VIVA INSTITUTE OF TECHNOLOGY

VIRAR

BOOTSTRAP

THE NEWSLETTER OF THE DEPARTMENT OF COMPUTER ENGINEERING

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Vision

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

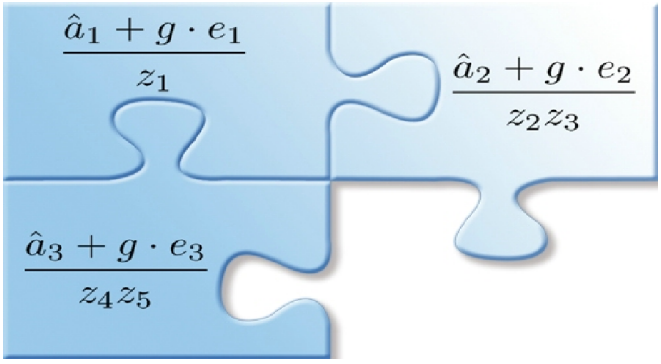
Mission

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.

COMPUTER SCIENTISTS DEVELOP 'MATHEMATICAL JIGSAW PUZZLES' TO ENCRYPT SOFTWARE



Computer science experts have designed a system to encrypt software so that it only allows someone to use a program as intended while preventing any deciphering of the code behind it. This is known in computer science as "software obfuscation," and it is the first time it has been accomplished.

CLA computer science professor Amit Sahai and a team of researchers have designed a system to encrypt software so that it only allows someone to use a program as intended while preventing any deciphering of the code behind it..Sahai, who specializes in cryptography at UCLA's Henry Samueli School of Engineering and Applied Science, collaborated with Sanjam Garg, who recently earned his doctorate at UCLA and is now at IBM Research; Craig Gentry, Shai Halevi and Mariana Raykova of IBM Research; and Brent Waters, an assistant professor of computer science at the University of Texas at Austin. Garg worked with Sahai as a student when the research was done.

BAXTER: THE BLUE-COLLAR ROBOT

Rethink Robotics' new creation is easy to interact with, but the innovations behind the robot show just how hard it is to get along with people.

Baxter is an industrial robot built by Rethink Robotics, a start-up company founded by Rodney Brooks. It was introduced in September 2012.

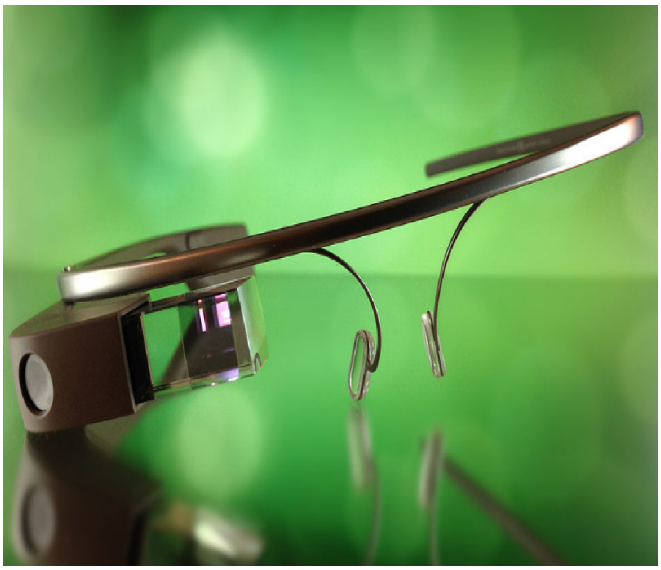
Baxter is a 3-foot tall (without pedestal; 5'10" - 6'3" with pedestal), two-armed robot with an animated face. It weighs 165 lbs without the pedestal and 306 lbs with the pedestal.

It is used for simple industrial jobs such as loading, unloading, sorting, and handling of materials. Brooks stated that Baxter was designed to perform the dull tasks on a production line.[2] It is intended to be sold to small and medium-sized companies.

Baxter also has sensors surrounding its head that allow him to sense people nearby. The sensors around its head also give Baxter the ability to adapt to its environment, unlike other industrial robots which will either continue to do their one task repeatedly, or will shut down and stop working at the slightest change in their environment. For example, Baxter is adaptive enough to know that it cannot continue with its job if it drops a tool, whereas some robots will simply continue to attempt to perform their job despite lacking the proper tools.Baxter runs on the open-source Robot Operating System on a regular, personal computer which is embedded in its chest.

