



Famous AI Stories

The Turing Test



- In his “Computing Machinery and **Intelligence**” (1950), Alan Turing asked: can machines **think?**
- Fundamental statement: operations of the brain must be *computable*
- Argued how machine intelligence should be achieved
- Common grounds: *Turing machine*
- Introduced the “imitation game”
- Human and computer both under interrogation, all via text message exchanges
- Intelligence is if interrogator couldn’t distinguish them
- Language based *Turing Test*



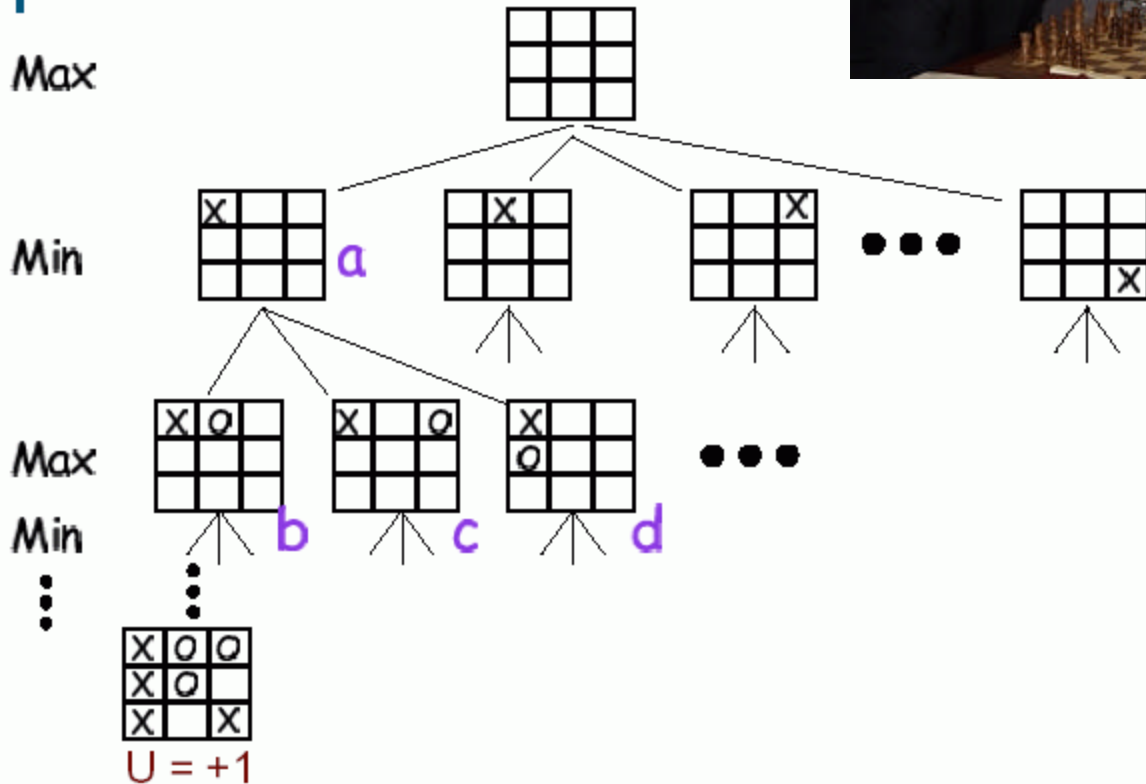
Searle's Chinese Room

- John Searle designed an example to illustrate the kind of *understanding* that computers have
- A man is in a room with a book of rules. Chinese sentences are passed under the door to him. The man looks up in his book of rules how to process the sentences. Eventually the rules tell him to copy some Chinese characters onto paper and pass the resulting Chinese sentences as a reply to the message he has received. The dialog continues.
- To follow these rules the man need not understand Chinese.
- Searle concludes from this that a computer program carrying out the rules doesn't understand Chinese either, and therefore no computer program can understand anything. He goes on to argue about biology being necessary for understanding.

