

GLIMPSE OF THE FUTURE

Will robots take over more than our household duties in years to come? **Wang Kaihao** checks out the International Humanoid Robot Olympic Games in Harbin.

Two contestants stare at their screens as they remote control their robots in a fierce fight. Their robots of about 30 cm high — one slightly bigger than the other — are performing a miniature version of *Real Steel*, an American science fiction sports drama, on the one-square-meter arena.

The bigger robot uses a combination blow, but misses its target. It loses balance and falls down. Unfortunately, it fails to stand up within 10 seconds, and was eliminated in the first round of the game.

"It really doesn't matter if my robot wins," says its owner, Serge Vlasov, a graduate student from St. Petersburg-based National Research University of IT, Mechanics, and Optics. "I came here for fun."

Vlasov is one of the participants of China's third annual International Humanoid Robot Olympic Games, held between July 25 and 28, in Harbin, Heilongjiang province. The competition is organized by Chinese Association for Artificial Intelligence (CAAI).

The Russian student is surprised to find more than 500 contestants from 70 universities and institutions all over China and overseas, bringing with them 700-odd humanoid robots. Vlasov says Russia does not have such an annual large-scale national contest.

The games, which is China's largest robot sport meeting, includes 27 categories.

Jia Lei, a junior undergraduate student from Harbin Far East Institute of Technology, is overjoyed that his robot won first place in the six-meter sprint category, at 23.17 seconds.

"It has a very powerful electric motor, which makes it run very fast," says Jia with pride. "But for the longer distance race, it will need another more powerful motor."

The "long distance race" he refers to is a 20-meter-long track.

The robots have sensors to detect the lumps on the track to veer in the right direction toward the finishing line. But along the way, some go off-track. Executive chairman of the event's organizing committee, Hong Bingrong, 77, says when that happens, it means that the motors are inefficient.

"Many contestants assemble these gadgets rather than design their own," says Hong, who is also a professor at Harbin Institute of Technology (HIT) and has been experimenting with robots since 1977. He says about 90 percent of the robots in the contest are of foreign moulds, and South Korean robots are among the most commonly used.

A contestant from Dongguk University in South Korea, Kim Eun-hyun, says the competition was easier than those he had participated in his home country and Europe.

"In the other competitions I've participated, there is a component on embedded software, which encourages creativity. It is a pity that this contest doesn't have that," Kim says.

But the competition saw some new innovations. Hong who also heads the

Chinese division of the Federation of International Robot-Soccer Association (FIRA), says he is delighted to see some domestic teams who have brought their own creations.

For example, Wang Hongpeng, a computer science professor from Shenzhen Graduate School of HIT, brought some robots with embedded computer controller to the competition. These robots did not need remote controllers like the others.

"We hope to commercialize these technology but who is going to invest? The process usually takes longer in China than in some other countries," says Hong.

Since 2008, Hong has also been involved in miniature humanoid robot.

He says a national project to study humanoid robot has been launched more than a decade, and some universities in China have developed human-size humanoid robots with autonomic response capacity. But he opines that studies on humanoid robots will progress faster if the academia pays more attention to miniature ones.

"It's not right to treat them as toys. They are humanoid and should be treated in the same way as the growth of humans — from infancy first."

Hong expects more robots to take on household duties in the near future and that explains why he has added some special items for the first time in the contest, including carrying trays, pulling carts and collecting rubbish.

"Robot is a lovely mechanical spirit which mixes math, electronics, computer science and machinery together," says Li Deyi, chief of CAAI and an academician at Chinese Academy of Engineering. "But people tend to feel disconnected from it in their daily life. We have to create public awareness so that the general public accepts the wider use of robots. That is the aim of this competition."

Hong says he is proud to see a team from HIT presenting a dancing robot on stage at the 2012's CCTV Spring Festival Gala. "Dancing requires a lot of coordination using different parts of a robot. If we can understand the technical details of each function, it could lead to further understanding of other technical fields," Hong explains, adding that CAAI organized its first nationwide humanoid robot dancing contest in Fujin, Heilongjiang province, on July 30.

