emotions which users have to identify using an iPad. While this happens, cameras built into Milo’s eyes monitor the child’s behavior to provide feedback, and the children also wear a chest pack that looks out for

changes in heart rate. That way, whoever’s working with the children can address problems.

The firm claims that children working with Milo have an engagement rate of 70-90%, compared to 3-10% with other therapy methods.

Patience is Milo’s best characteristic. No matter how many times he has to repeat himself, his tone of voice stays even. He accepts his students without judging them. He’s the perfect teacher for children with Autism.



Jibo:

While it would be nice to have a robot that can organize your home office and ensure your children are ready for school, that’s a long way off. However, Jibo is an excellent example of how robots can become our personal assistants.

Dubbed “the world’s first social robot for the home”, it recognizes the faces of its owners and can do things like provide you with reminders and take photos at family celebrations. After raising more than \$3 million through crowdfunding, the robot is set to go on sale later this year for \$749 (£529).

Poised to invade your home and creep out help out your family, Jibo is a mechanical assistant that was originally marketed as “the world’s first family robot.” That was back in 2014, and while there are now quite a few family robots around, Jibo still has a rather unique aesthetic that might help it succeed now that it’s finally available to preorder. Looking like an odd mixture between HAL9000 and Marvin the Paranoid Android, this bulbous little bot is designed to help you out with a variety of different tasks around the house.



Ekso GT:

Exoskeletons demonstrate the potential robotics has in the medical world. Ekso Bionics, a company based in Richmond, California, has been manufacturing them for over ten years, working primarily with the military.

Its latest product, the Ekso GT, is helping spinal trauma and stroke victims recover

and walk again. The robotic suit, made from titanium and aluminum, uses battery-powered motors to allow the wearer to walk. All they need to do is move their hips forward, and the device will initiate steps. It also comes with software that health professionals can use to provide adaptive therapy.



Deka Robot:

Bionic limbs have also emerged as an exciting area of robotic technology — aiding people who’ve been born without limbs or who’ve lost them in accidents. The DEKA Arm is just one such example.

Funded by the Defence Advanced Research Projects Agency (DARPA) in the US, it lets individuals who’ve experienced upper extremity amputations regain control

of their arm and hand. The prosthetic arm is so precise that users are able to grip items such as cups and cutlery.

The DEKA Arm detects electrical activity caused by the contraction of muscles close to where the prosthesis is attached. Those electrical signals are then sent to a computer processor in the DEKA Arm, which triggers a specific movement.

Double:

Teleportation is something we’d all love to experience — you could be in your living room one minute, and in an important meeting the next. It’s far from likely, though.

But Double is the next best thing. It’s essentially a stick with motorized wheels and a screen attached to it, letting you move around spaces and attend events from the comfort of your own home. Of course, it’s a great way to be lazy, but it’s also a sound product if you can’t be somewhere for a legitimate reason. It’s not cheap, however, costing more than \$2,000. Double Robotics’



telepresence robot, the Double, is a sleek and elegant machine. The two-wheel rolling base uses a balancing algorithm to stay upright while moving around. Dual kickstands, in both the front and rear, are automatically deployed when no movement is required. The estimated run time is 8 hours, with a 2 hour recharge time to full capacity. Drivers can take advantage of the adjustable height function to raise or lower the iPad from 47” - 60” tall allowing them to easily maintain eye contact.

Pepper:

Pepper may have been announced in 2014, but that’s not to say it’s outdated.

It’s still an awesome piece of kit. What can it do, then? Well, it’s claimed to be the first ever robot that can recognize and respond to human emotion. In its head, there are two HD cameras, four microphones, and a 3D sensor, which all monitor facial expressions and speech patterns. You’ll also find a gyroscope in the torso.

Its creator, Aldebaran Robotics, says Pepper is aimed at making humans happy. It currently costs 198,000 Japanese yen (just over £1000).

Pepper is not a functional robot for domestic use. Instead, Pepper is intended “to make people happy”,



enhance people’s lives, facilitate relationships, have fun with people and connect people with the outside world. Pepper’s creators hope that independent developers will create new content and uses for Pepper.

