

AI Chronicles: A Journey Through Time

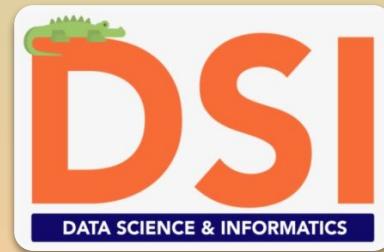


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AI Chronicles: A Journey Through Time



Jim Su



Matheus Kunzler Maldaner



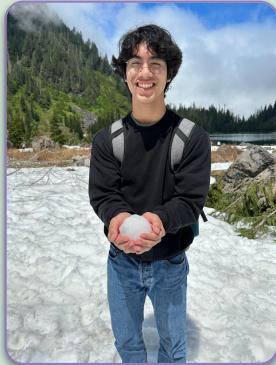
Matthew DeGuzman



Agenda

- About us
- Colorstack/DSI/G[AI]tor
- What is AI
- History of AI
- Future of AI
- Discussion

Matthew DeGuzman



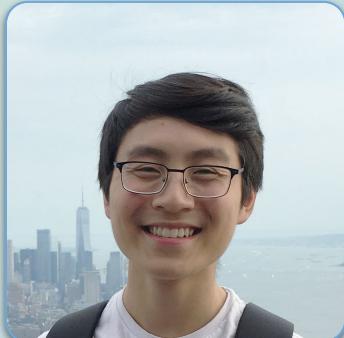
Major: Computer Science

Minor: Math & Physics

Club: ColorStack

Position: Technical Events
Coordinator

Jim Su



Major: Computer Science

and Math

Club: GAITOR



Matheus Kunzler Maldaner



Major: Data Science

Minor: Computer Science

Club: DSI

Position: Workshop Director

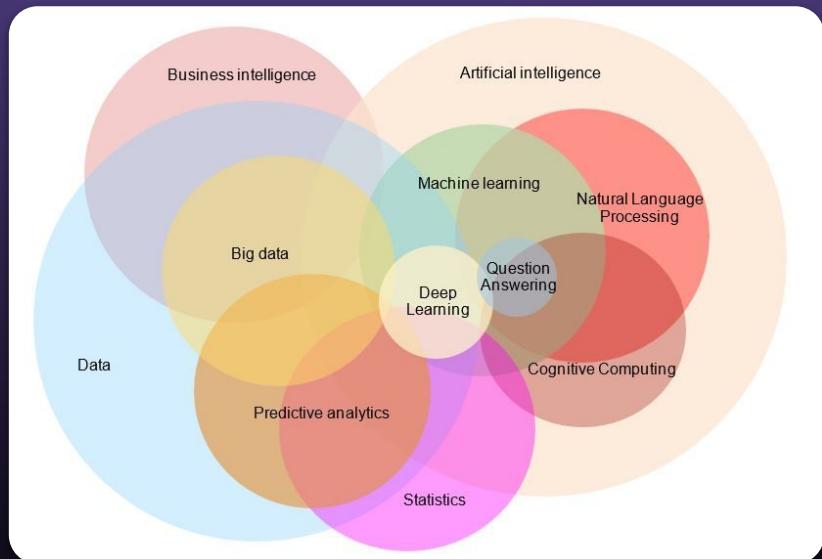
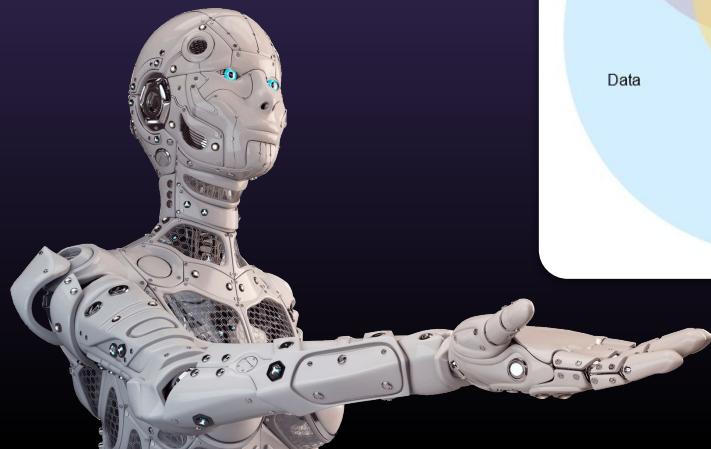


QR Codes!



What is Artificial Intelligence?

