BYTE QUEST

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Byte Quest is the article published by CSE department of Vasavi College Of Engineering regarding the latest innovative Technologies and Software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in Technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

- Good ,bad or indifferent if you are not investing in new Technology, You are going to be left behind.

  -Philip Green.

- Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

  -Stewart Brand.

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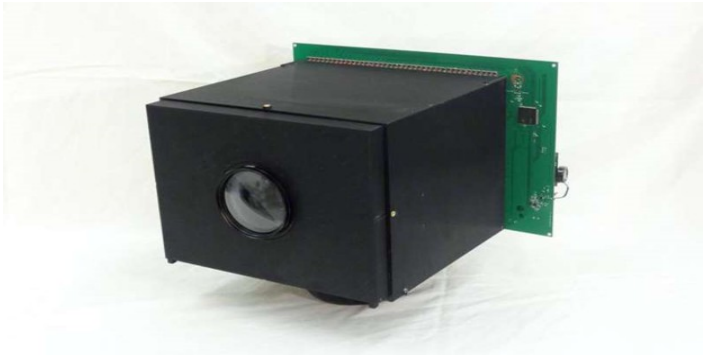
ENGINEERING TEAM INVENTS A CAMERA THAT POWERS ITSELF



A Professor of Computer Science at Columbia Engineering, has invented a prototype video camera that is the first to be fully self-powered. It can produce an image each second. They designed a pixel that can not only measure incident light but also convert the incident light into electric power.

He notes that in the last year alone, approximately two billion cameras of various types were sold worldwide. A leading research team led by Shree K. Nayar, T.C. Chang researcher in computational imaging, Nayar realized that although digital cameras and solar panels have different purposes - one measures light while the other converts light to power - both are constructed from essentially the same components. At the heart of any digital camera is an image sensor, a chip with millions of pixels. The key enabling device in a pixel is the photodiode, which produces an electric current when exposed to light. This mechanism enables each pixel to measure the intensity of light falling on it. The same photodiode is also used in solar panels to convert incident light to electric power. The photodiode in a camera pixel is used in the photoconductive mode, while in a solar cell it is used in the photovoltaic model.

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GOOGLE FIBRE

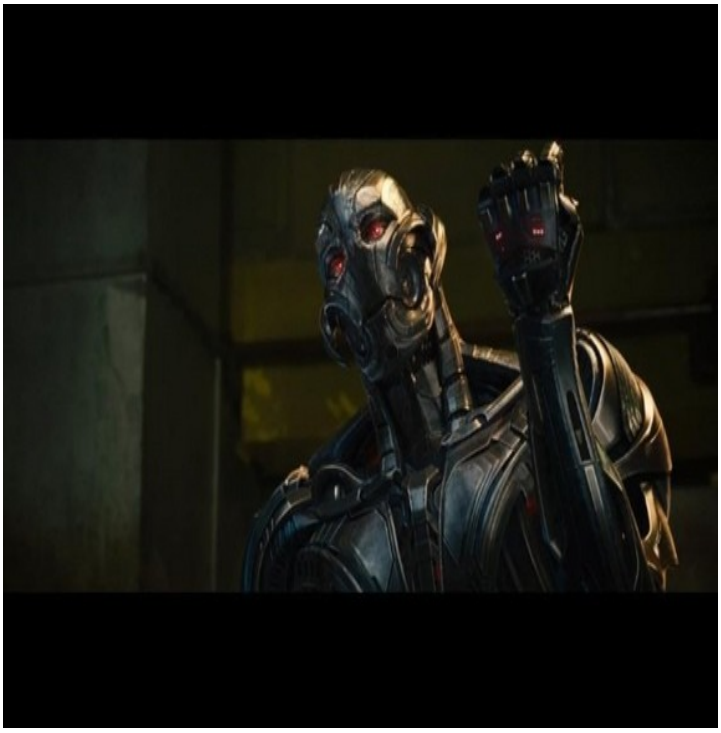
Google Fiber, the ultra-high-speed Internet and TV service offered in a select few U.S. cities, is taking a page from the classic pay TV playbook by raising rates on some customer's.

There is much to love about Google Fibre, Google's superfast Internet and TV service that launched in Kansas City four years ago . For $70 a month, Google Fiber provides Internet that's roughly 100 times faster than the national average for broadband. Customers are also given the option of basic Internet on par with other broadband service for free, after paying a one-time fee of $300, or $25 monthly for 12 months.
Perhaps most refreshing of all, however, is that, Google Fiber has shown that Internet and pay TV customer service doesn't have to suck. In fact, thus far at least, subscribers say that Google Fibre customer service is quite good.

That wouldn't seem like a big deal in most industries, especially not when it comes to an upstart trying to win over customers from larger existing players. But hated pay TV and Internet giants like Comcast and Time Warner Cable have been bashed as awful, unresponsive, incompetent, and overpriced for so long, that it's understandable if consumers assumed that this is always how things would be in this business category.

