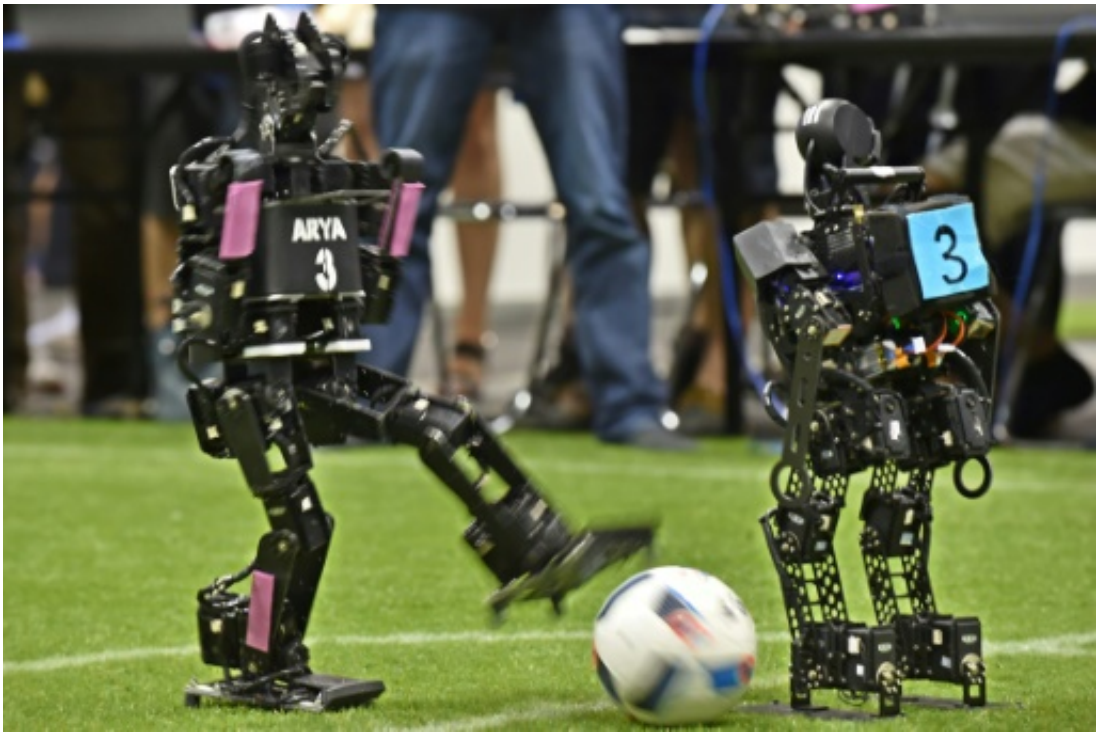
Watch out Messi, here come the footballers at RoboCup

July 30 2017, by Harumi Ozawa



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With steely focus, player number 3 scored a stunning opening goal in the first few minutes of the high-stakes football match between a dominant Bordeaux and their plucky Chinese opponents.

But as the crowds cheered, the pint-sized player, known as Arya, showed none of the customary swagger of triumphant strikers. In fact, robot number 3 and its teammates showed no emotion at all as they continued to exterminate their rivals' hopes of victory at RoboCup 2017 in Japan.

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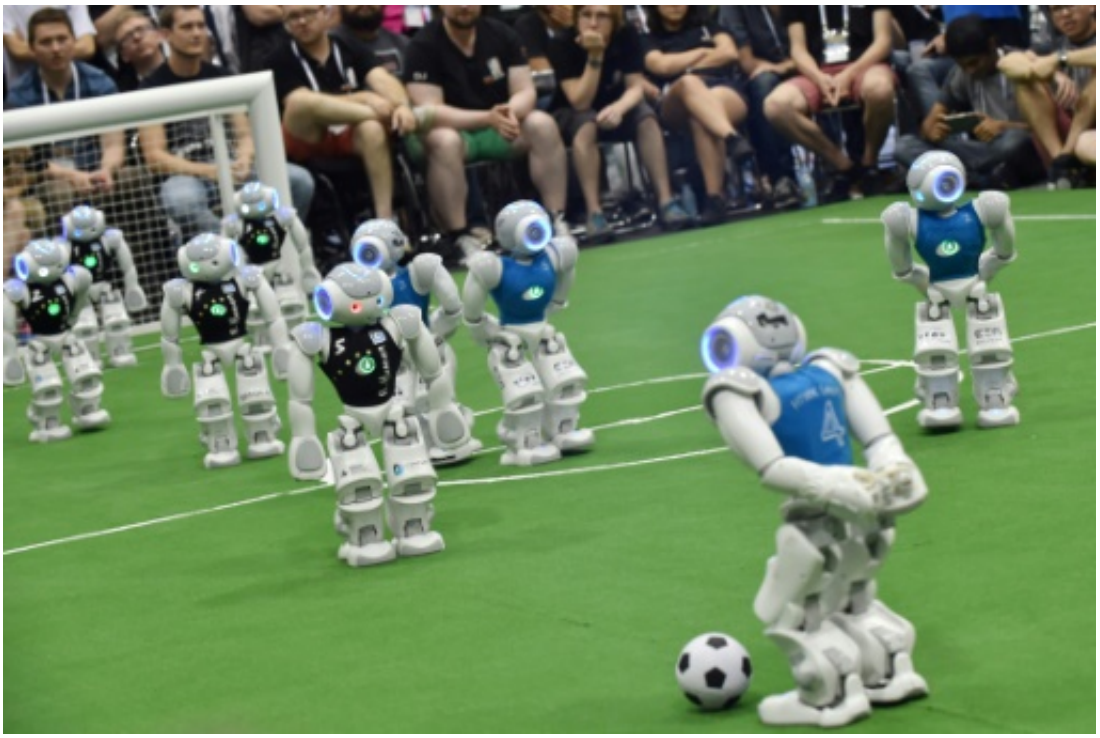
Ranging in design from humanoids with human faces to more skeletal contraptions, the robots were programmed to be self-directed and played strategically without being given instructions.

