

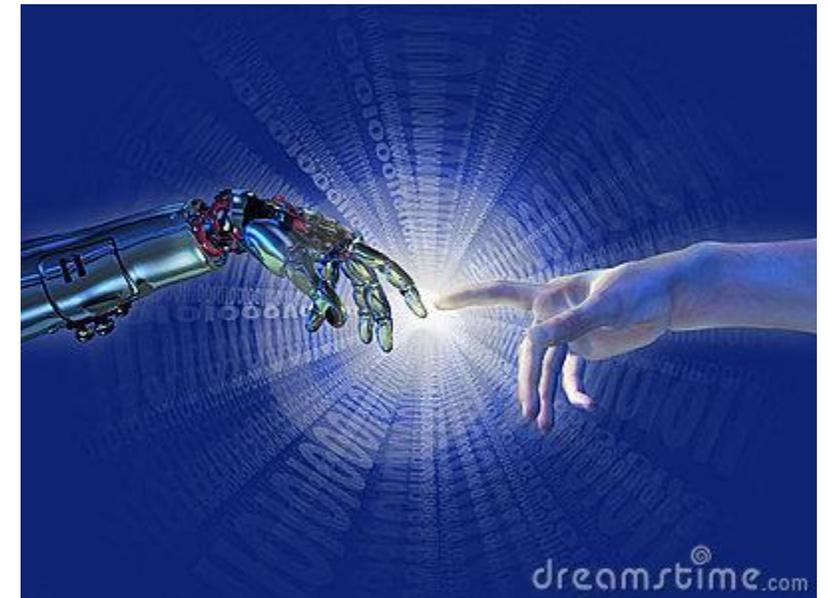
# The Impact of Artificial Intelligence



By: Steven Williamson

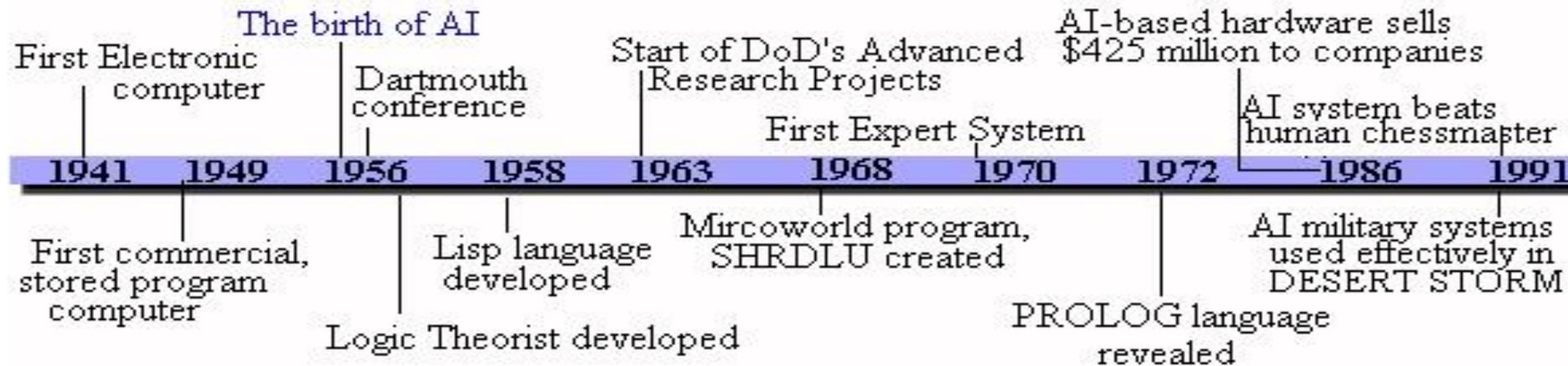
# WHAT IS ARTIFICIAL INTELLIGENCE?

- It is an area of computer science that deals with advanced and complex technologies that have the ability perform tasks that would normally require human interactions!



# How did AI come to exist? (Overview)

- Ideas of AI date back to ancient times where people created myths and fantasized about this type of technology.
- 1941 – The first electronic computer was created
- This event led to the advancements of modern day AI systems.



# The logic behind AI

- ▶ Idea behind AI is that the mind can be mechanized. (The functions of the mind can be emulated by machines)
- ▶ Algorithms became known as the connection between humans and machines.
- ▶ Algorithms are used to solve problems and allow machines to understand human concepts.

