CSCI 215 Social & Ethical Issues In Computing

Class 22 – (some) notes on AI
Notes

• Note on Grades

• Recitations (Today)
  • Fill out both forms on [http://www.cs.montana.edu/~mdale/courses/CSCI215/](http://www.cs.montana.edu/~mdale/courses/CSCI215/)
  • BY TONIGHT
Review

• Charles Babbage designed two “engines”, what were they?
• What Law is associated with the observation that the number of transistors per square inch on integrated circuits had doubled every other year since the integrated circuit was invented?
• What kind of loom was inspiration for the punch cards proposed by Babbage and ultimately the inspiration for Hollerith’s census system?
Turing Test - Original

- Interrogator has just 5 minutes to chat with human/chatbot
- AI System passes if judges get fooled >30% of the time
- Chatbot Eugene Goodman made news in 2013 for passing Turing contest at University of Reading
Turing Test - Updated

• 1990 Hugh Loebner updated the Turing Test
• Conversations should last 25 minutes
• Should be 4 different judges
• AI System passes if judges get fooled >50% of the time
Turing Test - The Loebner Prize

- Contest consists of 4 rounds
- Each round, the 4 judges interact with two entities using a computer terminal, one human and one AI.
- After 25 minutes of questioning the judge must decide entity is the human and which is the AI.
- If a system can fool half the judges that it is human under these conditions, a Silver Medal and $25,000 will be awarded to the creator of that AI system
- If no winners, Bronze medal awarded to AI that fools most judges

http://aisb.org.uk/events/loebner-prize
Artificial Intelligence – Learning & Some History

• 1964 ELIZA - Created by Joseph Weizenbaum of MIT.
• Original Chatbot that picked up on key words and imitated a therapist.
• For Example: ELIZA would respond to a question such as “My mother hates me” with “Who else in your family hates you?”
• Weizenbaum went from a strong proponent of anthropomorphized AI to a critic after test subjects started to open up emotionally to ELIZA, as if she were a real person.
Artificial Intelligence – Learning & Some History

1957 Perceptron - using a large number of very simple linear classifiers creates a strong model
Progress in machine classification of images
• Red line - the error rate of a trained human

Microsoft Research - outperforming humans
Artificial Intelligence – Learning & Some History

• 1990s – Statistical AI and Big Data – Recognize patterns
• 1996 – Deep Blue – won chess match against world champion Kasparov
  • Won first of 6 games, lost 2, and tied 3
  • 1997 Rematch, Deep Blue won 2, lost 1, and tied 3
Artificial Intelligence – Learning & Some History

• 2011 – Watson and Jeopardy – understands natural language (enough to beat the top 2 jeopardy champions while not connected to the internet)

• 2013 – Watson goes commercial – Utilization Management Decisions in lung cancer treatment

Some Terminology

**Strong AI/General Intelligence:**
- Intelligent on par with human
- Could pass Turing test

**Superintelligence (Hyper Intelligence):**
- An agent who possesses intelligence far beyond even the most gifted human.
Questions Closing Remarks?

- Recitations (Today)
  - Work on your first draft