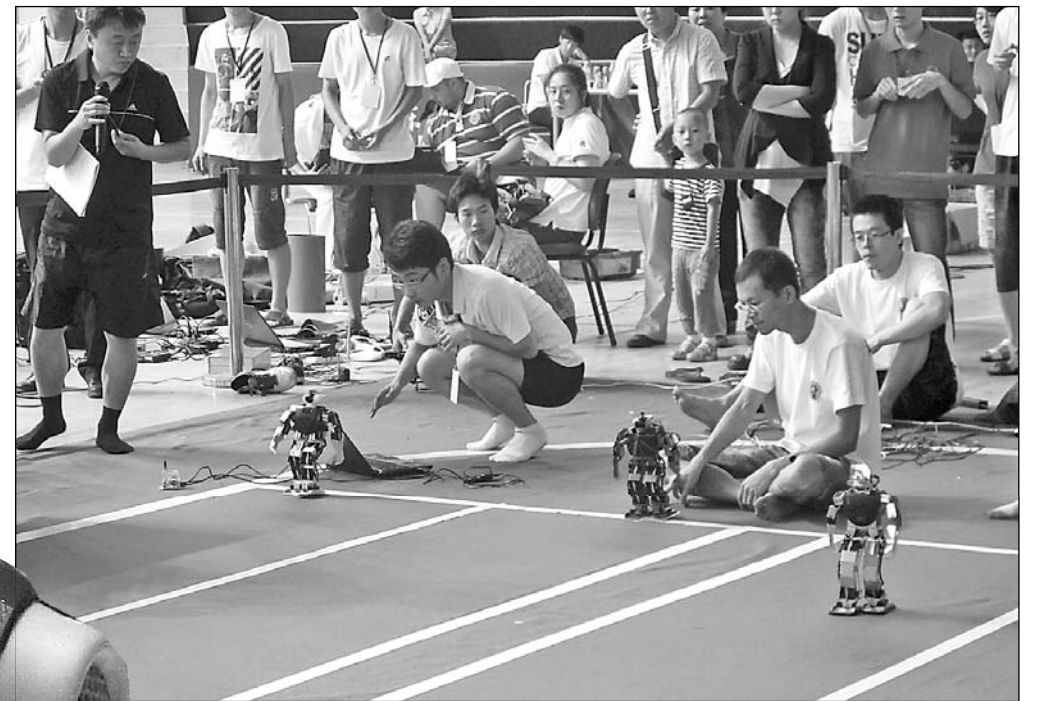
One of the participants is Yan Xin, 19, a student of HIT, who is also a member of the institute's Innovative Center — a club to encourage students to participate in the study of robot

sports. There are now 46 members, mostly undergraduates.

Yan says his team slept very little for a whole week to prepare for the contest. Their hard work paid off when his team won five out of nine categories in the humanoid robot dancing contest.

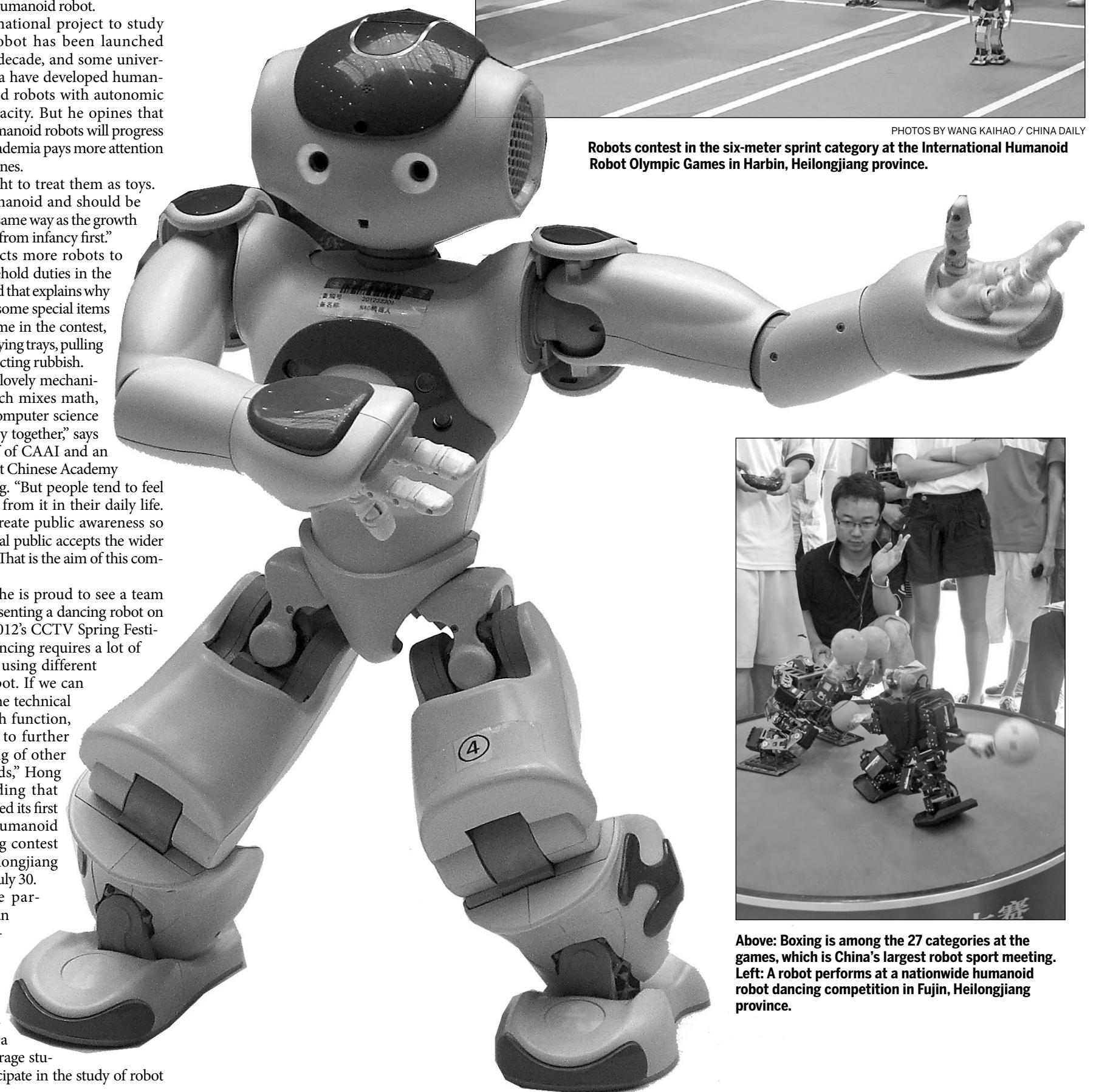
Hong says he is happy with the creativity of the young contestants in the contest. "We need the inspiration of more young people. I'm 77 years old, and I cannot be a general without an army. I want to retire, but it is not the right time yet," he says.

