BYTE QUEST

Vasavi College Of Engineering

Department Of Computer Science and Engineering

August 15, 2016

Volume 25

Contents:

Byte Quest is the article published by the CSE dept 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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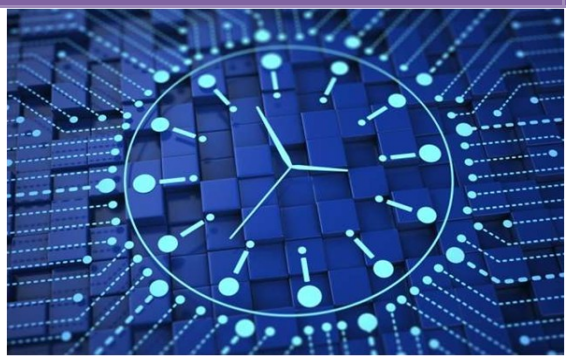
CHIPS WITH A THOUSAND CORES? POSSIBLE WITH EFFIECIENT MEMORY MANAGEMENT

In a modern, multicore chip, every core—or processor—has its own small memory cache, where it stores frequently used data. But the chip also has a larger, shared cache, which all the cores can access. If one core tries to update data in the shared cache, other cores working on the same data need to know. So the shared cache keeps a directory of which cores have copies of which data. That directory takes up a significant chunk of memory: In a 64-core chip, it might be 12 percent of the shared cache. And that percentage will only increase with the core count. Envisioned chips with 128, 256, or even 1,000 cores will need a more efficient way of maintaining cache coherence. In a 128-core chip, that means that the new technique would require only one-third as much memory as its predecessor. With Intel set to release a 72 -core high-performance chip in the near future, that's a more than hypothetical advantage. But with a 256-core the space savings rises to 80 percent



When multiple cores are simply reading data stored at the same location, there's no problem. Conflicts arise only when one of the cores needs to update the shared data. With a directory system, the chip looks up which cores are working on that data and sends them messages invalidating their locally stored copies of it.

T.Abhinav (CSE-A 2/4)

CHIP COULD BRING DEEP LEARNING TO MOBILE DEVICES.

Advance could enable mobile devices to implement 'neural networks' modeled on the human brain. In recent years, some of the most exciting advances in artificial intelligence have come courtesy of convolutional neural networks, large virtual networks of simple information-processing units, which are loosely modeled on the anatomy of the human brain. Neural networks are typically implemented Using graphics processing units (GPUs), special-purpose graphics chips found in all computing devices with screens.

A new chip designed specifically to implement neural networks. It is 10 times as efficient as a mobile GPU, so it could enable mobile devices to run powerful artificial-intelligence algorithms locally, rather than uploading data to the Internet for processing. A new chip designed specifically to implement neural networks. It is 10 times as efficient as a mobile GPU, so it could enable mobile devices to run powerful artificial-intelligence algorithms locally, rather than uploading data to the Internet for processing.

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THIS TINY DEVICE MAKES DIRTY WATER DRINKABLE IN JUST 20 MINUTES

Scientists have developed a tiny device the size of a postage stamp that can kill 99.99 percent of bacteria in water in just 20 minutes.

Exposing contaminated water to sunlight can naturally clean it up – because UV rays blitz germs – but this distillation process usually takes up to 48 hours to complete. Instead, this new gadget harnesses a broader spectrum of the Sun's rays to speed everything up.

It's the visible part of the solar spectrum, rather than UV rays, that contains most of the Sun's energy – around 50 percent for visible sunlight, compared with 4 percent for UV rays.

This visible sunlight attracts electrons in the device's coating of molybdenum disulfide (often used as an industrial lubricant), which sparks chemical reactions in the water.

Hydrogen peroxide and other disinfectants are generated from these reactions, which set about clearing the germs from the water.

Viewed under a microscope, the material is made up of many miniature walls of molybdenum disulfide, closely stacked together like a labyrinth on top of a rectangle of glass. From further out, it resembles a fingerprint.