# AI is Born!

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- With the creation of the computer inspiration and ideas began to pour in regarding AI!
- 1956-Dartmouth college founded AI as an area of study and discipline
- Innovations in computer science made advancements in AI possible.

# Advancements of AI

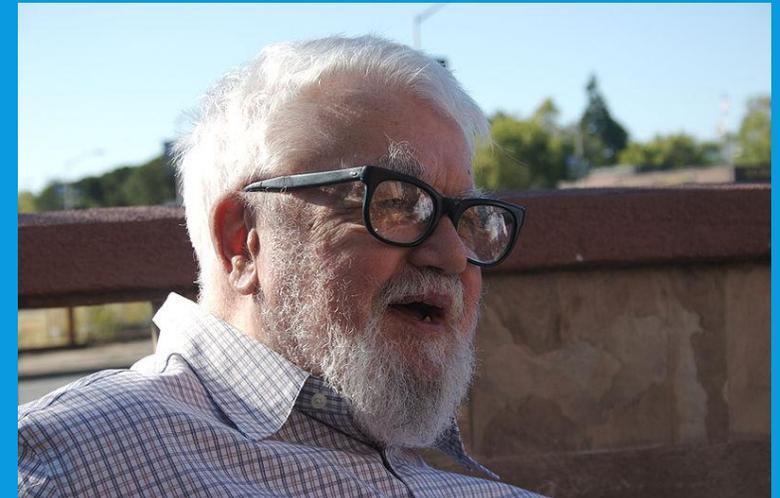
- ▶ Norbert Wiener proposed important principles on the feedback theory.
- ▶ He observed that machines are capable of performing intelligent actions based on feedback mechanisms.
- ▶ (Ex. The thermostat controls the temperature of an environment by gathering the actual temperature of the house, comparing it to the desired temperature, and responding by turning the heat up or down)
- ▶ Important observation because it would be necessary for AI machines to do this as well.

# Further Advancements

- ▶ From its success in 1956 AI development only grew
- ▶ Three computer scientists created two important pioneering AI programs.
- ▶ 1956 the Logic Theorist Program could mimic basic problem solving of the human mind.
- ▶ 1957 the GPS (General Problem Solver) was created by Herbert Simon, J.C. Shaw, and Allen Newell and capable of solving an extensive amount of common sense problems.
- ▶ 1958 the LISP (LIST Processing) language was developed, which is still used by AI developers today.

# IMPORTANCE OF LISP

- LISP was a programming language that was created by John McCarthy, who was a famous computer scientist who also coined the term Artificial Intelligence.
- LISP is the second oldest high level program language
- It is still used by programmers to this day.
- The primary language of many AI machines.
- It is constantly evolving and has many different dialects.



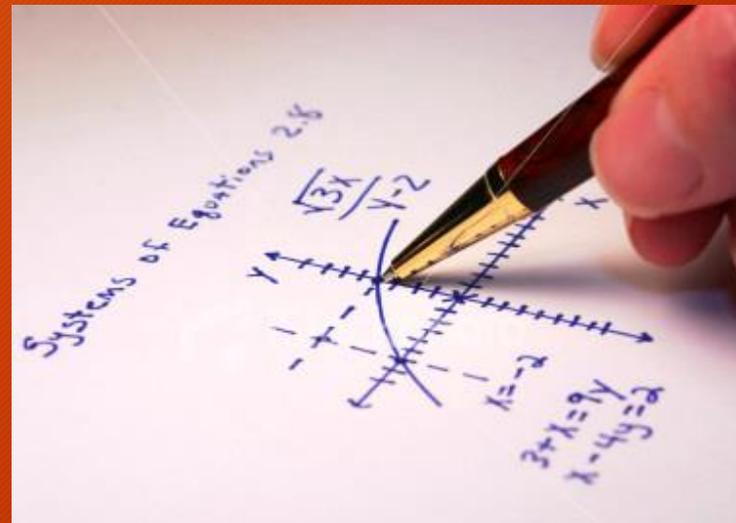
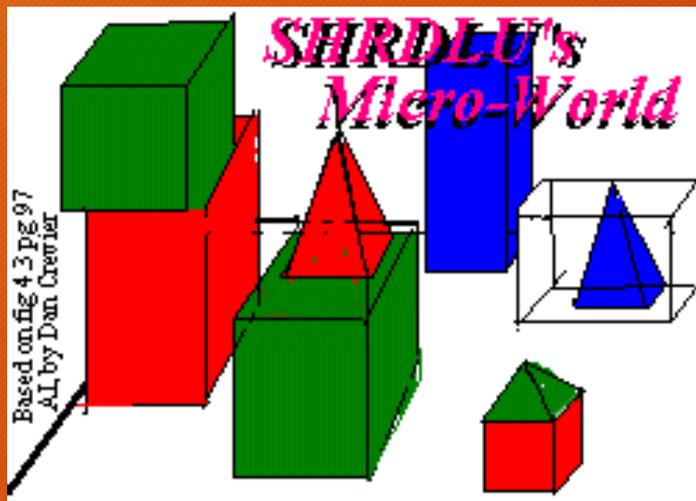
# (DARPA) Department of Defense's Advanced research projects Agency