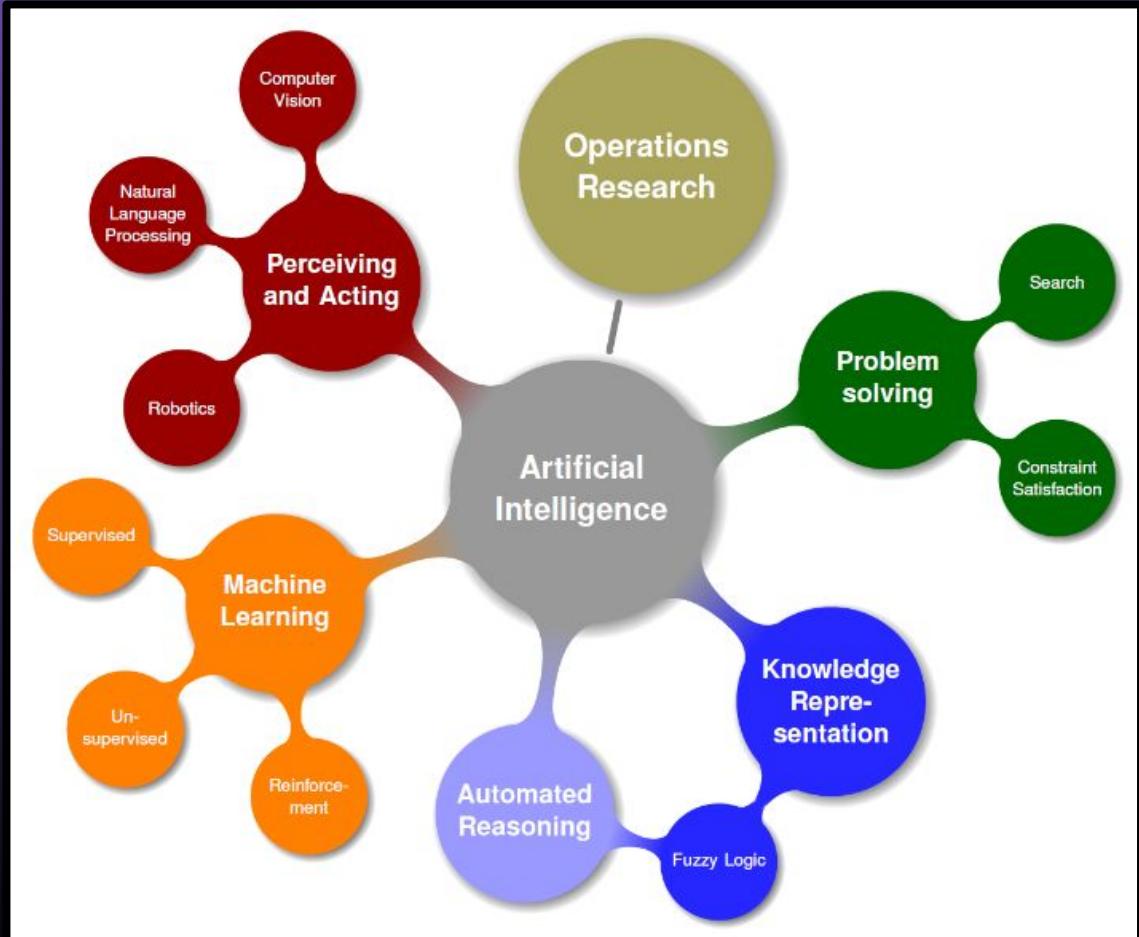
Artificial Intelligence is the capability of a machine or computer device to emulate human intelligence (cognitive process), acquire from experiences, adapt to the latest information and operate humans-like-activities



AI Disciplines

Artificial Intelligence has grown to encompass **many fields** throughout the years.

