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Walking Like a Human

Typically, robots move on wheels, unable to maneuver on rough terrain. Some have many legs. But few walk like humans because engineers have had trouble figuring out an efficient way to get a robot to walk on two legs.

Now, at Cornell University, researchers have achieved stable, human-like walking with a five-inch-tall robot that does amazing things — like taking actual steps down a slope.

Much later in its evolution, when power and control are added, the robot may take engineering closer to an approximation of human walking.

Michael J. Coleman, a graduate student at Cornell's School of Engineering, and his adviser, Prof. Andy Ruina, built the device to keep itself upright while it moves. They believe it is the first robot of its kind that can keep stable while walking down a slope with no control system. They describe it in the April 6 issue of *Physical Review Letters*.

"The project will provide a fundamental understanding of how walking works in humans," Dr. Coleman said. "Walking is very difficult for engineers. No one has nailed it down at all how the brain, with the nervous system, muscles, tissues, can synthesize human locomotion. If it were understood, people could reproduce it with robots."

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