- ▶ 1963 the US poured a lot of funding into AI research
- ▶ This was an effort to stay technologically ahead of the Soviet Union
- ▶ MIT received a 2.2 million dollar grant from the United States government
- ▶ \*MIT's AI was created due to the efforts of Marvin Minsky, who is one of its cofounders and writer of many texts dealing with AI.\*



# Emergence of AI Programs

- SHRDLU-Proved that computer programs could solve small spatial problems and logic problems
- STUDENT- Solved algebra story problems
- SIR- could understand simple English sentences



The background is a dark blue gradient. In the corners, there are white, stylized circuit board traces with circular nodes, resembling a network or data flow diagram.

# HOW DO AI SYSTEMS AFFECT US?

# FINANCES

- Banks use artificial intelligence systems to organize operations, invest in stocks, and manage properties.
- In August 2001, robots beat humans in a simulated financial trading competition.
- Financial institutions use artificial neural network systems to detect abnormal changes or claims outside of the norm.

# HOSPITALS AND MEDICINE

- Medical clinics use artificial intelligence systems to organize bed schedules, make a staff rotation, and provide medical information.
- Artificial neural networks are used as clinical decision support systems for medical diagnosis, such as in Concept Processing technology in EMR software.
- Computer-aided interpretation of medical images. Such systems help scan digital images, e.g. from computed tomography, for typical appearances and to highlight conspicuous sections, such as possible diseases. A typical application is the detection of a tumor.

# FACTORY INDUSTRY

- Robots have been used in factories for jobs that are dangerous to humans and for faster productions.



# ONLINE AND TELEPHONE CUSTOMER SERVICE

- Artificial intelligence is implemented in automated online assistants
- Answering machines of call centers
- Speech recognition software to allow computers to handle first level of customer support
- Text mining and natural language processing to allow better customer handling

# TOYS AND GAMES

- Ipods, Furbies, and other robotic toy/devices contain AI components that allow them to make valid actions and decisions.



# THE FUTURE OF AI TECHNOLOGY

# DRIVERLESS TRANSPORT

- Innovators of AI systems are developing cars that warn you of potential obstacles to help you avoid accidents, or even allow you to sit back and take in the sites as they drive themselves.



# PUSHING THE LIMITS OF SPACE EXPLORATION

- AI innovators also hope to push the limits of space exploration, with the aid of these systems. The use of smart unmanned vehicles and rovers, and advanced technologies will allow scientists to respond easier to emergencies.



# SMART HOMES

- AI innovators also hope to advance home automation systems. These systems seek to make home systems easier and smoother by connecting them to common devices such as computers, smartphones, and tablets, and allow users to control lighting, room climates, organize household activities etc.



# ROBOTS

- AI innovators have also envisioned a future with robots or machines that are capable of performing human tasks and functions. Robots will play a large roll in the lives of humans. Possibly handling tasks that humans are incapable or too lazy to.