"If you can DREAM it, you can DO it."
-Walt Disney

Future Bright

Career Development

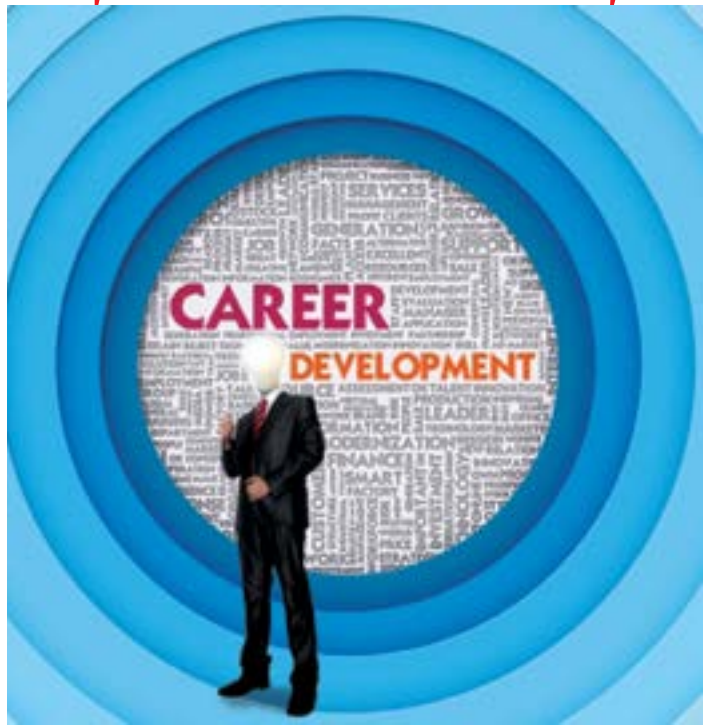
Career development is an array of activities that is focussed on building up one's career.

Career development, for the most part, alludes to dealing with one's career in an intra-hierarchical or between authoritative situations. It includes planning for new abilities, moving to higher employment duties, rolling out a career improvement inside a similar association, moving to an alternate association or beginning one's own business. Career development doesn't end there.

After you pick your profession, you should get the required training and planning, search and apply for or ascertain the business, to progress in your career. For the vast majority, it will likewise incorporate changing careers and occupations at any rate once amid their work lives, however, most likely more regularly than that.

Career development is clearly connected to the objectives and destinations set by a person. It begins with self-actualisation and self-evaluation of one's interests and abilities. The interests are then coordinated with the accessible choices. The individual needs to prepare him to gain the skills required for the choice or career way picked by him. In the wake of securing the coveted competency, he needs to perform to accomplish the objectives and targets set by him.

Right now, one of the greatest career worries for individuals is that their division may get obsolete in a couple of years and they might not have a centric skill to bring together their profession on. The fear or anxiety is that they might not have a range of abilities which will be applicable even to a long time from now. The core of career development and defining profession objectives in the new world is keeping you pertinent to



the active market, and building your long and here and now career objectives around this. Here are the ways by which you can design your profession healthier.

The well-known method is to dissect the profession is to look at them as made up of stages. There are five-stage models that are pertinent to the vast majority amid their work life. The career stages show is the most prominent approach to see professions.

Exploration is when people are investigating possible professional alternatives and settling on basic decisions. Establishment starts with the scrutinizing for work and landing that initial position. Mid-vocation is the point at which an individual is never again observed as a "student." The Late profession is the point at which an individual can impart his or her insight to others in the association. The decline is the point at which an individual leaves the workforce.

Exploration stage the messages are usually from a person's elders about their desire for the type of work the person should do, where he or she should live, and spiritual dimensions and lifestyle such as choice of a partner, number of children, and so forth. Many of the critical choices individual makes about their career are made prior to every entering the work on a paid basis our parents relatives, teachers as well as what we see on television and films very early in our parents their interests, their aspirations and their financial resources will be heavy factors in determining out their interests, their aspirations and their financial resources will be heavy factors in determining our perception of what careers are available.

The foundation time frame starts with the search for work and incorporates landing your first job, being acknowledged by your associates, taking in the activity and picking up the principal unmistakable confirmation of

the achievement of our disappointment in this present reality. It is a period that brings the vulnerabilities and tensions. Furthermore, it additionally set apart by the committing of errors, gaining from these slip-ups and a continuous acceptance of expanded obligations. In any case, people in this stage presently can't seem to achieve their peak

profitability and occasionally are they given work task that conveys extraordinary power or higher stages.

A great many people don't confront their first professional situation until the point when they achieve the mid-career development, this is where individual may proceed with their earlier enhancements in execution level or start to fall apart. At this stage, the primary situation is tolerating that one is never again observed as a student. Errors convey a more noteworthy punishment. Now in a vocation, one is relied upon to have moved past apprenticeship to understudy status. To the individuals who influence the effective change to go more noteworthy duties and prizes. For others, it might be a period of reassessment, work changes, alteration of needs or the quest for elective ways of life.

