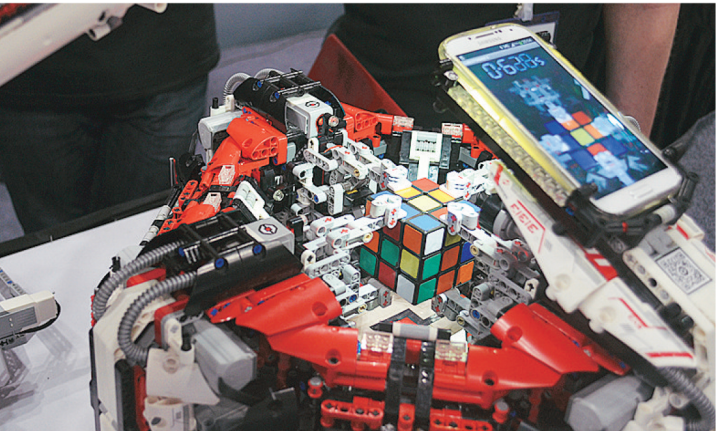


Meet the robots

The 13th edition of the World Robot Olympiad (WRC) was held in India for the first time. At Greater Noida’s India Expo Centre, participants from 54 nations converged to show off their creations. Students, including from India, took part in contests and built robots that helped reduce, manage and recycle waste, which was this year’s theme. Also present were some ‘experts’ with their Lego creations, which drew crowds. **Abhik Sen** takes a look at a few interesting exhibits

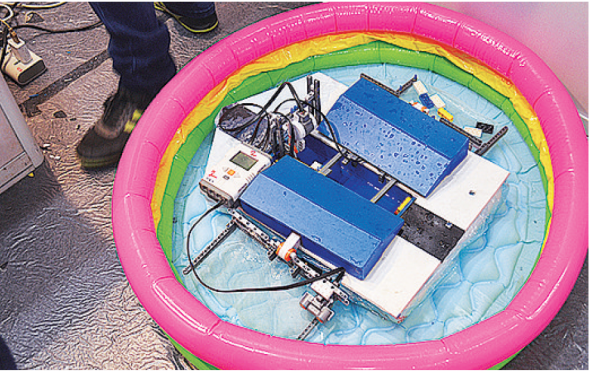
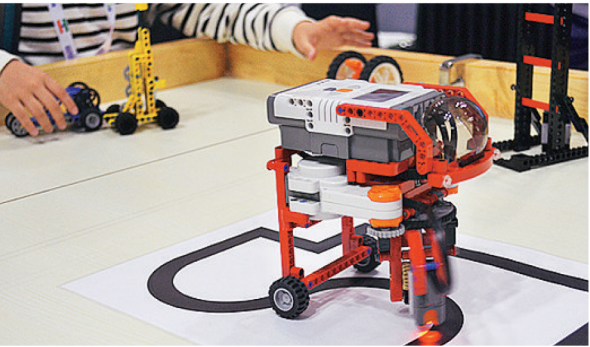


Rubik’s cube champ

This Lego expert from the UK had built two robots: One, a swing arm to pick up a Rubik’s cube and two, a robot to solve the puzzle in record time, using an Android program. You have to see it to believe it — the bot solved the puzzle in just a shade above three minutes.

Simple, yet fun

A Lego “expert” from Japan wowed most with his simple creations — cars, bipeds and even a monkey! What made the stall particularly attractive to children was that they were encouraged to play with the robots.

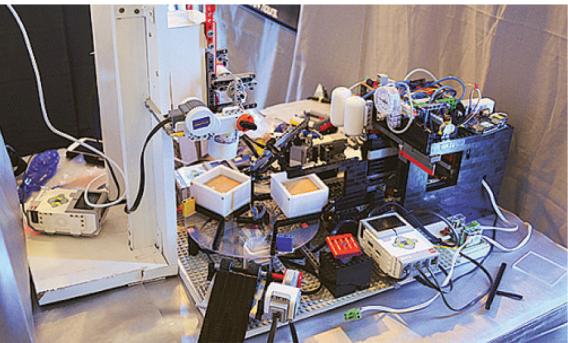
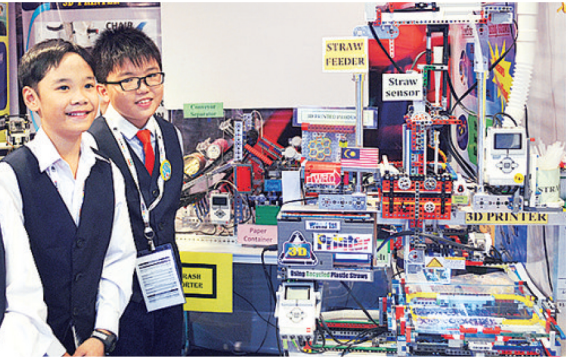


Problem-solving and logic

In this competition, robots had to sort, pick up and place colour blocks at proper places. While it might seem repetitive after a point, it was fun watching the robots do all that by themselves. The icing: an Indian team won the second place in the junior-high category.

