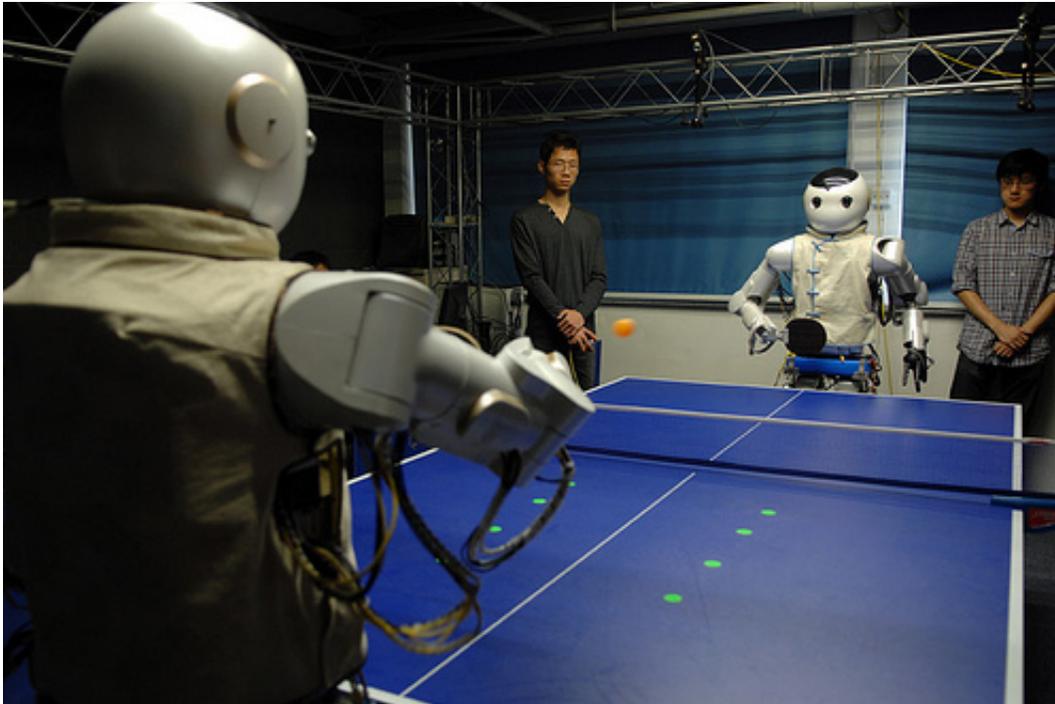


## Ping-pong robots debut in China (w/ video)

October 15 2011, by Nancy Owano

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(PhysOrg.com) -- Last week some oohs and ahhs were in order as two ping-pong playing robots made their debut at Zhejiang University in China. The two robots played against each other and with humans. True, this was not the first time the world witnessed robots playing table tennis. There was Topio, a robot made by Vietnamese robotics firm, TOSY.

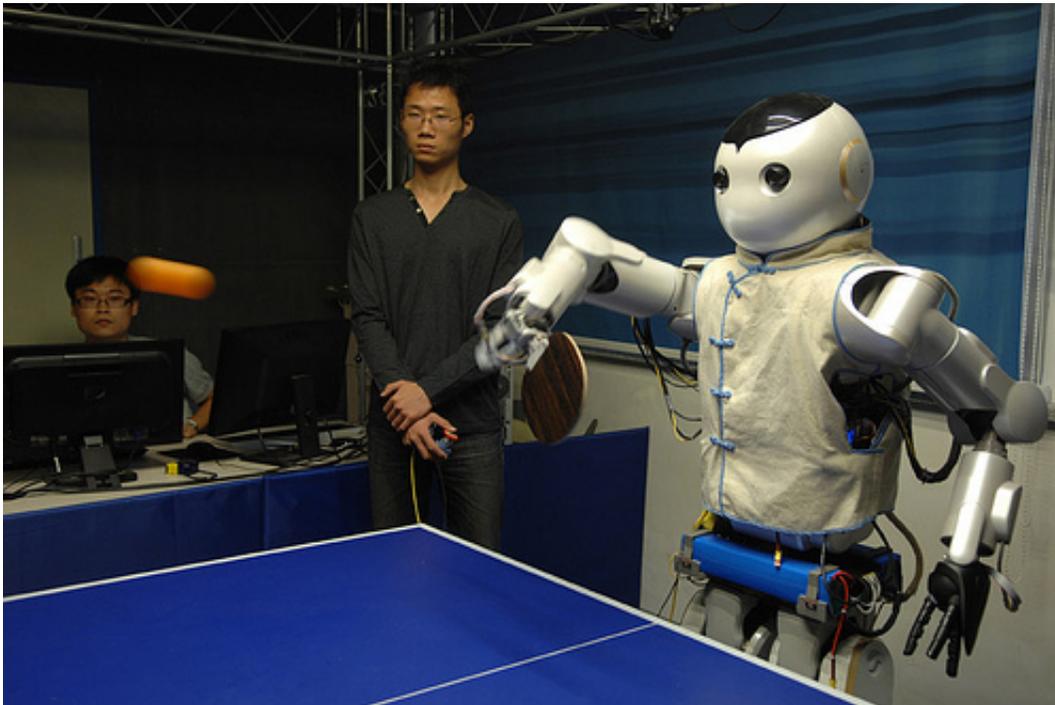
Topio was a Terminator-looking robot with a chiseled torso and

formidable size. Its processors and [artificial neural network](#) were able to analyze the ball's path. There was elsewhere a show of flying quadcopters whacking the ball back to a human player at the Swiss Federal Institute of Technology's Flying Machine Arena in Zurich.

Last week's debut of the robots in China was impressive nonetheless.

The Zhejiang University robots served, returned balls, and scored with the aid of their technology. Each robot has motorized joints that provide backhand and forehand capabilities and a number of arm movements. Each [robot](#) is 1.6 meters tall and weighs 55 kg.

Xiong Rong, the director of the university's Robotics Laboratory, said the 30-joint robots took them four years to develop.



Setting out to create robots who can play a game like ping-pong is challenging enough; the game requires especially fast response times and fast reflexes. The Chinese team responded to the challenge. They gave the robots eye-mounted cameras that capture 120 images per second. The images are transferred to the robots' [processors](#) and they respond, calculating the ball's position, speed, angle, landing position and path. Overall, the university team responsible for the robots is being credited as having come up with an identification and positioning system of enough merit to compete with human players.

If intuition is an edge for human players, the robots use mechanical precision to contend. According to reports, their ability to predict the ball's landing position is quite accurate, with a margin of error of 2.5 cm.

Still, reports say that more advanced ping-pong players with special skills can beat the robots, even with the robots' accuracy and fast speed. The robots cannot perform complicated ping-pong techniques such as slicing and curving.

The [robot](#) program of Zhejiang University is part of a high-tech development plan, designed by the Ministry of Science and Technology, to stimulate the development of advanced technology in biotechnology, information technology and automation. The two robots are described as an exercise to demonstrate the range of possibilities of robotic technologies. The university also aims to develop robots that can do housework.

**More information:** via [Xinhuanet](#)

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