

# Introduction to Artificial Intelligence

CSE 4617: Artificial Intelligence



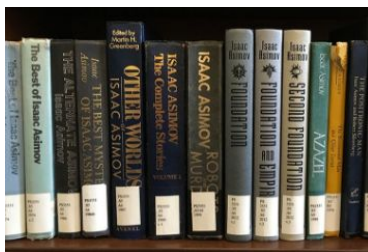
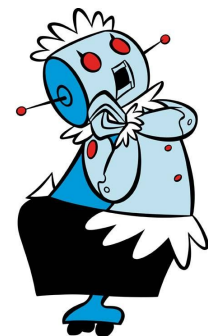
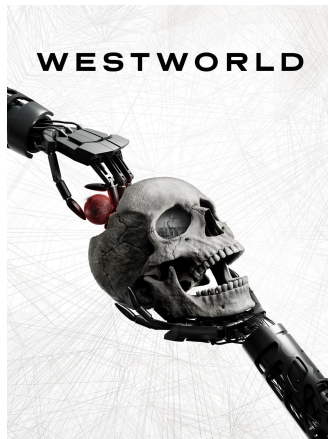
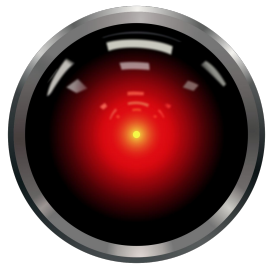
Isham Tashdeed  
Lecturer, CSE



# Course Logistics

- Google Classroom Code: [jfvo443l](#)
- Email: [ishmamtashdeed@iut-dhaka.edu](mailto:ishmamtashdeed@iut-dhaka.edu)
- Book:
  - Russell and Norvig, Artificial Intelligence: A Modern Approach, 4th Ed.
  - Sutton and Barto, Reinforcement Learning: An Introduction, 2nd Ed.
- Grading:
  - Attendance (10%)
  - Quiz (15%)
  - Mid-Semester (25%)
  - Semester Final (50%)
- Academic Integrity Policy: **Do not submit others' work as yours**

# AI in Popular Media

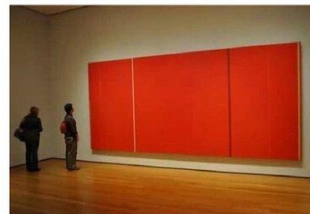


# AI in Real World

- Image generation



It's just red.



No, you don't understand it!



Look at this cool art my computer made.

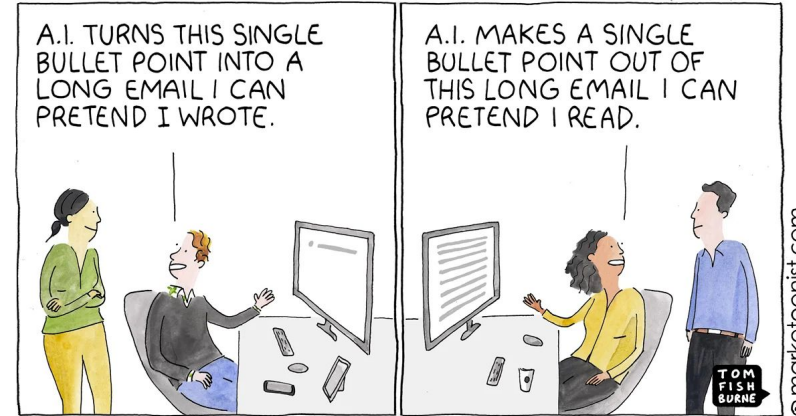


No, art requires imagination & creativity!

# AI in Real World

- Text generation

**Americans largely foresee AI having negative effects on news, journalists**



**Nadella and Zuckerberg: Microsoft and Meta see surge in AI-generated code at their own companies**



# AI in Real World

- Economy

## “Sentient” AI Memecoins: The Rise of Digital Cults and Emerging Crypto Trends in 2024

Are AI generated memecoins blurring the lines between tech and speculation?



**Markets News, May 1, 2025:**  
S&P 500, Dow Rise for 8th  
Straight Day as Strong  
Earnings from Microsoft,  
Meta Boost AI Stocks; Jobs  
Report Comes Friday

# AI in Real World

- Politics



## EU announces massive AI investment of €200 billion

New EU investment will support the development of four AI gigafactories.