From straws to 3D stuff

Most kids (and some of us adults) use straws to sip anything from soda to juice. Naturally, these make a big chunk of waste. Thus, these children from Malaysia have designed an elaborate “plant” to collect the straws, process them and finally use the plastic waste in a 3D printer to make cool stuff.



Compacting garbage efficiently

A team from Germany came with a prototype that ensured the trash was compacted into perfectly identical blocks, for easy loading and transport on a truck.

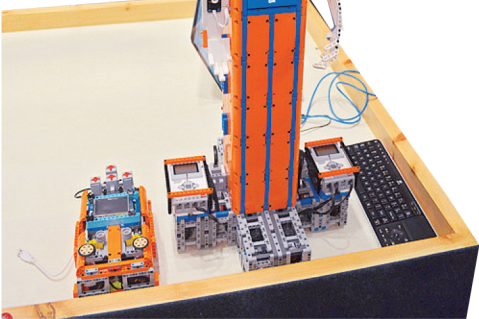
Clean those lakes

Waste on water is a chronic problem these days. No wonder I came across at least three interesting exhibits dealing with the issue. The Mumbai team’s autonomous vehicle collected the plastic in nets, while the caterpillar tracks removed algae from the surface. Using sonar waves, this bot can detect fish and drive them away. The team from Guwahati built a boat bot, with a compactor, to take on more garbage. There was another prototype from Germany, which made a lot of noise as it hauled in plastic bottles.



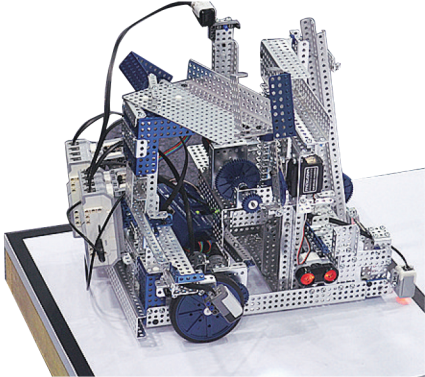
Wall-E meets Wall-E

With the theme of recycling trash, Wall-E was a natural fit. Being a fan of this movie, I was especially interested in the Lego version, on display at one of the experts’ stalls. Seeing my interest, this gentleman casually remarked, “Wall-E, wake up” — and lo and behold, this big yellow box on the table started moving and transformed into a Wall-E robot!



Bot buddy

The younger brother of the sketch-bot expert was getting people to interact with this friendly bot, about the height of its instructor. While the Robot didn’t move, it had a touch screen and a camera, using which it interacted with the kids. Using the camera, the bot could click photos, and if it found a logo it knew, it said so on the screen.



Knock the nine pins

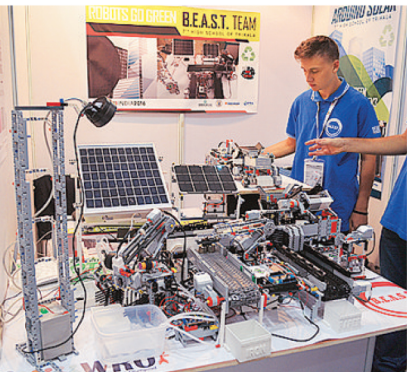
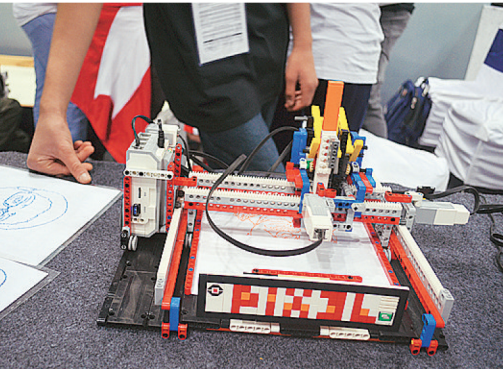
As part of the Advanced Robotics Challenge, teams had to build an autonomous robot that had to pick the ball, spot the pins using a camera and then knock them down. These robots are high-maintenance and need periodic tweaking. When I arrived, a team from Turkey was making... well turkey of the other teams.

Footie fun

It was an Olympiad, but here was a soccer match on. The team? A team of two autonomous robots against another team of two. Win ball, possess, block and score with the infrared ball — quite simple, one would think. I witnessed a match between Germany and Taiwan, which Germany won; and another between Singapore and Russia, which the aggressive robots from the city state won.

Meet the sketch-bot

Arguably among the youngest of experts, these two kids in identical cool Lego hats and black tees could be spotted from far. The elder brother was manning the “sketch-bot” — he had programs to sketch the Taj Mahal and Ganesha, while he said he could get any picture done, given time. The bots were powered by Lego Mindstorms and a Raspberry Pi.



Solar power sorts waste

This team from Greece made an elaborate model to sort waste such as plastic, metals, *et cetera*. Using solar panels to power the waste disposal system, the prototype separates metals using a magnet, while lighter objects are sorted in water.