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NEW HORIZON COLLEGE OF ENGINEERING

Department of Information Science &
Engineering

Infotech Patrika

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Foreword



**Dr. Jitendranath Mungara,
Professor & Head - Information
science and Engineering**

Welcome. This is my first opportunity to speak with you through the departmental technical magazine InfoTech Patrika. It has been an interesting and busy semester for members of the Department. It gives me great opportunity to present this issue of Technical Magazine exclusively by Information Science & Engineering department.

This magazine is one of the ways in which we can disseminate current trends in technology, research & developments.

I would like to request for your active collaboration over the coming months in the development of a shared vision for the department.

I would like to thank all my colleagues for their tireless efforts to help the department progress at a very steady pace

Dr. Jitendranath Munaara

About the Department:

Information science and Engineering department focuses on current Information Technology trends, and Domain Specific Applications. The program facilitates the evolution of skills in students to help them attain a higher degree of knowledge, global competency and excellence, for the betterment of the society. The Department of Information science and Engineering at NHCE was established in the year of 2001 and offers graduate and PhD programs. The four year B.E degree equip the students to meet day- to- day Technological advancements of the ever dynamic IT field through adept training on various subjects of curriculum of Information Science and engineering and beyond. The department offers B.E program through autonomous scheme from the year 2015. The department has a total intake of over 380 students with a very good team of highly qualified and talented faculty members including Professors, Associate Professors and Assistant Professors.

Information Science and Engineering course at New Horizon College of Engineering is designed to meet industry standard and cope up with the emerging technology. There is a great emphasis on holistic learning to help the students to make significant contributions at all levels and to meet the expectations of stakeholders. The department is well known for its research excellence in various competitive areas of Information Science. Students are made to involve vigorously in research activities. The department provides industry collaborated courses for the students.

CONNECTIVITY WOVEN INTO EVERYDAY ESSENTIALS

From the very first touch, Jacquard feels familiar. That's because our focus has always been to add a new layer of connectivity and interactivity to things you already know, love, and use every day. By starting with raw materials, such as yarns and textiles, we found ways to provide unprecedented access to the digital world through items that aren't typically considered to be technology. So your most beloved items - a favourite jacket, a pair of shoes, and the bag you take everywhere - will keep you connected to your digital life in new, seamless ways.



The Jacquard platform offers an entirely new experience. Clothing can now understand various touch gestures, activate digital services, and respond with light and haptic feedback.

Jacquard is designed with real world purpose in mind. For the Levi's jacket, we considered what gestures and abilities made the most sense for urban commuters. Each element of the experience is carefully considered and tested to make sure that using this new platform is purposeful and natural. Designed to be extendable, Jacquard can support all sorts of future interactions and use cases.



Ms.Bhushita S, V sem ISE

LIGO and Virgo make first detection of gravitational waves produced by colliding neutron stars

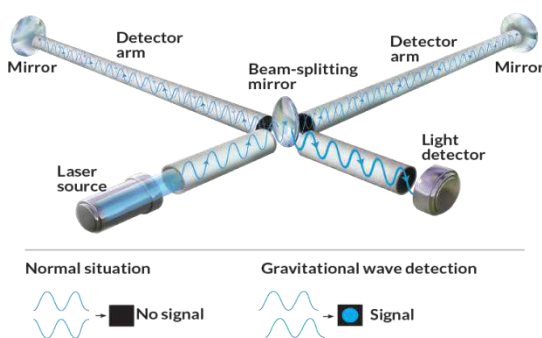
For the first time, scientists have directly detected gravitational waves — ripples in space-time — in addition to light from the spectacular collision of two neutron stars. This marks the first time that a cosmic event has been viewed in both gravitational waves and light.

The discovery was made using the U.S.-based Laser Interferometer Gravitational-Wave Observatory (LIGO); the Europe-based Virgo detector; and some 70 ground- and space-based observatories.