## China Using DeepSeek's AI Model To Develop Advanced Warplanes: Report

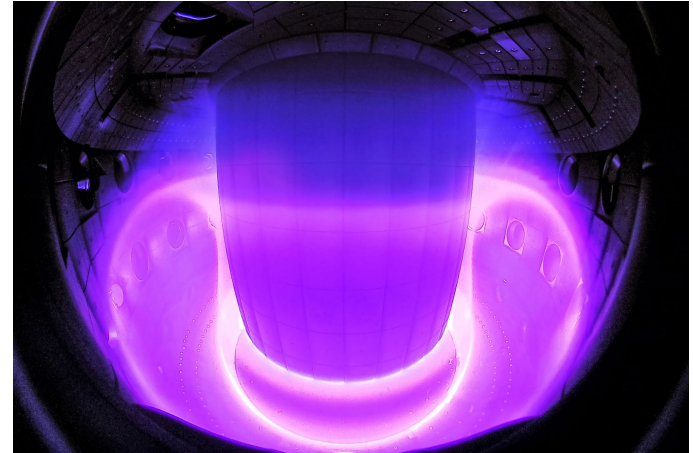
A lead designer at the Shenyang Aircraft Design Institute confirmed the development about AI use to design warplanes.

**President Trump Announces  
\$500 Billion AI Investment to  
Create Jobs & Transform Lives**



# AI in Real World

- Research

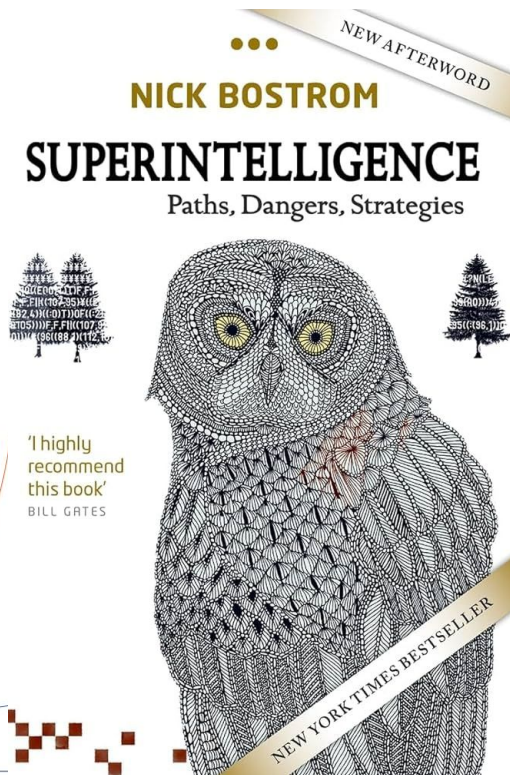
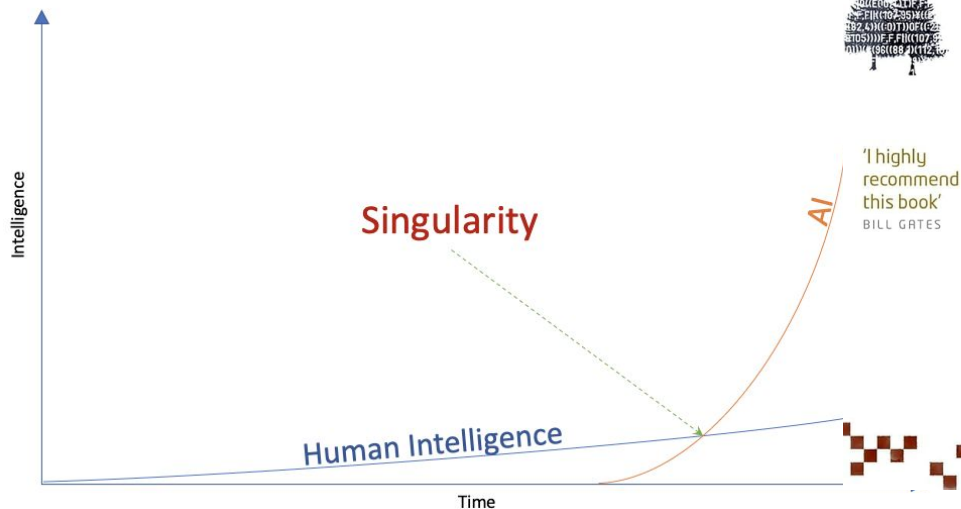
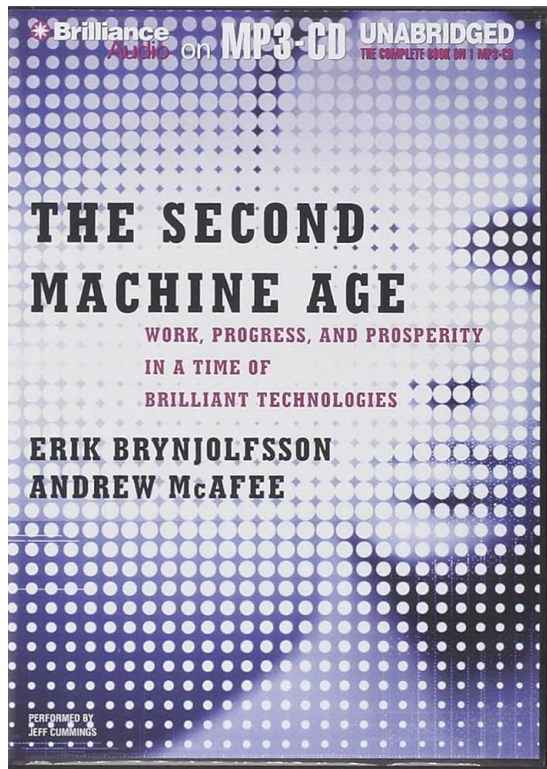


