The Zenith

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Contents:

Bosch to offer lower-cost sensors for self-driving cars

Bosch has announced that it has developed a sensor that lets cars “see” a three-dimensional view of the road, aiming to lower the cost of technology that could help to speed up the development of self-driving vehicles. Bosch said the internally-developed lidar sensor will cover both long and close ranges on roads and in cities and will work in conjunction with the company’s own camera and radar technologies.

Lidar technology, which uses light-based sensors to generate a three-dimensional view of the road, is still a young technology and remains, in many cases, too expensive for mass market use. The news that Bosch has developed its own lidar sensor, to provide more depth data that would allow self-driving cars to detect the distance to other road users like pedestrians, is seen as a major development in this space and the company's involvement in a market traditionally dominated by numerous start-ups could help speed adoption of the technology.

“Bosch is making automated driving a viable possibility in the first place,” Bosch management board member Harald Kroeger said in a statement. Bosch, who will be demonstrating the technology at CES next week, did not provide a timeline, pricing or technology details for its lidar, but a spokesman said the company is working on making the sensors “production ready” and the focus will be on “affordable mass market” technology.

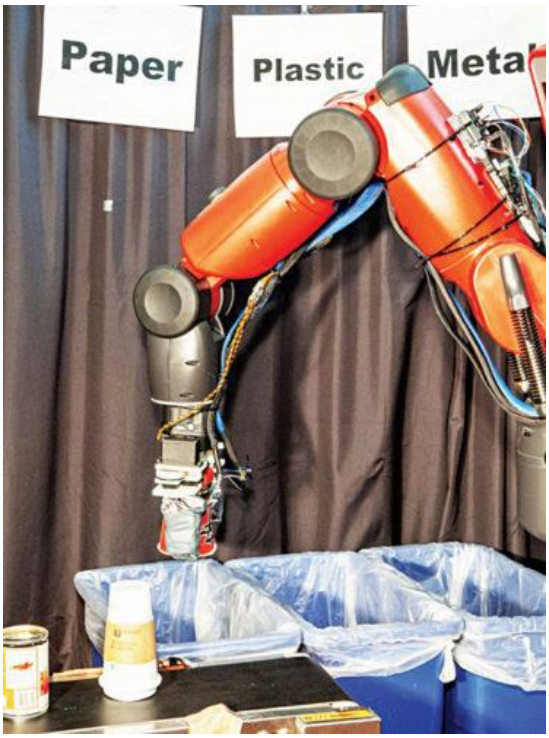
Lidar is currently used by General Motors, Ford and Alphabet's Waymo and Apple. Others are less enthusiastic about adopting lidar, citing a high cost and limited capabilities..

Source: Neil Tyler (www.newelectronics.co.uk)

Robot that can sort recycling by giving it a squeeze

Scientists at Computer Science and Artificial Intelligence Lab at Massachusetts Institute of Technology (MIT) have developed a robot arm with soft grippers that picks up objects from a conveyor belt and identifies what these are made from by touch.

The robot, called RoCycle, uses capacitive sensors in its two pincers to sense the size and stiffness of the materials it handles. This allows it to distinguish between different metal, plastic and paper objects. In a mock recycling-plant setup, with objects passing on a conveyor, RoCycle correctly classified 27 objects with 85 per cent accuracy.



RoCycle uses pincers to pick through garbage and identify what materials each bit contains. It could help reduce how much waste gets sent to landfill (Credit: MIT Technology Review)