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PHOTOS BY WANG KAIHAO / CHINA DAILY

Robots contest in the six-meter sprint category at the International Humanoid Robot Olympic Games in Harbin, Heilongjiang province.



Above: Boxing is among the 27 categories at the games, which is China's largest robot sport meeting. Left: A robot performs at a nationwide humanoid robot dancing competition in Fujin, Heilongjiang province.

A woman of substance shares the recipe of her success



Tang Ruiren recalls former chairman Mao Zedong's visit to her family in 1959 before a picture of the meeting.

By LIU XIANGRUI in Xiangtan, Hunan
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Tang Ruiren, 83, thought she would remain an ordinary farmer forever.

But a leap of faith some 30 years ago, changed her life. With only 1.70 yuan (27 cents), she started a small stall selling porridge to tourists who started pouring into Shaoshan village, in Hunan province, to visit former chairman Mao Zedong's home.

"I earned more than 3 yuan on the first day," says Tang, who used to live opposite Mao's former residence. "That's four times what an ordinary farmer earns a day."

Today, Tang owns more than 300 restaurants throughout China and abroad, with her signature dish — pork braised in brown sauce — which is also Mao's favorite food.

Born in a poor family, she and her brother begged for a living until she got married at 14 and became a farmer. Her husband was always away from home, serving in the army. Tang says she had to support the family on her own, which made her courageous.

When she first started her porridge stall, she got flak from her neighbors. They opined that Chairman Mao's fellow villagers should not become entrepreneurs, which is considered capitalistic.

"I regained my confidence with the encouragement of some guests who said that it's nothing shameful to earn money with one's own hands," shares Tang, who is now bedridden because of fractured bones on her body and legs.

Three years after she started her business, Tang's family saved more than 10,000 yuan — a considerable amount then. From a small porridge stall, Tang expanded her venture into a home restaurant, taking advantage of the location of her home.

She hung a huge picture of her with Mao in the middle of her restaurant, which attracted many curious diners including foreigners and celebrities. Through the years, Tang has even picked up some simple phrases in different languages to explain the significance of the photograph and her dishes to her patrons.

All her restaurants now have portraits and bronze statues of Mao. One particular photo always draws attention — a photo of Mao with her and her son.

"This picture is very precious to my whole family," Tang says, recalling her excitement when the late leader paid a visit to her family and chatted with them when he returned home in 1959.

"I was a farmer who never went to school. I'm grateful to Chairman Mao for my comfortable life," the gray-haired woman says.

For decades, Tang has been paying it forward. She has sponsored a few hundred students from poor families and adopted dozens of orphans.

Hu Aihui, 46, who used to be a farmer and now works in Tang's restaurant, is grateful to Tang for supporting her son through university and for offering her a job.

"The work is simple and I've a better income now," Hu says. "Granny Tang is like our own mother and all the employees feel at home here."

In recent years, Tang established two foundations to help the elderly and the disabled respectively.

To those around her, Tang is a cheerful and open-minded woman. She was always quite fashionable and loves wearing colorful clothes and high-heels. Tang used to greet her foreign

guests with simple English words like "please come in" and "good bye," until she was bedridden.

"Mother requires all of us to operate the business honestly, and she regards our restaurants as windows to Shaoshan," says Tang's daughter Mao Taozhi, who is helping to manage the company.

"She hardly complains and is always strong and optimistic, even though she endured a lot of hardships," says Mao Taozhi. Tang's son died in a car accident a decade ago.

When Tang was diagnosed with cancer a few years ago, it did not stop her from working.

"My way to drive away sadness is to find something to do," says Tang, who relocated her original restaurant to a new location, in respond to town planning. "I don't agree with those who say I should retire and enjoy life now that I'm more than 80 years old. I always find joy in doing things."

Feng Zhiwei contributed to the story.

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