PRESENTATION

Robotics

ATLAS - ROBOTS

Our Team

Group 7

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Outline

INTRODUCTION

What are robotics, robots and robotics technology?
who is ATLAS?

PROCESS

What is "Dynamic Blance"?
How does it work?
The next generation

BENEFITS

How has Robotics made life easier?
Advantages of ATLAS

DRAWBACK

What challenges does ATLAS face?

what is Robot?

A programmable machine that is parallel to a living being and has the potential to work and move independently. Such as walking or rolling on wheels and performing intricate actions. Like; moving objects or grasping it.

what is Robotics?

The relationship between science, engineering and technology gave birth to a machine called robots. It is also known as the replacement of human actions. The humanoid structure and actions of robot. Often thought like a caricature of the real thing.

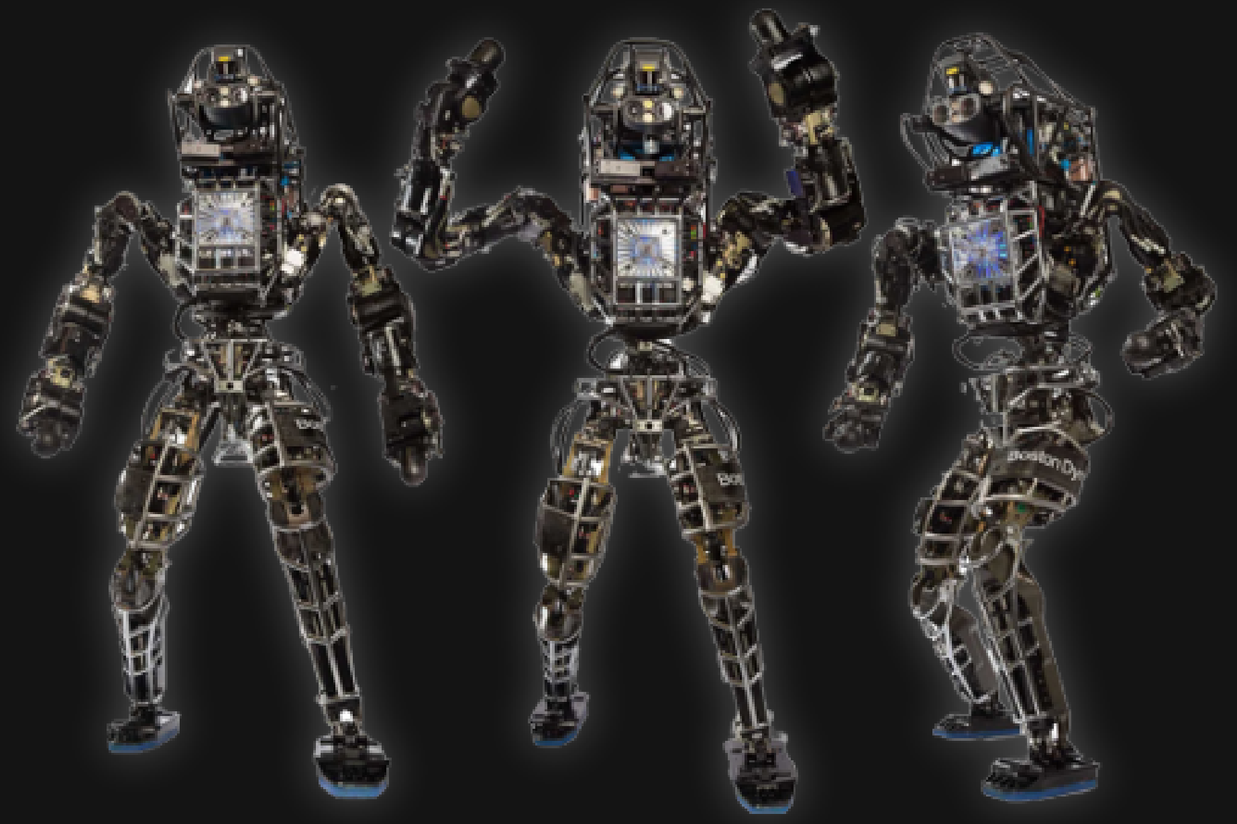
Can a robot walk and balance itself?

Even in the digitalized era, walking of robots seem an exceptional accomplishment in the field of **biomechnical engineering**. For the human-like machine it needs a balance and the power to be in a stable position. It requires the efforts to think where the foot will land and estimating the level of force.

Who is "ATLAS"?

Introducing you all Atlas, a human-like machine that was first created by **Boston Dynamics**. When we begin talking about it s capabilities then it can walk over irregular paths and find it easy to run over straight grounds.

Marc Raibert



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What is "Dynamic Balance" ?

The use of continual motion to stay upright

In the early 1980s, **Marc Raibert** is the **first person introducing dynamics balance**. This show **how to aggressively to push itself off the ground with the next bound**.

Dynamic balancing is a method through which we **balance the moving parts of a machine,** or **piece of industrial machinery**. To do this, we rotate these parts at high speeds. When we do this we are able to gain a measurement of the imbalance within each individual rotating component.

For example, ATLAS, BigDog, etc.

How does the Atlas work?

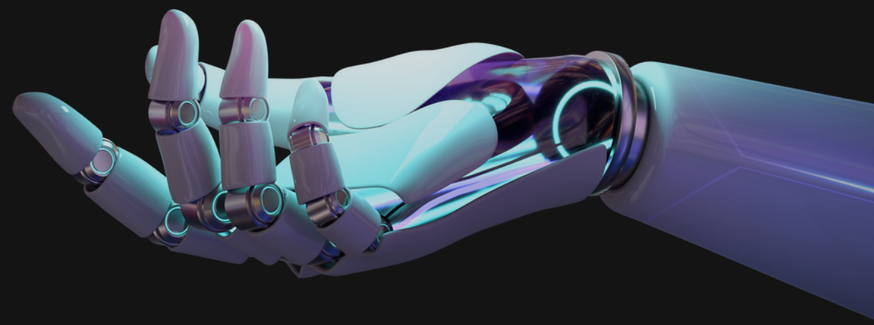
HOW DOES IT WORK?