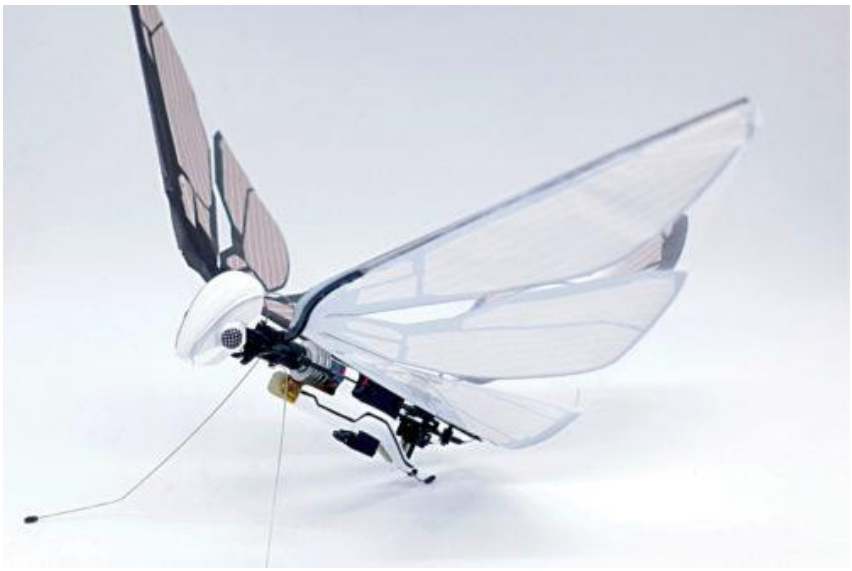
The creators believe that such robots could be used in places like apartment blocks or on university campuses to carry out first-pass sorting of people's recycling, cutting down on contamination. Since the robot picks up items one by one, it is too slow for industrial recycling plants, which are expensive to run and need to process waste quickly to cover costs.

The team is working on combining its touch-based robot with a visual system to speed things up. This robot would scan objects passing by and pick up only those it was not sure about.

MetaFly, a new flying experience

Edwin Van Ruymbeke and his team at BionicBird have developed MetaFly, a remote-controlled ornithopter, and are running a Kickstarter campaign to fund the first production run.

The aircraft can be controlled with a two-channel remote control, and has a range of 100 metres. Speeds up to 18 kilometres per hour can be reached, and the 55mA per hour hybrid lithium-polymer battery gives eight minutes of flight from a 12-minute charge. An upgrade kit available through the campaign lets users bring a power bank along during flights for even longer flying times, as reported by www.engineering.com



Metafly robot (Credit: www.engineering.com)

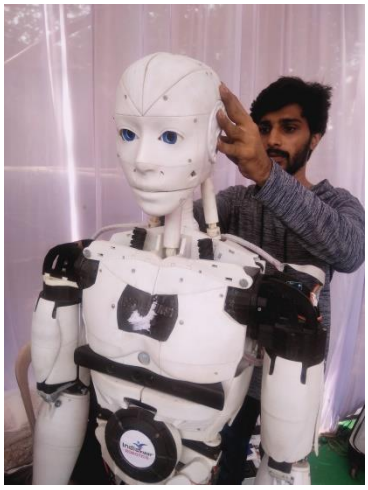
MetaFly has a wingspan of 29 centimetres, length of 19 centimetres and weighs less than 10 grams. The 0.8-watt coreless motor drives a gearbox with a 1/36 reduction. The remote measures 10cm x 15cm. Wings are built from carbon-fibre and liquid crystal polymer, and the tail can be moved up or down to give users more control or speed during flight.

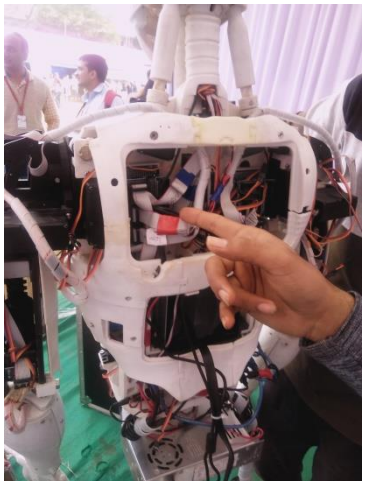
Industrial Training / Seminar/Workshop done by Staff

- Prof. S. D. Patil have completed 15 days industrial training at Indian Railways, Pune Junction under the guidance of Mr. Yogesh Gorane, Sr. Section Engineer.

  Training Topics
  - 5watt 25watt VHF communications
  - Satellite communications
  - ISDN exhachnges and IP exchanges
  - OFC communications, SDH and PDH
  - Station communications
  - Passenger information system like led display, and CCTV

- Prof. R. R. Khinde and Prof. K. S. Navale visited Robotics Exhibition “Technovanza 2019” at VJTI, Mumbai on 27th December 2019.





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Hirabai HaridasVidyanagari, Amrutdham, Panchavati Nashik-422003

Editor: Prof. Dipankar D. Khartad

E-mail: ddkhartad@kkwagh.edu.in

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