This is a sensitive phase of a professional's work since the yields must be grounded in all actuality to the best degree conceivable. On the off chance that they aren't practical, individuals are probably going to encounter dissatisfaction or frustration later on.

For the individuals who keep on growing through the mid-career stage through late career, as a rule, is a charming time when one has enabled the privilege to calm down a bit and appreciate

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filling the role of the senior man. It is a period their one lay on one's shrubs and both in the regard given by more youthful workers. Amid the late career days, people are never again learning nor is it expected that they ought to exceed their levels of execution from earlier years. Their incentive to the association lies vigorously in their judgment, developed over such a significant number of years and through differed encounters and imparting to and showing others in view of the information they have picked up. The last stage in one's career is troublesome for everybody and is presumably hardest on the individuals who had proceeded with achievements in before stages. Following a very long array of accomplishments and abnormal state of execution, time for retirement has come to. These people are compelled to advance out of the spotlight and surrender a noteworthy segment of their character. For the most entertainers or the individuals who have seen their execution break down finished the years. It might be a wonderful time. The disappointments that have been related to work will be abandoned.

Given the unpredictable job market and the continually advancing working environment, upskilling is basic to career planning. Today's career now is about long-lasting learning. The advance of online education has influenced life-to long learning achievable. In the event that you are putting aside 5-6 hours consistently to keep pace with the most sizzling skills in your space, you are proactively alleviating the danger of getting to be plainly excess in your activity. Your capacity to gain another

range of abilities. As you learn new skills, look for chances to apply them. Proactively search for future-driven tasks in your organisation, and investigate how you fit in there. For example, most organizations today are battling with advanced digital up gradation, and a large group of them are making groups go up against the experiment. Taking a shot at ventures that are basic to the business can furnish you with the terrifically essential edge. Professional Career Counselling Changing profession frequently includes some type of career directing. In spite of the fact that there are a ton of free online career tests, nothing beats individual profession training custom fitted to your particular profession needs, yearnings and needs. It is frequently exceptionally

accommodating to have a free proficient profession specialist to help you to see your individual gifts and to talk you through the career way required to take your profession to another level. A career mentor is probably going to solicit you a great deal of shooting inquiries to help you to think of another profession way. The mentor may request that you fill in a profession test, a career decision profile, job activities or ability appraisals with the general aim of helping you to see the proper profession heading for you. The career specialist or career mentor through a progression of activities and conversing with you will help you to investigate your own career needs and what you esteem in your work life.

The career counsellor influences the profession vision to relax you and will for the most part outline the profession system and advance to finish. Making a profession advancement design is tied in with characterizing what you are searching for regarding career achievement and satisfaction and setting up a profession arrange for that you can without much of a stretch accomplish your career objectives. Balanced profession guiding can frequently give you knowledge of yourself and a professional way to enable you to accomplish the following level of your professional achievement.

UK study exposes Indian universities shortfalls

London, Nov: Indian universities are ceding ground to global competitors in preparing students for the modern workplace, according to new data analysis released on Thursday from the Global University Employability Ranking.

The annual ranking, produced by French HR consultancy Emerging and published by the "Times Higher Education", lists the top 150 institutions worldwide for employability, based on a global survey of around 7,000 recruitment and international managers from major businesses.

The Harvard University topped the list, followed by the California Institute of Technology and Massachusetts Institute of Technology.

The leading Indian institutions in terms of employability are the Indian Institute of Science (IISc) in Bangalore, Indian Institute of Technology (IIT) Delhi and Bombay.

"India's performance in the employability ranking has been somewhat inconsistent since the list was first launched in 2011. It still only counts three univer-

sities in the top 150, suggesting it's struggling to make the reputational ground with employers that some other Asian nations have achieved," said Simon Baker, Data Editor at Times Higher Education.

The ranking shows that while India has seen some improvement to its representation and institutional positions in the table since 2011, it has not kept pace with advances made by other countries in the region and globally. "There is some solid improvement this year for India, however. In the 2018 global listing, the Indian Institute of Science rises one position to 28th, while the Indian Institute of Technology Delhi soars this year to place global 53rd, from 145 last year," notes the report.

The 2018 report reveals that most countries value soft skills, such as collaboration and communication whereas harder, practical skills are valued most in China.

