

## Humanoid robot Atlas spreading both excitement and fear

Required Annotations		Student-Created Annotations		Summary / Questions / Reflection	
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Student-created

Required (bold)

Boston Dynamics is a company that makes robots. They made an eye-catching humanoid by the name of Atlas. Humanoids are non-human things that appear to be human. Every time the company releases a video showing Atlas doing new **acrobatic** tricks, the Internet pays attention.

However, until now, most of the robot's movement has remained well within the range of an average human's athletic abilities. For example, jogging, hopping over a log or doing high jumps.

Not anymore.

### Major Improvements In Just A Few Months

The recent video shows major improvements to the robot. In just a few months, Atlas has improved from a middle schooler's athletic skills to the skills of a professional athlete. Atlas stands 4 feet 9 inches tall, weighs 176 pounds and is battery-powered. In the 38-second video, it completes an extremely **nimble** routine, using its legs, arms and waist. The robot demonstrates a **gracefulness** that you might see in a human with years of training.

In the video's description, the company said they created the movements by using new methods that simplify the robot's development. A computer calculation translates descriptions of each motion into movements. Then Atlas tracks the motions using a controller that smoothly blends motions together.

Despite that flow, the robot isn't perfect, according to its handlers.

"Using this approach, we developed the routine significantly faster than previous Atlas routines," the company wrote. It also enabled them to reach a performance success rate of about 80 percent.

A few hours after the video was posted online, it had been watched 1.5 million times and there were thousands of comments. Many suggested the robot's improved athleticism was evidence that humankind's power over machines is coming close to an end.

"So we just going to keep acting like we never seen *Terminator*?" one commenter wrote. *Terminator* is a science fiction movie made 35 years ago about a dangerous **cyborg**.

"Absolutely amazing! I can smell the future where robots are roaming in the streets with us!" posted another commenter.

### Mimics Movements Of Humans And Animals

In recent years, Boston Dynamics has become known for two things. One, creating robots whose movements **mimic** humans and animals. Many find their accuracy surprising and concerning. The second reason is posting mysterious videos of these robots online without warning. The videos quickly go viral and spread a mixture of excitement and terror over the rapid rise of self-operating machines.

In recent years, the company has made four-legged robots with names like Spot, Wildcat and BigDog. These robots can do tasks such as open doors, carry heavy loads and run nearly 20 miles per hour. The company's most popular product appears to be Atlas, the robotic athlete. It calls Atlas "the world's most dynamic humanoid robot."

The robot is guided by 3-D vision. It also uses LiDAR, short for Light Detection

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And Ranging, a sensor that uses a laser to measure the distance between objects. With this technology, the compact robot can drag nearly 25 pounds. The company says Atlas can also handle objects in its environment, cross rough land, keep its balance when pushed and get back up when tipped over.

As recently as three years ago, Atlas was recorded awkwardly **treading** through the snow at a slow speed. At this time, its mechanical body did not have the agility and fluidity it has now.

### **Previously Awkward, Now Jogs Across Grass**

Curiosity about Atlas increased last year when Boston Dynamics posted a video clip on YouTube. In it, the previously awkward robot goes for a jog in a grassy area. You can hear the distinct sounds created by the robot's movements. The sounds are similar to the noise a photocopier makes. The video seemed to surprise many viewers, including the newspaper called the Daily Mail. The newspaper was reporting on Atlas's physical accomplishment at the time.

The paper wrote, "If you thought you'd be able to run away from the terrifying new breed of robots, bad news."

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## **Questions**

1. Which section of the article BEST describes the technology that enables Atlas to perform various tasks?
    - a) Introduction [paragraphs 1-3]
    - b) "Major Improvements In Just A Few Months"
    - c) "Mimics Movements Of Humans And Animals"
    - d) "Previously Awkward, Now Jogs Across Grass"
  2. Which piece of evidence from the article BEST explains how Boston Dynamics generates attention for its robots?
    - a) Boston Dynamics is a company that makes robots. They made an eye-catching humanoid by the name of Atlas.
    - b) "Absolutely amazing! I can smell the future where robots are roaming in the streets with us!" posted another commenter.
    - c) The videos quickly go viral and spread a mixture of excitement and terror over the rapid rise of self-operating machines.
    - d) The paper wrote, "If you thought you'd be able to run away from the terrifying new breed of robots, bad news."
  3. Which of the following MOST influenced Boston Dynamics' ability to improve Atlas?
    - a) the use of battery power to ensure Atlas could complete its routines
    - b) the computer calculations used to create routines for Atlas
    - c) the changes in dimension that allowed Atlas to be more nimble
    - d) the \$1.5 million dollars in revenue it received from its videos of Atlas
  4. How did the videos of Atlas affect viewers?
    - a) The videos caused jealousy among viewers since Atlas could perform routines most humans could not do.
    - b) The videos caused controversy among viewers as different news outlets took a stance on Atlas.
    - c) The videos caused panic among viewers who had seen movies about the dangers of powerful robots.
    - d) The videos caused discussion among viewers about the potential effects of living with advanced robots like Atlas.
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