## AI-Assisted Genome Studies Are Riddled with Errors

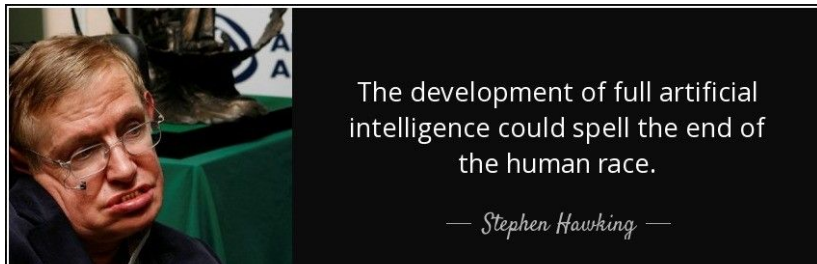
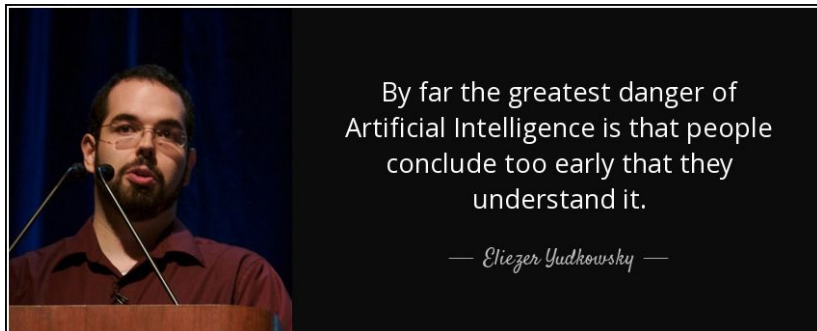
Researchers used artificial intelligence in large genomics studies to fill in gaps in patient information and improve predictions, but new research uncovers false positives and misleading correlations.



# AI in Real World



# AI in Real World



[p\(doom\)](#) /'pi: 'du:m/ (Noun)

The probability of very bad outcomes (e.g. human extinction) as a result of AI.

# History

- Published in **1950**, he was the first to introduce his concept of what is now known as the Turing test to the general public. It considers the question "Can machines think?"

**A. M. Turing (1950) Computing Machinery and Intelligence. *Mind* 49: 433-460.**

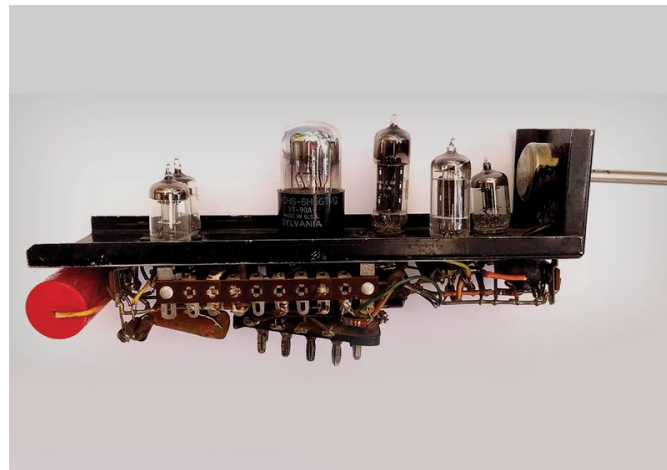
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## **COMPUTING MACHINERY AND INTELLIGENCE**

