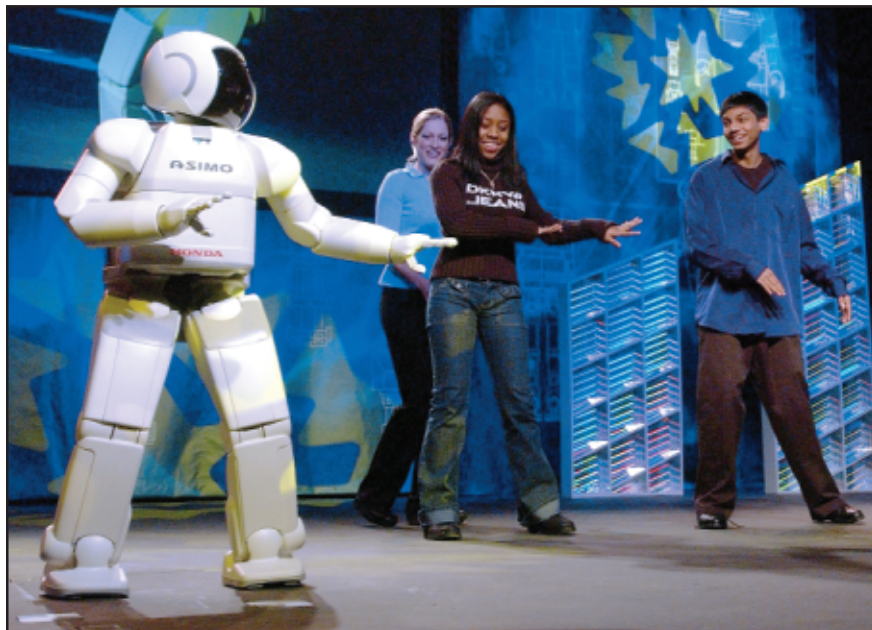


# Bringing Robots to Life

Robots of all shapes and sizes now perform tasks as routine as vacuuming the living room floor and as remarkable as discovering a hydrothermal vent on the ocean floor. Geometry, statistics, graph theory, differential equations, and linear algebra are some of the areas of mathematics that allow navigation and decision making so that robots can function autonomously and do things we either can't, or would rather not, do.

The robot pictured below not only dances but also greets visitors and escorts them to their destinations, providing news and weather updates along the way. Abilities like these require algorithms for vision, pattern recognition, speech recognition, and dealing with uncertainty so that accumulated error doesn't render the robot ineffective. Most researchers think that we are a long way from creating machines that behave like humans, but improving algorithms will improve the capabilities of robots, which have already served in space, in rescues at disaster areas, and in the operating room, where physicians use robotic arms that allow for more precise, less invasive surgery.

For more information: *Robots*, Ruth Aylett



Getty Images



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