

# BYTE QUEST

Vasavi College Of Engineering

Department Of Computer Science and Engineering



February 29, 2016

Volume 18

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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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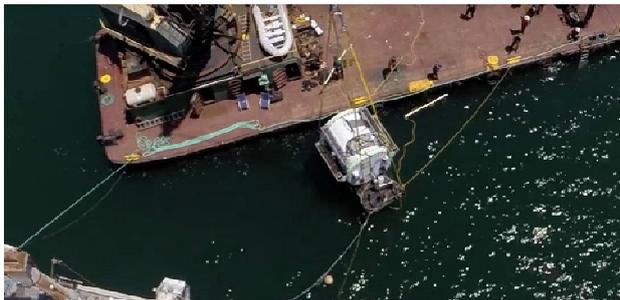
Hack attacks happen regularly, so it's simply good business to be prepared. This year, Google wants to incentivize users to safeguard their information with an offer of some extra space on Google Drive. Google is offering two gigabytes of free storage space when users conduct a quick five-step account security checkup. The checkup confirms user recovery info, recent security events, connected devices, account permissions and two-step verification settings.



This is the second year in a row the tech giant has offered the deal to coincide with Safer Internet Day, a global initiative to create a more secure Internet.

Vineel (CSE-A 3/4)

## UNDERWATER DATA CENTRES ON OCEAN FLOORS



The massive data centres that bring you your daily Internet comprise countless racks of servers that generate massive amounts of heat. Microsoft had just discovered the most cost-effective cooling solutions to keep these computer arrays from getting too hot. Project Natick is an experimental trial to see how data centres perform when they're underwater.

According to Microsoft, underwater data centres that can be readily deployed to coastal environments make more sense than land-based facilities located much further away because of latency and it could be theoretically easier to deploy long-term systems housed in pressurised

tanks than it would be to build the massive, land-hogging data centres.

With these considerations in mind, the company submerged its experimental prototype vessel – called the *Leona Philpot*, after a character in the video game *Halo* – about 1 kilometre off the Pacific coast of the US. The submersible data centre, housed in a sealed steel capsule about 2.5 metres in diameter, is now back on *terra firma* and is being analysed by Microsoft after its aquatic tour of duty.

Another goal for the project is environmental sustainability. The *Leona Philpot* might be cooled by ocean water, and Microsoft says electricity to run the systems could be provided by co-located offshore power generation facilities. The next steps for the researchers are to build a new data centre vessel three times larger than the *Leona Philpot*.

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## SELF LEVITATING DISPLAYS



An interactive swarm of flying 3D pixels (voxels) developed at Queen's University's Human Media Lab is set to revolutionize the way people interact with virtual reality. The system, called BitDrones, allows users to explore virtual 3D information by interacting with physical self-levitating building blocks.

BitDrones is the first step towards creating interactive self-levitating programmable matter. The work highlights many possible applications for the new technology, including real-reality 3D modeling, gaming, molecular modeling, medical imaging, robotics and online information visualization.

Dr. Vertegaal and his team at the Human Media Lab created three types of BitDrones, each representing self-levitating displays of distinct resolutions.

- "PixelDrones" - equipped with one LED and a small dot matrix display.

- "ShapeDrones" - augmented with a light-weight mesh and a 3D printed geometric frame, and serve as building blocks for complex 3D models.
- "DisplayDrones" - fitted with a curved flexible high resolution touchscreen, a forward-facing video camera and Android smartphone board.

All three BitDrone types are equipped with reflective markers, allowing them to be individually tracked and positioned in real time via motion capture technology. The system also tracks the user's hand motion and touch, allowing users to manipulate the voxels in space.

The BitDrone system will allow for remote telepresence by allowing users to appear locally through a DisplayDrone with Skype. The DisplayDrone would be capable of automatically tracking and replicating all of the remote user's head movements, allowing a remote user to virtually inspect a location and making it easier for the local user to understand the remote user's actions.

The future drones would measure no more than a half inch in size, allowing users to render more seamless, high resolution programmable matter.

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