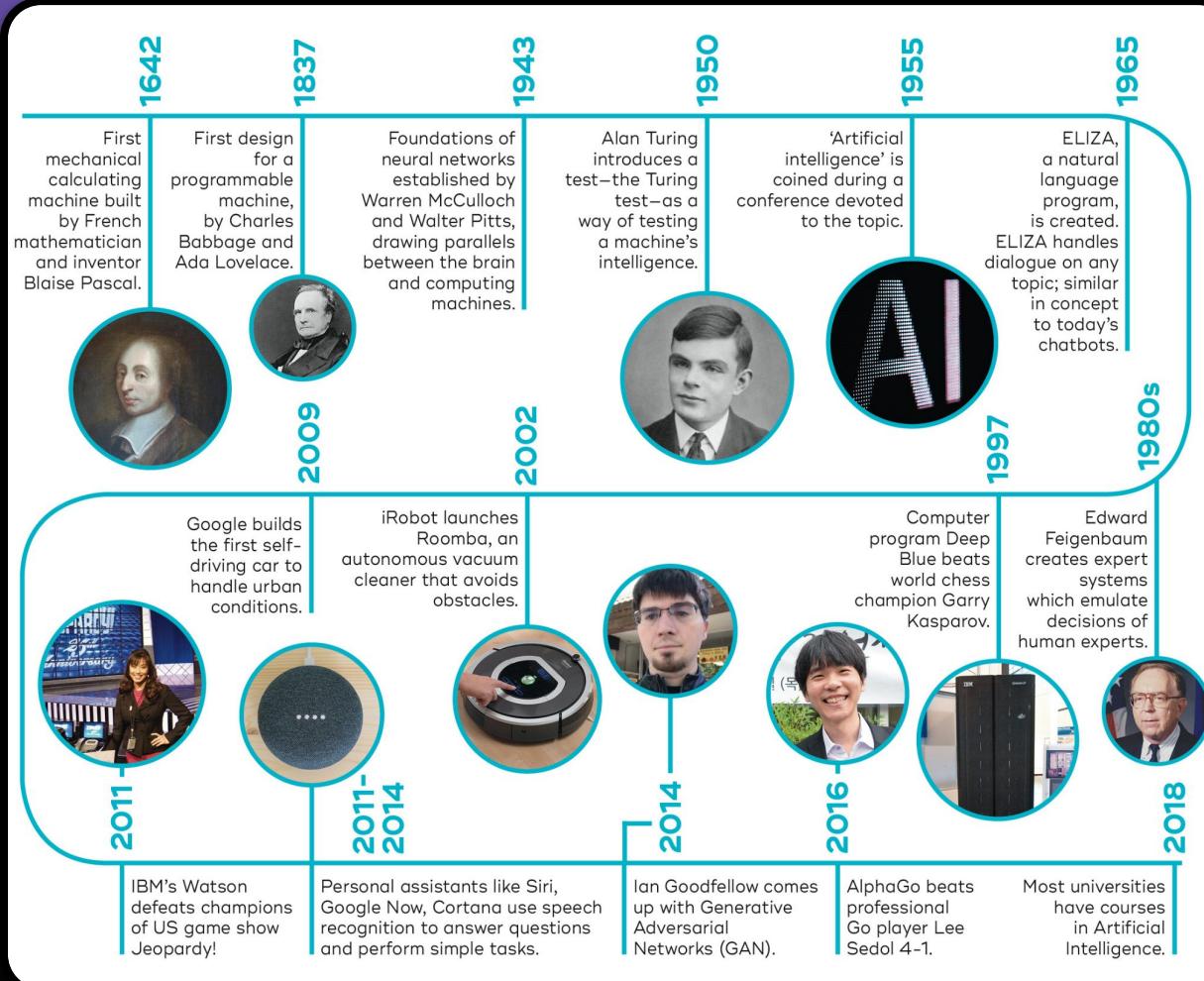
In addition to the diagram to the right, another popular application of Artificial Intelligence is in the realm of Robotics.



History of AI

Although the “hype” about AI is recent, its history dates back centuries.

We will however be focusing on “recent” advancements (1900s+)



Birth of AI (1941 - 1956)

(30s, 40s, 50s) Research on neurons exposed how they work. Might be able to make an "artificial brain"

(1950) Turing releases his paper "Computing Machinery and Intelligence"



(1956) Allen Newell, Cliff Shaw, and Herbert Simons create Logic Theorist

(1956) Artificial Intelligence term coined at Dartmouth Summer Research Project on Artificial Intelligence



Early Successes (1956 - 1974)

Millions poured into AI research

Major Optimism

(1965) H. A. Simon "machines will be capable, within twenty years, of doing any work a man can do."

(1967) Marvin Minksy "Within a generation ... the problem of creating 'artificial intelligence' will substantially be solved."



Accomplishments

(1966) First chatbot "ELIZA" created at MIT by Joseph Weizenbaum

Birth of neural networks; mainly used in hardware

First android WABOT-1 created in Japan

Welcome to
EEEEE LL IIII ZZZZZZ AAAA
EE EE LL II ZZ AA AA
EEEEE LL II ZZZ AAAA
EE LL II ZZ AA AA
EEEEE LLLLLL IIII ZZZZZZ AA AA

Eliza is a mock Rogerian psychotherapist.
The original program was described by Joseph Weizenbaum in 1966.
This implementation by Norbert Landsteiner 2005.

