AI

Artificial Intelligence Fall 2023 (CSC/DSC 482.01)

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The Thinking Machine (1961)

Dartmouth conference (1956): founding event of AI.

Parry is "Eliza with attitude" and succeeded in fooling human examiners in a Turing test in 52% of the time. Here is a conversation between Eliza and Parry from 1972 (Malm, 2016).

SHRDLU by Terry Winograd (1971) could understand simple questions about a block-based microworld (video demo) and can manipulate blocks. It's written in Lisp. The name is derived from the letter keys of a printing press arranged in descending order of English usage, ETAOIN SHRDLU.

DATE	TOPIC	EXAMPLE	PUBLICATION
1940	Turing machines	Artificial neurons	Turing, 1950
-1960	Hebbian learning	Pavlovian response	Hebb, 1949
	Machine learning	Checkers program	Samuel, 1952
1960	Chatbots	Eliza / Parry	Weizenbaum, 1966
-1980	Natural language	Hacker, SHRDLU	Winograd, 1971
	Supervised learning	Perceptrons	Ritvikmath, 2019
1980	Genetic programming	Pattern recognition (BEAGLE)	Forsyth, 1981
-2010	Expert systems	Drug recommender (MYCIN)	Schank/Tesler, 1969
2010	"Deep Learning"[1]	Image recognition	Sejnowski, 2020
-2020		Machine translation	

Key points (according to ChatGPT):

1. Human perception and instinct.

2. Understanding the brain (seeing is believing).

3. General problem solver (hard coded rules).

4. Computers and creativity (music, plays).

5. Ethical considerations (who has control).

6. Global research efforts.

7. Future of Artificial Intelligence (timeline).

Which research presented made the deepest impression on you and why? Sutherland's sketchpad/robot draftsman (wikipedia) and the child learning to write (supposedly) by imitating forms.

Which part of the research presented has most influenced us in 2023? Image recognition and human-computer interaction (sketchpad) and Samuel's checkers program (AI winning games). ELIZA is not mentioned.

Which assumptions did the researchers of the 1950s make? - Piaget's theories about cognitive development (children need to build or develop a mental model of their surrounding world). Very influential model of developmental stages for early childcare and primary school: sensorimotor, preoperational, concrete operational and formal operational.