



Getting robots to play soccer is really just the beginning.

The standard platform robots (called “Naos”), made by Softbank, are the exact same across all teams; in both cases, the robots are fully autonomous once play begins. To succeed at Robocup is to succeed at artificial intelligence. That means coding and programming for skills as basic as walking and knowing how to get up when you fall down. And, perhaps most importantly, for interaction, such as the ability to work with and against other robots.

“That’s the multi-agent system aspect of it,” says Stone. “We need to make sure that they’re acting as a team. They need to be communicating about who is going to the ball, who’s going to play defense, and who’s going to play offense.”

But once the game starts, Austin Villa’s work is done. That was something Stone was cruelly reminded of during his very first Robocup, back when he was still a student at Carnegie Mellon, where he accidentally programmed his team’s goalkeeper to defend the wrong net.

The stated objective of Robocup is for a team of robots to beat the winner of the human World Cup by 2050. Not coincidentally, the tournament was founded in 1997, the same year the computer program Deep Blue bested Garry Kasparov in chess. But getting robots to play soccer is really just the beginning. Robocup also features competitions for rescue (involving things like natural disasters), industrial applications, and “Robocup at Home”—robots that can serve as domestic assistants. Because, ultimately, its real goal is advancing the technology in ways that benefit society.

One such victory can be seen in Kiva Systems, an order fulfillment company that was purchased by Amazon in 2012. Now called Amazon Robotics, it was created by repeat champion Raffaello D’Andrea and is just one of several spinoff technologies to come out of Robocup.

“The parallel I often make is the Apollo mission,” says Stone. “Arguably that doesn’t give you anything for humanity. But to get there [the moon], there’s a bunch of technologies that you have to develop along the way. Those kinds of technologies could have real-world implications that touch everybody’s day-to-day lives.”

Anything Bot

A global competition featuring soccer-playing robots is advancing technology well beyond the pitch. **BY JASON COHEN**

UT’s Robocup team, Austin Villa, is favored to win this year’s competition in Bangkok.

EVERY UNIVERSITY OF Texas sports fan knows that when it comes to recent championships, the football team is way behind the likes of volleyball and swimming. But the biggest Longhorns dynasty of all? Robots playing soccer.

By the time you read this, professor Peter Stone and his computer science students will be on their way to Bangkok for the annual tournament called Robocup. Their robot soccer squad, Austin Villa, is something of a dynasty, having won nine out of the last 10 championships in Robocup’s 3D Simulation League, as well as one Robocup championship and four U.S. titles in Standard Platform competition (where actual robots play five-on-five soccer on a little indoor field).