Robots to the Rescue

These robots are competing to be the best.

By Sarah Rehman

This robot, known as DRC-HUBO, may one day be used to rescue disaster victims.

In 2011, a powerful earthquake struck Japan. Buildings crumbled. Streets cracked. But the worst was yet to come. The quake triggered a tsunami—a series of powerful waves—that drowned parts of the country and damaged four nuclear reactors in the city of Fukushima.

The damaged reactors leaked out energy harmful to humans. As a result, many medical workers who flocked to the area to rescue people were put at risk.

News of the dangerous rescue efforts quickly spread around the world. Many people wondered if there was a way to better protect rescue workers in the future. That's when scientists spoke up: There is a solution—and it involves robots.

Creative Competition

Since then, the United States Department of Defense has been holding an annual competition open to scientists and engineers from around the world. The challenge? To create robots that can perform life-saving tasks in dangerous situations. The winner of this competition—known as the DARPA Robotics Challenge—takes home a whopping $2 million prize!

In 2015, many futuristic bots entered the competition. Some had legs, while others had wheels. All had to perform the same challenges in a short period of time. The challenges included driving an off-road vehicle, turning valves, and using cordless drills to cut shapes into walls.

While many robots competed, only one dominated the competition. South Korea's humanoid robot, DRC-HUBO, won every challenge. So, what made this bot so successful? "HUBO" is a transformer, meaning it could switch back and forth from wheeled machine to walking on two legs. This ability allowed the robot to keep its balance during all of the challenges, while other robots fell over.

In 2011, workers spent weeks searching through rubble in Japan, while exposed to harmful energy leaked by the reactors.

"Bipedal walking for robots is not yet a stable function," said Jun Ho Oh, a member of the South Korean team. "Legs are required to perform many tasks, but if a robot has to crouch down, it typically falls over."

Wheels on HUBO's knees allowed the robot to keep steady when performing tasks that were close to the ground.

Looking to the Future

So, what's next for South Korea's winning team? They are back at their lab working on

ways to improve HUBO's software program and machine parts. HUBO and the other robots at the competition might not be ready for practical use just yet, but it shows us what robots are capable of.

The competition organizer, Dr. Gill Pratt, said it best: "I see potential for robots to connect with people and create a society where people actually feel better."

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