

Boston Dynamics

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- ◎ **Boston Dynamics** is an engineering and robotics design company that is best known for the development of BigDog, a quadruped robot designed for the U.S. military with funding from Defense Advanced Research Projects Agency(DARPA),^{[1][2]} and DI-Guy, software for realistic human simulation.

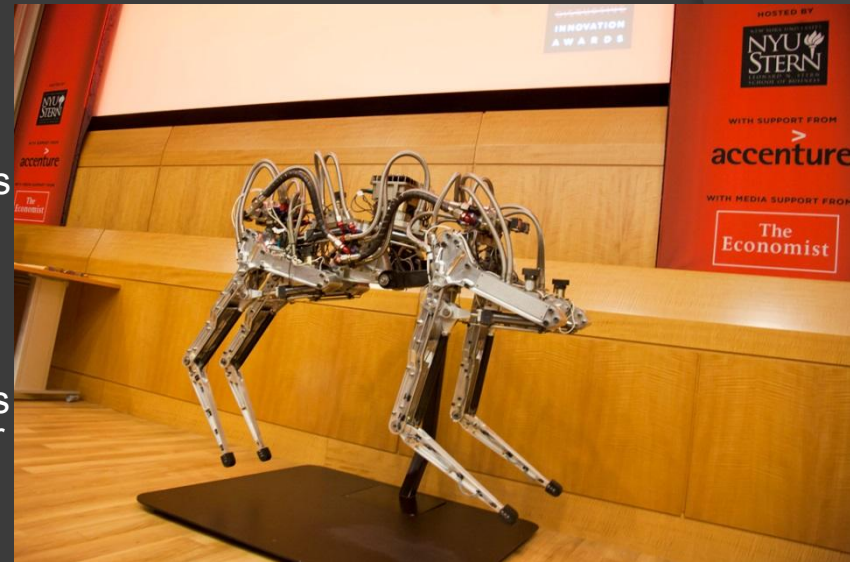
BigDog

- BigDog is a quadrupedal [robot](#) created in 2005 by Boston Dynamics, in conjunction with [Foster-Miller](#), the [Jet Propulsion Laboratory](#), and the [Harvard University Concord Field Station](#).^[7] It is funded by the [DARPA](#)^[8] in the hopes that it will be able to serve as a robotic [pack mule](#) to accompany soldiers in terrain too rough for vehicles. Instead of wheels, BigDog uses four legs for movement, allowing it to move across surfaces that would defeat wheels. Called "the world's most ambitious legged robot", it is designed to carry 340 pounds (150 kg) alongside a soldier at 4 miles per hour (6.4 km/h; 1.8 m/s), traversing rough terrain at inclines up to 35 degrees.^[9]



Cheetah

- The Cheetah is a four-footed robot that gallops at 28 miles per hour (45 km/h; 13 m/s), which as of August 2012 is a land speed record for legged robots. The previous record was 13.1 miles per hour (21.1 km/h; 5.9 m/s), set in 1989 at MIT. Cheetah development is funded by DARPA's Maximum Mobility and Manipulation program¹ This robot has an articulated back that flexes back and forth on each step, thereby increasing its stride and running speed, much like the animal does. The original Cheetah robot runs on a high-speed [treadmill](#) in the laboratory where it is powered by an off-board hydraulic pump and uses a boom-like device to keep it running in the center of the treadmill. A free-running Cheetah that will operate more naturally in the field, named the WildCat, was unveiled to the public on October 3, 2013.² A similar but independently developed robot also known as Cheetah is made by MIT's Biomimetic Robotics Lab³ which, by 2014, could jump over obstacles while running.



SandFlea

- SandFlea is a small robot capable of jumping 30 feet (8 m) straight up. This wheeled robot weighs 11 pounds (4.9 kg), and drives like a remote-controlled car on flat surfaces. The robot uses gyro stabilization to stay level during flight, to provide a clear view from the onboard camera, and to ensure a smooth landing. Sand Flea can jump about 25 times on one charge. Boston Dynamics is developing Sand Flea with funding from the US Army's Rapid Equipping Force (REF). Earlier versions of Sand Flea were developed by Sandia National Laboratory with funding from DARPA and JIEDDO.