The robots "see" using a camera installed in their heads, while installed with artificial intelligence (AI) to recognise the spacing and objects in the sight.

The annual championship, which was held in the central Japanese city of Nagoya, started 20 years ago when a computer beat the top human player in chess, "a big event which prompted computer engineers to set the next goal", said Itsuki Noda, the president of the RoboCup Federation.



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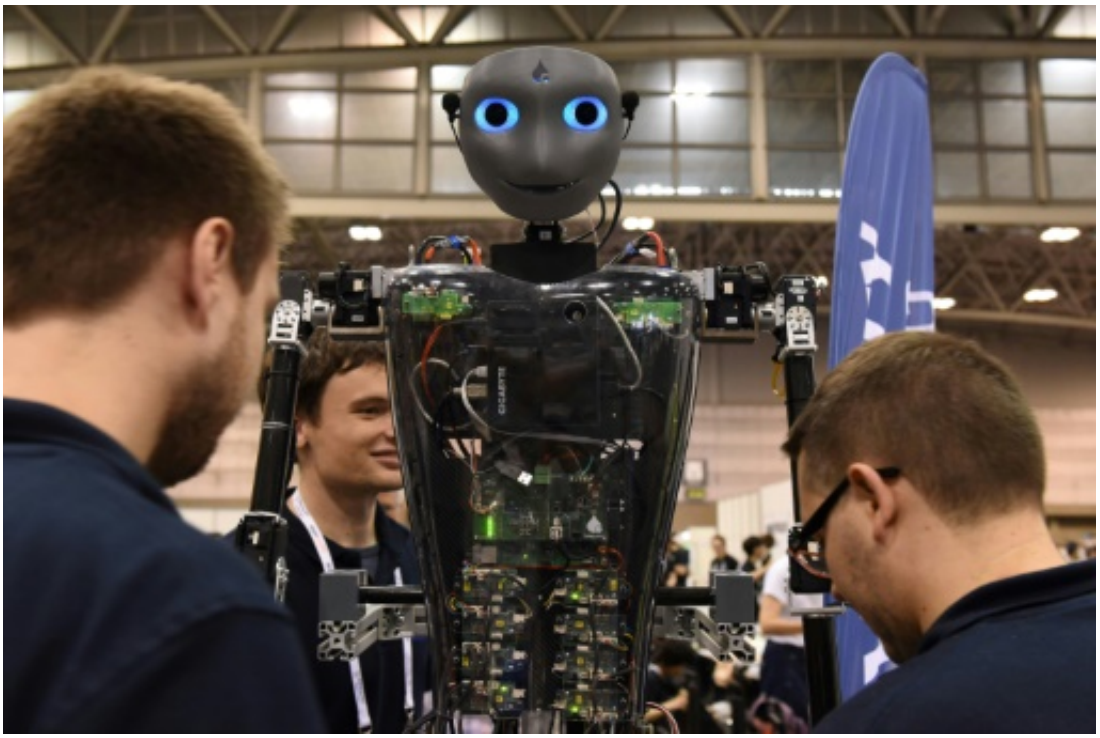
"Unlike chess, football players have to read constantly changing situations and choose the best movements while competing against rivals," he said.

"Also, football requires very good teamwork, which was a completely unresearched area for computer engineers. To solve the riddle, we chose soccer for the robots' next challenge."

Technologies have since advanced so that robots can make autonomous judgements and cooperate with others, said Noda, also the principal research manager at Japan's National Institute of Advanced Industrial Science and Technology.

That ability to play as a team was the "winning factor" in Bordeaux University's triumph, according to associate professor Olivier Ly, who acted as coach and positioned his team's players.

"We developed lots of features on the team play... The robots play together, try to do some passes," he said.



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The Chinese team deployed highly mobile robots that, unafflicted by injury concerns, were quick to bounce back to their feet after falling over.

But it was not enough to match the French team.

As the match ended and the humans celebrated, the lifeless robot players were quietly packed away into suitcases.