AMREEN KOUSAR (2/4 CSE-A)

HOW REAL-LIFE AI RIVALS ‘ULTRON’: COMPUTERS LEARN TO LEARN



Artificial Intelligence will rule Hollywood (intelligently) in 2015, with a slew of both iconic and new robots hitting the screen. From the Turing-bashing "Ex Machina" to old friends R2-D2 and C-3PO, and new enemies like the Avengers' Ultron, sentient robots will demonstrate a number of human and superhuman traits on-screen. But real-life robots may be just as thrilling.

When Iron Man and friends regroup in May to battle the titular robot in "Avengers: Age of Ultron," they won't square off against the same old Hollywood droid. Ultron will be a different sort of mechanical man, because this robot is "bonkers." That craziness, in part, results from learning capacity, a rapidly advancing component of real-life AI.

Blessed and burdened with a tremendous learning capacity, Ultron masters 3,000 years of human history in a flash — without the maturity to handle that knowledge. And so he goes a bit crazy. By turning studiousness into one of his robot's defining features, Whedon (director) mirrors a major ambition of current AI: Engineers want their robots to learn — hopefully as well as, if not better than, humans.

So-called "deep learning" AI systems have taken off, with the number of labs working on the tech multiplying, Patrick Ehlen, head of deep learning at Loop AI Labs, told the Observer. Google last year acquired London's DeepMind Technologies, whose secretive Neural Turing Machine project aims to construct a computer that can learn like a person.

Though details on the project are thin, the tech essentially models a self-learning AI mind on the structures of the mammalian brain, Chris Eliasmith, a computational neuroscience researcher at the University of Waterloo in Canada, told.

"In biology, there's a loop from the basal ganglia to the cortex and back" — the basal ganglia acting as a controller, the cortex as memory, Eliasmith said. "In a Neural Turing Machine, you have the same system of memory and a controller."

Those structures permit "reinforcement learning," in which individuals learn new behavior based on the rewards they get for taking different actions. The brain, or neural network, mediates this learning, with the controller assigning weights to various actions based on their rewards, and the memory storing that data.

The core idea is not necessarily new — neuroscientists have been studying this kind of learning since Pavlov first tricked his dogs to associate a ringing bell with feeding time. But the attempt to model it in an artificial computer is a new engineering tactic. Today's more powerful processors have made such neuronal modeling more feasible.

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MICROSOFT COULD BRING WINDOWS 10 TO MORE ANDROID PHONES

Apart from revealing the Windows 10 release timeframe, Microsoft made another announcement in China that could have far-reaching consequences.
The Windows-maker announced that it is working with China's Xiaomi to offer some customers a test version of Windows 10 to install on their Mi 4 smartphones.
The Redmond-based tech firm added in a statement that it would be helping select group of Xiaomi Mi 4 users "flash their phones with the new Windows 10 OS" on their handsets and let them "contribute to its future release later this year." These select "power users" will be using Windows 10 on their Mi 4 handsets and giving relevant feedback. The details of the program are not yet known, but with Microsoft's use of the word flash, the company will probably be offering a ROM, similar to custom ROMs like CyanogenMod, to install on the Android smartphone.
Microsoft's delivery of Windows 10 ROM for Mi 4 users, however, is said to be with a software that helps "convert" an Android phone into a Windows 10 phone, complete with access to all Microsoft services.

It seems Microsoft sees this as a good way to attract Android users to Windows 10, without them needing to invest in new hardware. As the report notes, China is an ideal market for testing such an initiative, given the region's relative lack of lock-in to Google services and a general affinity towards custom ROMs.

SAMHITHA VENKATESH
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THIS IS THE AGE YOU REACH PEAK INTELLIGENCE, ACCORDING TO SCIENCE

There are a lot of skills that peak in your 20s. By the time most of us hit 30, it's likely that our best sport, drinking and memorizing days are over. And it's generally thought that our ability to think on our feet and quickly recall information declines as we get older too.
But now new research has shown that not all aspects of intelligence age in the same way, and while some peak during high school and college, others continue to improve after 40.
To investigate how intelligence changes with age, psychologists from Massachusetts Institute of Technology (MIT) and the Massachusetts General Hospital in the US tested 48,537 people between the ages of 10 to 89 who had visited the sites GamesWithWords.org and TestMyBrain.org, where they conducted language, IQ and memory tests that measured their emotion-recognition, working memory, number skills and vocabulary.
They found that, depending on your definition of 'intelligence', the skills peak at very different times throughout your life. While young participants mostly did the best on the number-to-symbol coding tasks, with a peak age of around 19 to 20 years old, working memory peaked between the mid-20s and mid-30s, before starting to slowly decline.
And while 20-somethings were really good at recognizing someone's emotions from simply looking at a photo of their eyes, this ability kept improving all the way up until the age of 48, after which the skill dropped very, very slowly. Vocabulary just kept getting better with age, finally peaking in the 60s or 70s, without any obvious sign of decline.
The results highlight the fact that different parts of our intelligence peak at different times throughout our lives.
“At any given age, you’re getting better at some things, you’re getting worse at some other things, and you’re at a plateau at some other things."

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