By high-powered hydraulics, Atlas bases on the dynamic balance to **move its body with keeping steady walk**.

Like humans, Atlas can **sense its own instability** and **respond quickly** enough to right itself. when pushed, it **shifts its weight** and **reposition its legs** in order not to fall over.

RESULTS:

Atlas can walk across an unsteady pile of debris, walk briskly ona treadmill, and stay balanced on one leg when whacked with a20-pound wrecking bal



THE NEXT GENERATION

Designed to operate **both outdoors and inside buildings**. Able to sense obstacles and negotiate rough terrain autonomously or under teleoperation. Two-handed mobile manipulation. Electrically powered and hydraulically actuated. High strength-to-weight ratio and large workspace.

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Benefits of Robotics

01

Healthcare

improve patient outcomes and reduce healthcare-costs

02

Manufacturing

increase efficiency

03

Education

promote STEM learning

04

Others

Assisting with mobility, Providing companionship, Performing household tasks, Monitoring health

Benefits of Atlas

02

Improved safety

By performing tasks that are dangerous or difficult for humans to do

03

Better healthcare outcomes

assist with a range of tasks, from surgery and rehabilitation to patient monitoring and care

01

Increased efficiency and productivity

performing a wide range of tasks that might otherwise require significant human labor.

04

Enhanced education and research, Increased accessibility

For people with disabilities or mobility impairments or the elderly, Atlas has the potential to provide increased accessibility and independence

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what are challenges Atlas faces?

- Titanium limb
- Noise pollution
- Durability
- Speed
- Cost
- Power supply
- Sensing and perception

Summary

- Robot:
  Robotics:
- Atlas is
- Dynamics Balance is the use of continual motion to stay upright
- Atlas bases on the dynamic balance to move its body with keeping steady walk, sense its own instability and respond quickly enough to right itself.
- Benefits of ATLAS: increased efficiency and productivity, improved safety, better healthcare outcomes, and enhanced education and research, Increased accessibility
- Drawbacks of Atlas: Powersupply, sensing and perception, durability, speed, and cost

Resource Page

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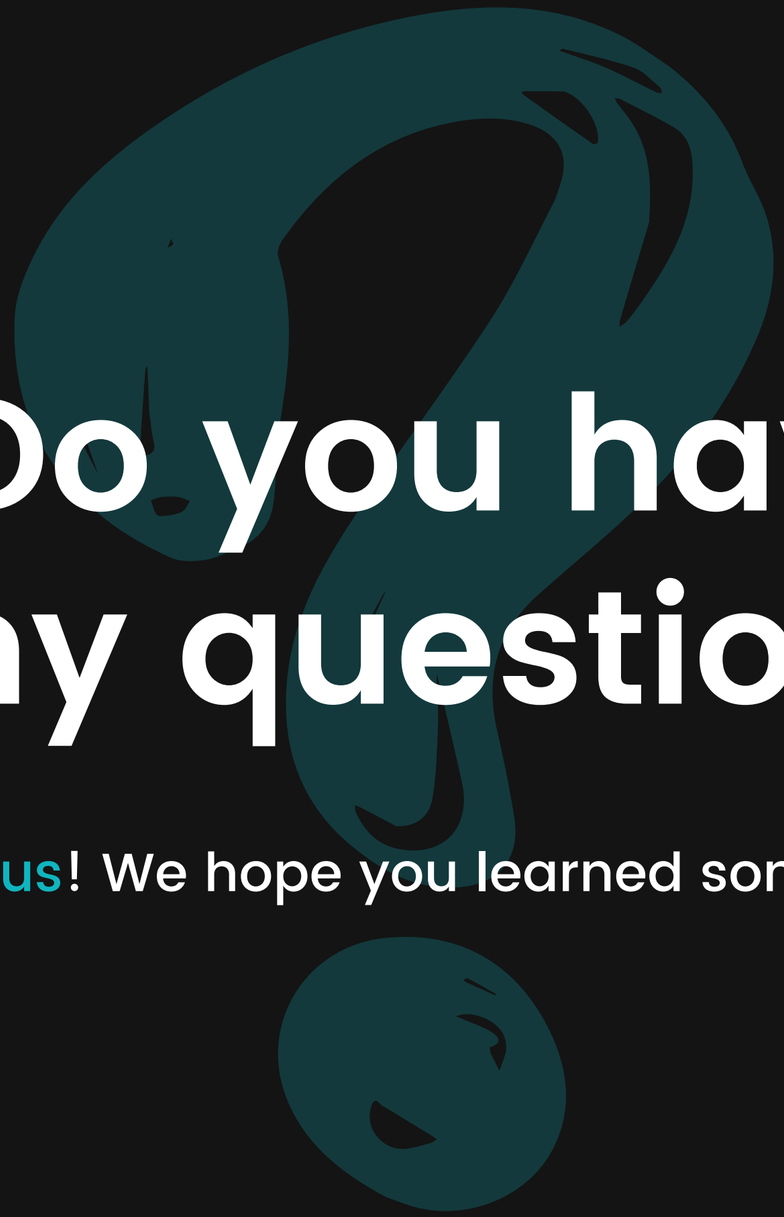

Do you have any questions?

Send it to us! We hope you learned something new.