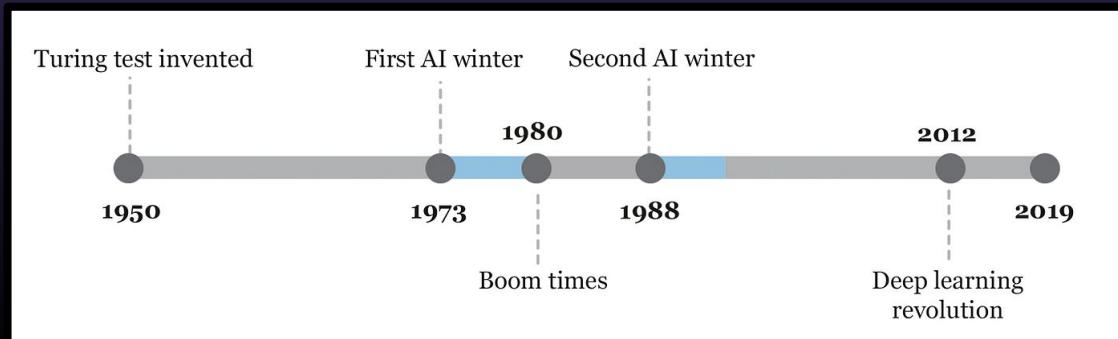
ELIZA: Is something troubling you ?
YOU: Men are all alike.
ELIZA: What is the connection, do you suppose ?
YOU: They're always bugging us about something or other.
ELIZA: Can you think of a specific example ?
YOU: Well, my boyfriend made me come here.
ELIZA: Is it important to you that your boyfriend made you come here ?
YOU: He says I'm depressed much of the time.
ELIZA: I am sorry to hear that you are depressed.
YOU: It's true. I am unhappy.
ELIZA: Can you explain what made you unhappy ?
YOU:

First AI Winter (1974 - 1980)

Overly optimistic claims about what AI would be able to achieve made funding dry up.

Hardware bottleneck, with applications demanding far more computational power than it was available at the time.

People thought artificial intelligence would be able to understand human language and solve complex problems briefly.



BOOM (1980 - 1987)



Expert systems **exploded** in popularity

Researchers began to suspect that intelligence was based on large amounts of data (foreshadowing big data?)

More money poured into hardware advancements for AI research

Hopfield net and backpropagation revived neural network research



Second AI Winter (1987 - 1993) 😢😢

Economic bubble causes businesses to fail,
lowering public perception of AI

AI specialized hardware collapsed

DARPA cut funding to AI projects

Hundreds of AI companies were bankrupt or
acquired by 1993



AI (1993 - 2011)

Compute power increased

- **(1997)** Deep Blue beats chess champion Garry Kasparov
- **(2005)** Stanford robot drives autonomously for 131 miles
- **(2011)** IBM's Watson defeats the two greatest Jeopardy champions

AI begins to merge with other fields

Problems in fields like math and economics overlapped with AI

AI is implemented more behind the scenes

- Google search engine
- Speech recognition
- Data mining



Deep Learning + Big Data (2011 - 2020)

The expansion of deep learning was driven by 3 key factors:

1. Rise of internet → More available data
2. Rise of computing power → More complex systems
3. Breakthroughs in AI Research → :)

This enabled fast advancements in many fields



LLMs & Artificial General Intelligence (2020 - present)

(2017) Transformer architecture released by Google researchers

(2022) ChatGPT is released

LLMs released by Meta, X, Anthropic, and many other companies followed suit

Artificial General Intelligence

Type of system that can perform as well or better than humans on a wide variety of cognitive tasks

The current goal is to reach AGI



Future of AI

- Artificial General Intelligence (AGI)
- Autonomous vehicles
- Quantum Computing + AI
- Mind uploading
- Artificial Consciousness
- Immortality
- Artificial Super Intelligence (ASI)
- Universal Basic Income
- Human Augmentation
- Self Replicating AI
- Neuro Symbiosis
- Neuro Symbolic AI



Discussion

In Small Groups

Some topics to consider:

- Generative AI trained on artists
- Ethics and Bias in training dataset
- End of certain professions?
- New jobs?
- Deep Fakes / Impersonation

Discussion

As a whole

Kahoot

Winner gets neuralink implanted in their brain



QR Codes! (Again)