There is also a noticeable difference in the emphasis placed on graduates having critical thinking skills between countries in East Asia and Europe or North America. In the US, 90 per cent

of employers rated critical thinking skills as very important, while in China this fell to 75 per cent. "Today's digital world makes for a constantly evolving workplace the skills required in many roles will need regular updating and it has become impossible to determine which of them will change tomorrow, and how," said Laurent Dupasquier, Managing Partner at Emerging. While digital skills are increasingly valued by recruiters, more than anything, universities must instil in students the capacity to adapt and keep learning; these will be crucial skills for success not only to cope, but thrive in a transforming workplace.

University-industry collaboration will also be of increasing value, in order provide students with the necessary on-the-ground experience," he said. "The US continues to dominate the ranking as the data analysis reveals a swiftly narrowing global employability gap. America has 34 institutions in the top 150 this year, compared to 55 in 2011, with six universities in the top 10 fall from seven last year. The UK largely holds its position in this

year's ranking retaining 10 institutions. But US and UK universities are also found to be struggling to keep pace with global competitors in preparing students for the modern workplace.

"The new data analysis reveals a substantial global shift in graduate employability this decade. We see a dramatically improved performance within East Asia and parts of Europe," adds Simon Baker. "By-and-large, the highest risers are those equipping students with softer skills increasingly favoured among recruiters, such as teamwork combined with the strongest possible industry experience," he notes.

To produce the 2018 Global University Employability Ranking, an online survey was completed by two panels of participants between May and September 2018. The panels included respondents from 22 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Israel, Italy, Japan, Mexico, Morocco, the Netherlands, Singapore, South Africa, South Korea, Spain, the United Arab Emirates, Sweden, the UK and the US.

Indians studying in US up by 5.4 %

The number of Indians studying in the United States has increased by 5.4 per cent since last year, according to the 2018 Open Doors Report on International Educational Exchange says. According to the report, a total of 1,96,271 Indians are at present studying in the US and this is the fifth consecutive year during which their strength has grown.

"Looking at the past 10 years of data, the number of Indians going to the United States has doubled. The reasons are clear, Indian students are looking for a great education and the United States continues to offer this," Joseph

Pomper, Minister Counselor for Consular Affairs, said at the report launch.

The report noted that Indians make up nearly 18 per cent of all international students in the United States, surpassed only by China.

"India provided the second highest amount of graduate students and fourth-most undergraduates. Also of note, the number of American students studying in India increased to 4,704 12.5 percent more than the year before," it said, adding the top places of origin for international students studying in the US were China, India, South Korea, Saudi Arabia,

Canada, Vietnam, Taiwan, Japan, Mexico, and Brazil. The top host states are California, New York, Texas, Massachusetts, Illinois, Pennsylvania, Florida, Ohio and Michigan.

"We are thrilled to see a significant increase in the number of American university students choosing India as a study abroad destination. The student exchange programs are one of the best ways to foster meaningful relationships and promote mutual understanding between American and Indian citizens," said Adam Grotzky, Director of United States - India Educational Foundation (USIEF).

"Waste to Wealth and Alternate Energy (Solar) one day Workshop"

Entrepreneurship Development and Innovation Institute (EDII) of Tamil Nadu
(www.editn.in), (An autonomous society of the Government of Tamil Nadu), is committed to promote entrepreneurial eco system in the State. Government of Tamilnadu had launched New Entrepreneurs-Cum-Enterprise Development Scheme (NEEDS) in the year 2013-14 to assist first generation entrepreneurs.

So far 3891 entrepreneurs have been assisted under NEEDS. In addition, Prime Minister Employment Generation Programme (PMEGP) and Unemployed Youth Employment Generation Programme (UYEGP) also have helped thousands of businesses to emerge.

In order to assist existing entrepreneurs a one day workshop on "Waste to Wealth and Alternate Energy (Solar)" will be organized by EDII on 23.11.2018, from 10.00 pm to 5.00pm at EDII, Parthasarathy Koil Street, SIDCO Industrial Estate, Guindy, Chennai - 600032.

Existing entrepreneurs may attend the programme and avail the benefit. Interested candidates (Male/Female) above 18 years of age with 10th std passed candidates may apply.

This programme will help micro and small entrepreneurs to learn and implement various methods of digital marketing.

Interested candidates may register their names with EDII, Website. The following telephone/mobile numbers may be contacted on working days (Monday - Friday) between 10 A.M. to 05.45 P.M for further information: / 8668101652
www.editn.in. Entrepreneurship Development Institute
SIDCO Industrial Estate
Parthasarathi Koil Street, Guindy, Chennai-600032