Kovai students’ robots emerge best in Asian contest

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Robots that could climb tall coconut trees, clean up staircases and rooms and aid wheel-chair bound patients created by city college students have grabbed awards in an Asian contest in Singapore.

Five teams of robotics students from Amrita University have won prizes at the ‘One Moment of Robot Glory Asia 2016’ organized by EDU Studio Solutions in Singapore for their robots. They beat 20 teams in the final round.

The robotic coconut-tree climber named ‘Amaran’ was judged the best mechanical design, and ‘ClePa’, the staircase-cleaning robot, was declared the best marketable design.

The autonomous room-cleaning robot won the second prize in the under-18 category, notably.

All the robots were designed by the students as a part of the Humanitarian Technology (HuT) labs of Amrita University’s department of electronics and communication engineering. The university intends to develop the robots further and introduce them in the market.

G. Harsha, a part of the seven-member student team working on the coconut-tree climber said, “If a man falls while climbing a tree, it may result in serious injuries or even death, resulting in untold grief and financial hardships to his family. The coconut-tree climbing robot thus fulfills a critical need.”

The structure of the coconut tree and the arrangement of coconut bunch posed a major challenge in designing this robot. Some trees are bent and the tree trunks are not of uniform shape too. The coconut bunches are embedded inside the leaves at the treetop. “We had to do repeated field tests and kept making improvements in each of the design iteration of the robot till it worked,” she added.

V. Arsha who worked on the navigational robot explained that this robot is intended to offer a helping hand for the elderly people and stroke and spinal cord injury patients who use wheel chairs. It is cost-effective and overcomes many drawbacks of existing technologies such as voice control, joysticks, etc. which demand physical effort for navigating the wheelchair. “Initially, we faced problems with controlling the jerk due to the sudden transition of the touch-sensor output. Later, the jerk was successfully minimized by controlling the Pulse Width Modulation (PWM); this has ensured a smooth and easy navigation of the wheel chair with hand gestures,” she added.