

VIVA INSTITUTE OF TECHNOLOGY

VIRAR



BOOTSTRAP

THE NEWSLETTER OF THE DEPARTMENT
OF COMPUTER ENGINEERING

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STAFF INCHARGE: TATWADARSHI PN

EDITOR: CSI VIVA-VIT TEAM

Vision

To develop competent citizens who will be valuable contributors in the field of technology and science.

Mission

1. To create an environment which will stimulate research, creativity and innovation.
2. To provide students with comprehensive knowledge of the latest developments in Computer Engineering.

Program Educational Objectives

1. To equip students with solid foundation for solving hardware and software problems as per the needs of the corporate sector.
2. To develop the ability among the students to understand and interpret technical issues which is important for creating dynamic software.
3. To create an environment for inculcating leadership quality by nurturing raw talent.
4. To empower students and faculties for research and innovations.
5. To inculcate ethical, behavioural, organisational and social values.

OCULUS RIFT

The **Rift** is an upcoming virtual reality head-mounted display, being developed by Oculus VR. During its period as an independent company, Oculus VR raised US\$2.4 million for the development of the Rift. The consumer version of the product is expected to become available in April 2015



Through Meant to be Seen (MTBS)'s 3D discussion forums. Palmer Luckey, the founder of Oculus, developed the idea of creating a new head-mounted display that was both more effective than what is currently on the market, and inexpensive for gamers.

Electronic Entertainment Expo, Id Software announced that their future updated version of *Doom 3*, which would be known as BFG Edition, would be compatible with head-mounted display units. During the convention, Carmack introduced a duct taped head-mounted display based on Luckey's Oculus Rift prototype, which ran Carmack's own software. The unit featured a high speed IMU and a 5.6-inch (14 cm)

LCD display, visible via dual lenses that were positioned over the eyes to provide a 90 degrees horizontal and 110 degrees vertical stereoscopic 3D perspective:

On March 25, 2014, Facebook announced that it had agreed to buy Oculus VR for \$400 million in cash, \$1.6 billion in Facebook stock, and an additional \$300 million subject to Oculus VR's meeting certain financial targets in a transaction expected to close in the second quarter of 2014.

****POLAROID SOCIALMATIC CAMERA****

The good old Polaroid brand isn't dead yet — with the Polaroid Socialmatic, the concept has now become a product. It has a camera with a 14-megapixel camera, a 4.5" touchscreen LCD display that runs Android, a Zero Ink printer, and wi-fi and Bluetooth capabilities. At \$299, it will be a tough sell for those who already have a smartphone in their pockets.

The two main features that differentiate the camera from a smartphone are the printing and sharing aspects. After taking a picture with the back camera or the 2-megapixel front camera, you can share it on Facebook, Twitter or Pinterest using the built-in software on a Wi-Fi network. At the same time, you can print a 2x3 little photo.

As the camera runs Android, many users will install Instagram right away. The Socialmatic will become a dedicated Instagram camera.



ADR Studio first revealed the Socialmatic concept design back in 2012. A year later Polaroid announced that the chunky photo sharing and printing camera would hit stores by the close of 2014. When Gizmag visited the company's booth at Photokina, that shipping target looks to have been refined again, with a *possible* "in time for the holidays" window being replaced by a *probable* Q1 2015 release.

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****SAMSUNG GALAXY S5****

Samsung Galaxy S5 comes with an Apple iPhone 5S-like biometric fingerprint sensor button. The phone is dust and water-resistant, sports a faster camera and offers fitness-related features including a heart rate sensor.

Galaxy S5 sports a 5.1-inch Super AMOLED (1080 X 1920p) display. It is IP67 certified dust and water-resistant.

Powered by a 2.5GHz quad-core processor and 2GB RAM, the Galaxy S5 will come in 16GB and 32GB internal storage variants, which will be expandable up to 64GB through micro SD card. It sports a 16MP rear camera and a 2.1MP front-facing camera. The rear camera is capable of capturing 4K video at 30 frames per second.

The smartphone runs on Android 4.4.2 KitKat and will be available globally starting April.

****MOBILE COLLABORATION****

Mobile collaboration is technology-based process of communicating using electronic assets and accompanying software designed for use in remote locations. Newest generation hand-held electronic devices feature video, audio, and telestration (on-screen drawing) capabilities broadcast over secure networks, enabling multi-party conferencing in real time (although real time communication is not a strict requirement of mobile collaboration and may not be applicable or practical in many collaboration scenarios)

Differing from traditional video conferencing, mobile collaboration utilizes wireless, cellular and broadband technologies enabling effective collaboration independent of location, permitting true mobile collaborative possibilities. The scope of mobile collaboration takes into account a number of elements that continue to evolve in their sophistication and complexity: video, audio and telestration capabilities, conferencing and telepresence systems, collaboration tools, transmission technologies, and mobility.

****AGILE ROBOTS****

Computer scientists have created machines that have the balance and agility to walk and run across rough and uneven terrain, making them far more useful in navigating human environments. It requires quickly adjusting where your foot will land and calculating how much force to apply to change direction suddenly.

Meet Atlas, a humanoid robot created by Boston Dynamics, a company that Google acquired in December 2013. It can walk across rough terrain and even run on flat ground. Although previous robots such as Honda's ASIMO and Sony's diminutive QRIO are able to walk, they cannot quickly adjust their balance; as a result, they are often awkward, and limited in practical value. Atlas, which has an exceptional sense of balance and can stabilize itself with ease, demonstrates the abilities that robots will need to move around human environments.

Marc Raibert, cofounder of Boston Dynamics, pioneered machines with "dynamic balance"—the use of continual motion to stay upright—in the early 1980s. As a professor at Carnegie Mellon University, he built a one-legged robot that leaped around his lab like a pogo stick possessed, calculating with each jump how to reposition its leg and its body, and how aggressively to push itself off the ground

with its next bound. Atlas demonstrates dynamic balance as well, using high-powered hydraulics to move its body in a way that keeps it steady. The robot can walk across an unsteady pile of debris, walk briskly on a treadmill, and stay balanced on one leg when whacked with a 20-pound wrecking ball. Just as you instinctively catch yourself when pushed, shifting your weight and repositioning your legs to keep from falling over, Atlas can sense its own instability and respond quickly enough to right itself. The possibilities opened up by its humanlike mobility surely impressed Google. Though it's not clear why the company is acquiring robotics businesses, it bought seven others last year, including ones specializing in vision and manipulation.

