Towards a culture of innovation

Student teams from BITS Pilani, IIT Bombay and IIT Varanasi develop ingenious products and solutions, win Ericsson Innovation Awards India

Vikram Chaudhary

Recently Ericsson, in association with the Foundation for Innovation and Technology Transfer (FITT), announced the winners of second edition of its 'Innovation Awards India' at IIT Delhi. (FITT is the industry interface of IIT Delhi.) The awards were presented by Paolo Colella, head of Region India, Ericsson. The three winning teams—from BITS Pilani, IIT Bombay and IIT (BHU) Varanasi—will be supported by Ericsson India financially to the extent of ₹13 lakh each towards incubating the winning projects at any IIT-approved incubators.

Winning projects

While the BITS Pilani team focused on human recognition using GAIT analysis—the systematic study of human motion—and other body features based on Microsoft Kinect sensor, the IIT Bombay team has attempted to create an LED beacon and receiver module. The IIT Varanasi team, on the other hand, has tried its hand at an advanced breathalyser helmet.

Human recognition using GAIT analysis: Anuj Bansal, Chandradeo Arya and Deeptanu Choudhary from BITS Pilani have attempted to introduce an innovative way for human recognition using GAIT and other body features. They said their attempt is an alternative to the current system based on face, fingerprint and iris. "Our system, when fully ready, will be able to recognise people from a distance without requiring them to stop for a fingerprint scan or facial recognition," the team said. It can be used in security establishments such as defence areas, research labs, government offices and banks. It would ideally act as an additional alternative to fingerprint and facial recognition. "The final product will be a complete software solution which will require Kinect and a small computing device," the team added.

LED beacon and receiver module: Dheeraj Kotagiri, Rishabh Gupta, Sambhav Jain, Vijay Sankar and Nithin Murali from IIT Bombay have come up with an idea which uses an LED beacon to broadcast data in a particular area and illuminating it at the same time. The team is essentially developing the next generation of beacons using Li-Fi technology. "From a layman's perspective, the product is an LED light source which would be connected to a receiver that would transmit data in real time," the team said, adding, "The idea is to develop a compact receiver for beacons which could be integrated with smartphones to push location-based information and data." Since the beacon will use visible light to transmit data, it will not only serve the purpose of a beacon, but also double up as an illuminating device.

Advanced breathalyser helmet: Naman Singhal, Shubham Jaiswal, Rishabh Babeley, Devendra Gupta and Jagjeet Shyamkunwar from IIT Varanasi want to make Indian roads safer for both riders and pedestrians. The team is working on a smart helmet integrated with a two-wheeler. "We are designing a helmet, without wearing which you will not be able to start your two-wheeler. It also has an alcohol sensor installed, and if it finds that your alcohol level is above permissible limits, in that case too your two-wheeler won't start," the team said. In case of an accident, the helmet is programmed to send the location of the victim and an automated SMS to predefined contacts such as ambulance, family and friends.

Colella said that with the Ericsson Innovation Awards, the company aims to encourage the culture of innovation within India's premier engineering institutes and support talented minds to develop relevant solutions for the benefit of industry. "This initiative seeks to promote innovation beyond mere recognition," he said, adding, "India has a strong talent pool and some of the best academic institutions. A robust entrepreneurial ecosystem that is conducive to innovation will provide a strong impetus to young innovators."

The winning teams will be mentored by Ericsson during incubation phase. "The patents for their innovation remain with the students," Colella added.

These awards were initiated in 2014 to promote the spirit of innovation among engineering students at select IITs. In its second year, the awards have been rolled out to IITs across Delhi, Kanpur, Kharagpur, Mumbai, Roorkee, Guwahati, Bhubaneswar, Mandi and Hyderabad, as well as IISc Bangalore, BITS Pilani, IIIT Gwalior, IIIT Delhi and IIT (BHU) Varanasi.

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