
Robotics

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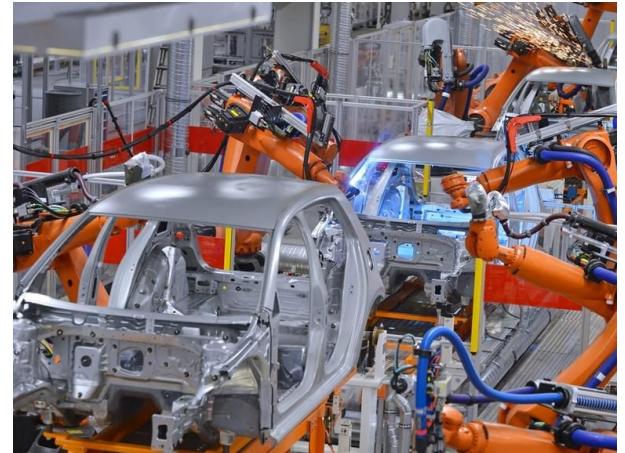
What is a robot?

“A machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer.”

Fun Fact: “The Word Robot Comes From The Czech Word Robota Which Means Slave-Like labor.”

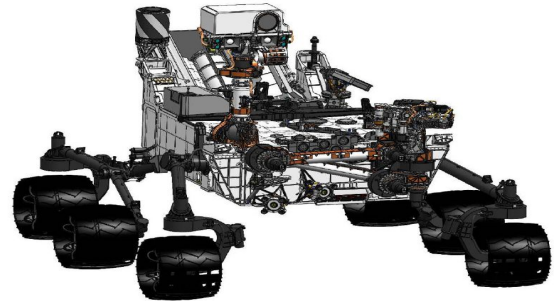
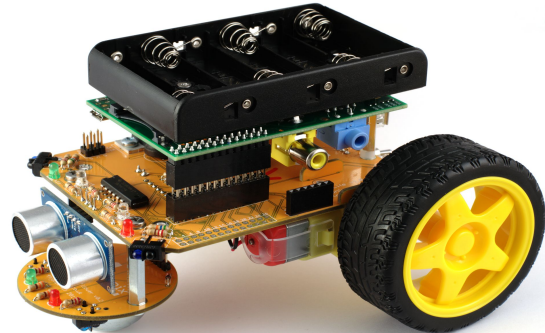
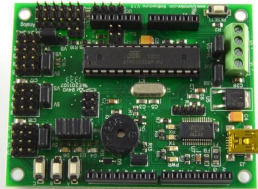
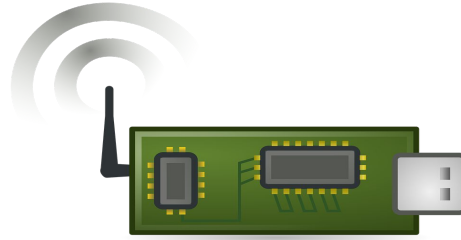
What are robots used for?

- Robots are made to help do tasks more efficiently.
- They take away the repetitive jobs from humans so we can focus on more important things!



Parts of a Robot

- Controller
- Motors
- Sensors (cameras, thermometers, microphones, light detection and ranging (LIDAR), etc.)



Isaac Asimov's "Three Laws of Robotics"

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Famous Robots (Fiction)

- BB-8
- C-3PO
- R2-D2
- Bender
- Optimus Prime

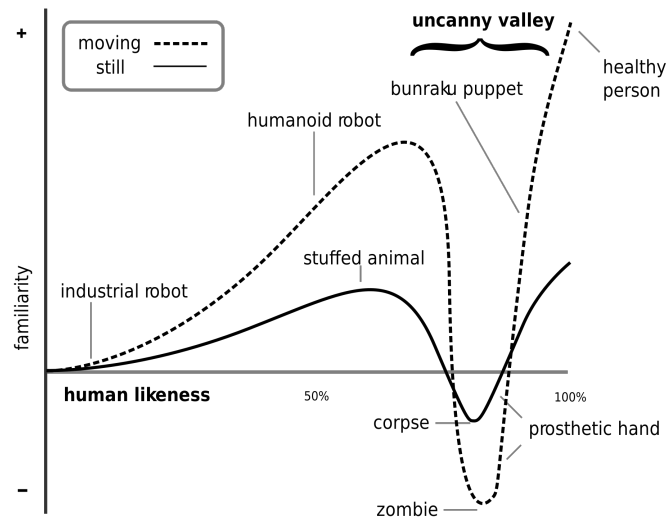


Famous Robots (In Real Life)

- Honda ASIMO
- Hanson Robotics Sophia
- NASA Valkyrie

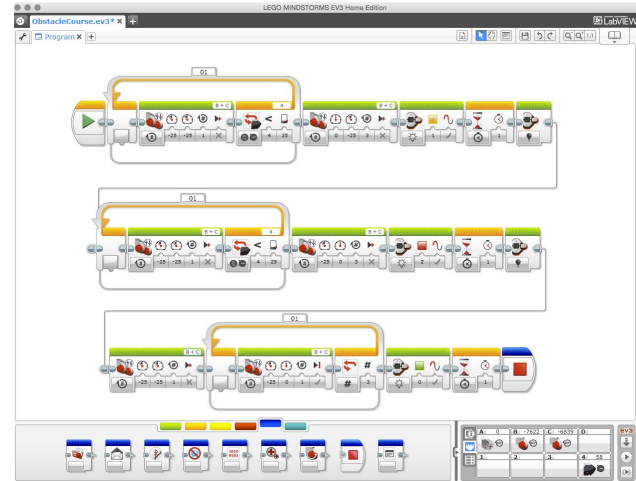


Uncanny Valley



LEGO Mindstorms EV3

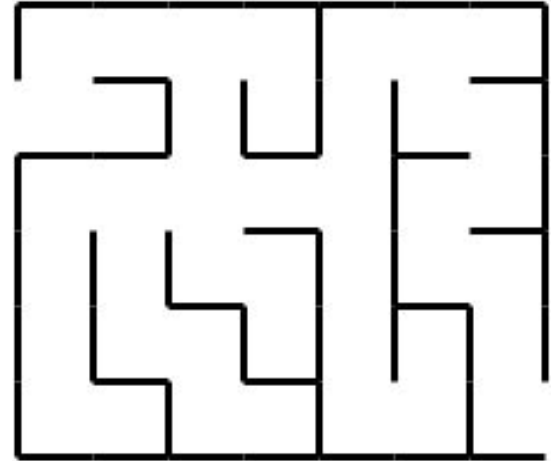
We used LEGO Mindstorms EV3s to learn more about robotics. We built and programmed robots to be able to navigate a maze and to be able to dance to music.



Autonomous vs. Pre-Programmed

Autonomous - A robot that uses sensors to navigate its environment.

Pre-Programmed - A robot that is told exactly what to do and when to do it.
(Hardcoded)



Where Are Robots Now?

- Robots are being used to do tasks that may be dangerous for humans to do.
 - Rescue missions during natural disasters and fires are places where they are important.
- They are also used to do very repetitive tasks.
 - Assembly lines in factories, making cars, construction, etc.
- Robots can also be found in hospitals helping patients.
- Finally, they can also be found on Mars where the Mars Rover explores the planet because humans can't.

Thank You For Listening!!!