Baxter is also different from other industrial robots because it can learn. A worker could teach Baxter how to perform a task by moving its hands in the desired motion and having Baxter memorize them. Extra dials, buttons, and controls are available on Baxter's arm for more precision and features. Any regular worker could program Baxter and it only takes a matter of minutes, unlike usual industrial robots that take extensive programs and coding in order to be used This also means Baxter can be taught to perform multiple, more complicated tasks.This is due to a motor driving a spring, and that spring driving Baxter's arm instead of just a motor driving its arms. Extra sensors and cameras within Baxter's hands allow it to pay attention to detail while working with its hands.

GOOGLE GLASS

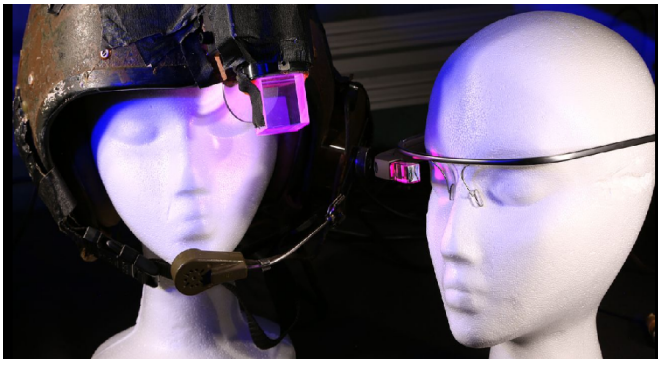


Google Glass is a type of wearable technology with an optical head-mounted display (OHMD). It was developed by Google with the mission of producing a mass-market ubiquitous computer.Google Glass displays information in a smartphone-like hands-free format. Wearers communicate with the Internet via natural language voice commands. Google started selling Google Glass in the USA on April 15, 2014 for a limited period of time for $1500, before it later became officially available to the general public on May 15, 2014 for the same price. Before that users were required to receive invitations before they could try Google Glass.Google provides four prescription frame choices for $225.00 U.S and free with the purchase of any new Glass unit. It is necessary to remove a small screw in order to move the Google Glass from one frame to another. Google entered in a partnership with the Italian eyewear company Luxottica, owners of the Ray-Ban, Oakley, and other brands, to offer additional frame designs.Google Glass was developed by Google X, the facility within Google devoted to technological advancements such as driverless cars.

Google Glass is smaller and slimmer than previous head-mounted display designs.

The Google Glass prototype resembled standard eyeglasses with the lens replaced by a head-up display. In the summer of 2011, Google engineered a prototype that weighed 8 pounds (3,600 g); it is now lighter than the average pair of sunglasses.

In April 2013, the Explorer Edition was made available to Google I/O developers in the United States for $1,500.



A Glass prototype seen at Google I/O in June 2012.The product began testing in April 2012.Sergey Brin wore a prototype of the Glass to an April 5, 2012, Foundation Fighting Blindness event in San Francisco..

SUPERGRIDS

High-voltage DC power lines can efficiently transport electricity over thousands of kilometers and for long distances underwater, outperforming the AC lines that dominate transmission grids now. But for a century, AC prevailed because high-voltage DC could be used only for point-to-point transmission, not to form the integrated grid networks needed for a stable electricity system.

The Swiss conglomerate ABB has solved the main technical hurdle to such grids. It has developed a practical high-voltage DC circuit breaker that disconnects parts of the grid that have a problem, allowing the rest to keep working.

DC grids would be more efficient at connecting far-flung sources of renewable energy, allowing utilities to average out local variations in wind and solar power while bringing power to areas without much sunshine or wind. Solar power from the

Sahara could power cloudy Germany, and wind power from all over Europe could keep the lights on at night. The result: more reliable renewable energy that can better compete with fossil fuels.

COMPUTER ENGINEERING DEPARTMENT AND CSI-VIT

Computer Engineering Department and Computer Society of India's Student's Chapter in VIVA Institute of Technology CSI-VIT Successfully conducted the First ever Technical Festival "IMPERIA" in the college on 5th Oct, 2013. Following events were conducted in the same:

- Laser Phaser
- Bug Fixer
- Blind Coding
- Robo Maze
- Mud Race
- Image Morphing