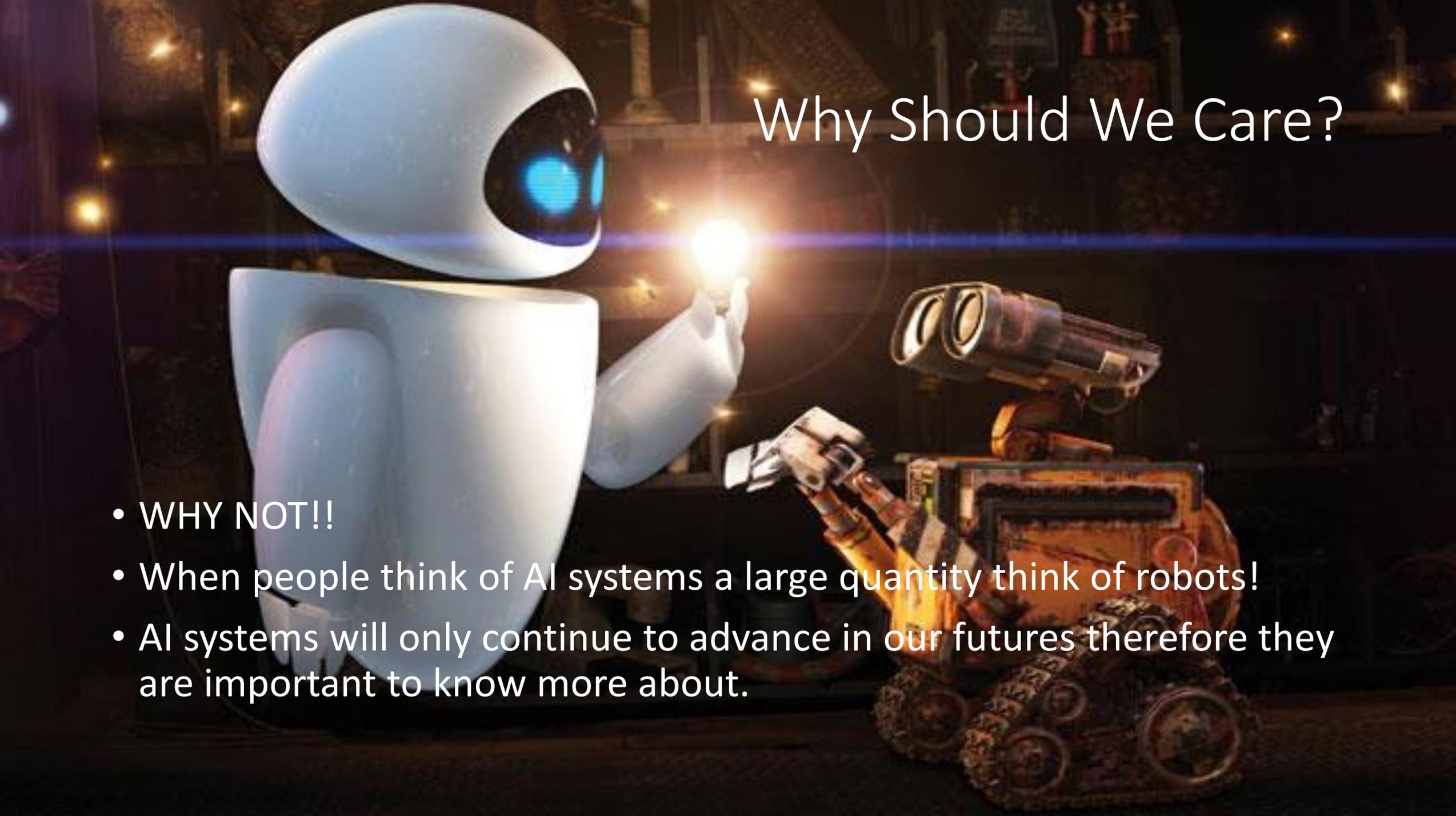
# AND SO MUCH MORE!!!



# SET BACKS?

- **AS OF NOW MANY OF THESE IDEAS ARE JUST IDEAS AND DO NOT HAVE THE FUNDING OR TECHNOLOGY TO BACK THEM.**
- **ALSO THERE ARE SKEPTICS OF A WORLD FILLED WITH EVOLVING TECHNOLOGY WHICH MAKES CERTAIN ADVANCEMENTS MORE DIFFICULT.**

# Why Should We Care?

The background of the slide features two robots from the movie WALL-E. On the left is Eve, a sleek, white, egg-shaped robot with a single large blue eye. On the right is WALL-E, a small, rusty, boxy robot with two large binocular-like eyes. They are in a dark, industrial-looking environment with some lights in the background.

- WHY NOT!!
- When people think of AI systems a large quantity think of robots!
- AI systems will only continue to advance in our futures therefore they are important to know more about.

# A GLIMPSE INTO THE FUTURE!

- [HTTP://WWW.YOUTUBE.COM/WATCH?V=6CF7IL\\_EZ38](http://www.youtube.com/watch?v=6CF7IL_EZ38)

# Sources

- <http://library.thinkquest.org/2705/history.html>
- [http://www.princeton.edu/~achaney/tmve/wiki100k/docs/Lisp\\_\(programming\\_language\).html](http://www.princeton.edu/~achaney/tmve/wiki100k/docs/Lisp_(programming_language).html)
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