Neutron stars are the smallest, densest stars known to exist and are formed when massive stars explode in supernovas. As these neutron stars spiralled together, they emitted gravitational waves that were detectable for about 100 seconds; when they collided, a flash of light in the form of gamma rays was emitted and seen on Earth about two seconds after the gravitational waves. In the days and weeks following the smash-up, other forms of light, or electromagnetic radiation — including X-ray, ultraviolet, optical, infrared, and radio waves were detected. By - Sowmya Ghosh

AirBar - Make Your Screen Come Aliv



AirBar is a small plug-and-touch bar that attaches magnetically to the bottom of your machine's display. When connected to your laptop via an available USB port, AirBar starts emitting a beam of invisible light across your screen that is used to track touch screen movements and gestures.

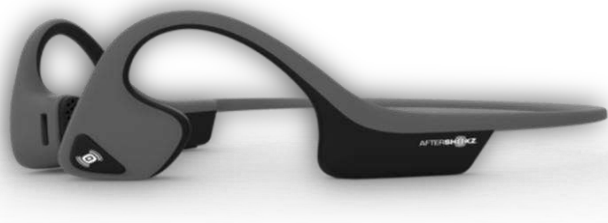
Given a stromomers an unprecedented opportunity to probe a collision of two neutron stars. For example, observations made by the U.S. Gemini Observatory, the European Very Large Telescope, and the Hubble Space Telescope reveal signatures of recently synthesized material, including gold and platinum, solving a decades-long mystery of where about half of all elements.

- Mr. Anirudh Pancham

Bone Conduction Headphones



The movements and gestures are then translated into corresponding inputs, making you able to use all the gestures including poking, pinching, swiping, zooming and scrolling around with your hand, in the same way, like on a touchscreen PC.



Traditional headphones send sound through your eardrums. Bone conduction headphones send sound through the bones of your skull.

Instead of speakers, After Shokz headphones have transducers that send vibrations through your cheekbones to your cochleas, so your eardrums are free to take in your surroundings.

It does seem pretty weird, but it's something we do all the time. When we hear ourselves talking, laughing, or coughing, we're hearing through a combination of air conduction (through our ear drums) and bone conduction (through our bones). With bone conduction, you're free to enjoy your music while keeping your ears open to anything, from the pleasant sounds of nature, to potential dangers and risks.

- Ms. Antorika

BigDog, the First Advanced Rough-Terrain Robot

BigDog has four legs that are articulated like an animal's, with compliant elements to absorb shock and recycle energy from one step to the next. BigDog is the size of a large dog or small mule.



BigDog's on-board computer controls locomotion, processes sensors, and handles communications with the user. BigDog's control system keeps it balanced, manages locomotion on a wide variety of terrain, and does navigation. Sensors for locomotion include joint position, joint force, ground contact, ground load, a gyroscope, LIDAR, and a stereo vision system. Other sensors focus on the internal state of BigDog, monitoring the hydraulic pressure, oil temperature, engine functions, battery charge, and others.

BigDog runs at 10 kmh, climbs slopes up to 35 degrees, walks across rubble, climbs muddy hiking trails, walks in snow and water, and carries up to 150kg loads.

Development of the original BigDog robot was funded by DARPA. Work to add a manipulator and do dynamic manipulation was funded by the Army Research Laboratory's RCTA program.

- Mr. Roshan Gupta

Driverless cars of the future: Autonomous Cars



Autonomous cars use a variety of techniques to detect their surroundings, such as radar, laser light, GPS, odometry and computer vision. Advanced control systems interpret sensory information to identify appropriate navigation paths, as well as obstacles and relevant signage. Autonomous cars must have control systems that are capable of analyzing sensory data to distinguish between different cars on the road.



- Ms. Aishwarya B

The potential benefits of autonomous cars include reduced mobility and infrastructure costs, increased safety, increased mobility, increased customer satisfaction and reduced crime. Specifically a significant reduction in traffic collisions; the resulting injuries; and related costs, including less need for insurance. Autonomous cars are predicted to increase traffic flow; provide enhanced mobility for children, the elderly, disabled and the poor; relieve travellers from driving and navigation chores; lower fuel consumption; significantly reduce needs for parking space, reduce crime, and facilitate business models for transportation as a service, especially via the sharing economy. This shows the vast disruptive potential of the emerging technology.

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