Deep Junior ties Kasparov

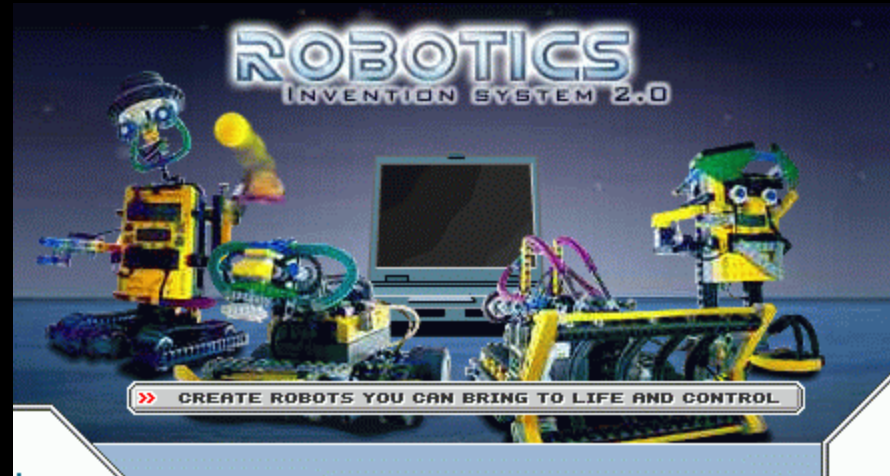
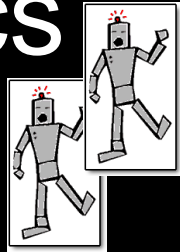


Tic-tac-toe: Game Tree



- Searches through every possible move
- Considers every possible consequence
- Look ahead many steps
- Super-computer
DeepBlue beat Kasparov in 1997

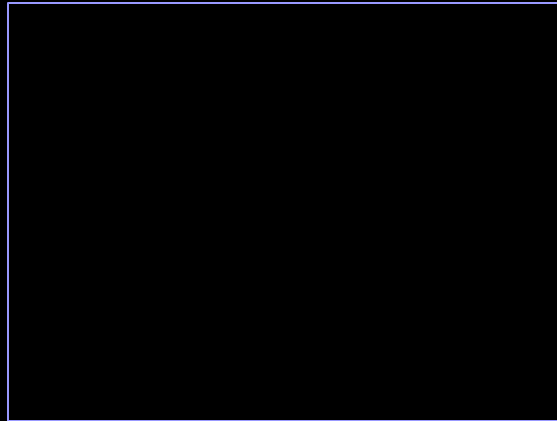
Robotics



Nursebot Pearl

Assisting Nursing
Home Residents

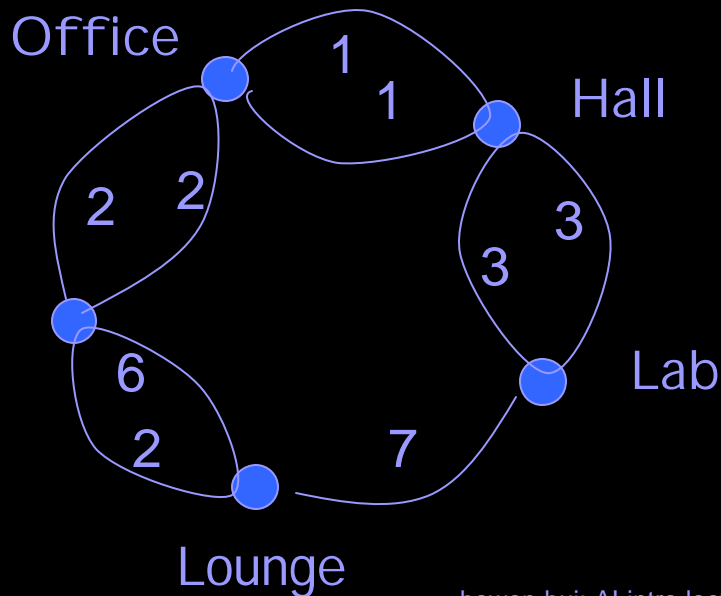
Longwood, Oakdale, May 2001
CMU/Pitt/Mich Nursebot Project



Planning and Navigation



- **Goal:** Craig has coffee
- **Currently:** robot in mailroom, has no coffee, coffee not made, Craig in office, etc.
- **To do:** go to lounge, make coffee, ...



Assistive Technology



See dasher !

See anim !

AI in Hollywood

- Playwright Karel Capek introduced “robot” in Rossum’s Universal Robots in 1920
- Czechoslovakian “roboto” = tedious labor
- Robotic parts used in space probing, mining, samples volcanic gases
- Honda showcases **Asimo** android
- Sony releases **Aibo** robot dog



A STEVEN SPIELBERG FILM
ARTIFICIAL INTELLIGENCE

David is 11 years old.

He weighs 60 pounds.

He is 4 feet, 6 inches tall.

He has brown hair.

His love is real.

But he is not.

Isaac Asimov's Laws of Robotics



- “My robots were machines designed by engineers, not pseudo-men created by blasphemers”
- Wrote fiction called “I, Robot”
- **First Law:** A robot may not injure a human being, or, through inaction, allow a human being to come to harm.
- **Second Law:** A robot must obey orders given it by human beings, except where such orders would conflict with the First Law.
- **Third Law:** A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.
- Assumes robots are slaves to humans

Living in the Matrix?



EVERYTHING THAT HAS A BEGINNING HAS