**By A. M. Turing**

# History

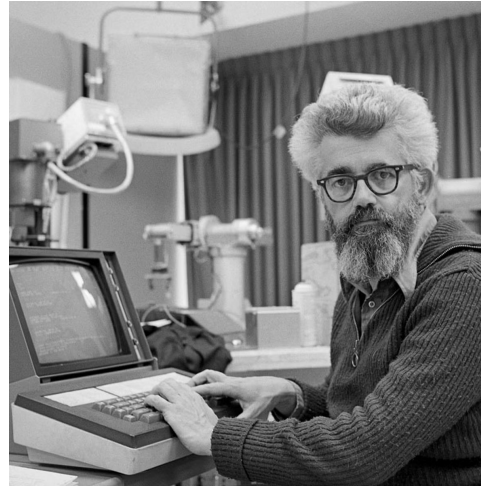
- In the 1950s, early AI programs, including Samuel's checkers program, Newell & Simon's Logic Theorist, Gelernter's Geometry Engine
- In 1951, Stochastic Neural Analog Reinforcement Calculator (SNARC) is a neural-net machine designed by Marvin Lee Minsky
- It simulated rats solving a maze





# History

- The Dartmouth Summer Research Project on Artificial Intelligence was a **1956** summer workshop widely considered to be the founding event of artificial intelligence as a field. Attended by Claude Shannon, John McCarthy, and Marvin Minsky



# History

- In **1956**, Alan Newell and Herbert Simon introduced the first Artificial Intelligence program called the “Logic Theorist”
- In **1965**, Robinson’s complete algorithm for logical reasoning
- In **1969**, Minsky criticized the current field of AI in the book “Perceptron”
- In the **1970s**, funding in AI research dried out, bringing the first AI winter.



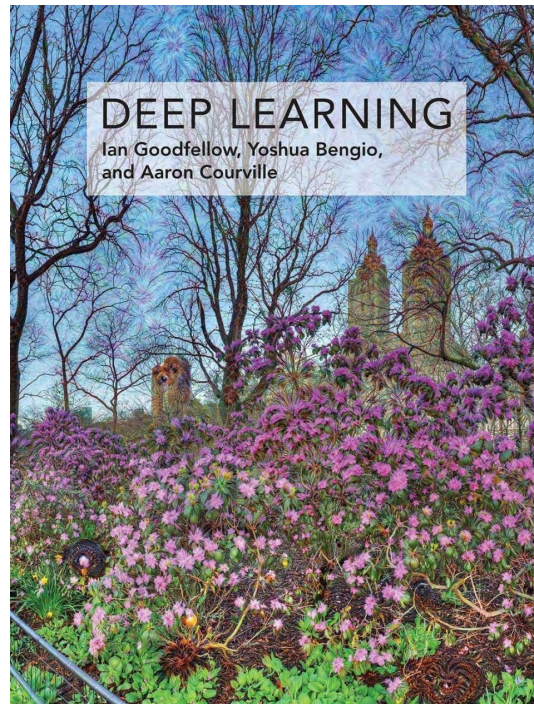
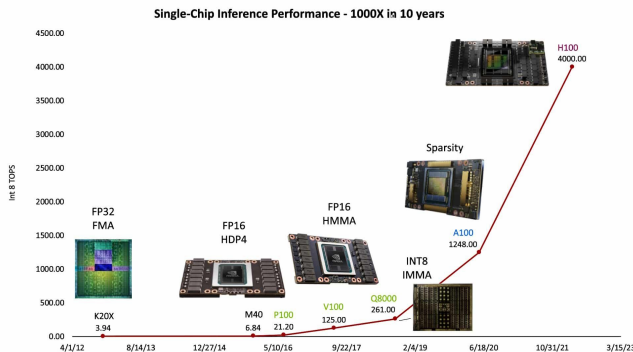
# History

- In the **1980s** a sudden rise of “Expert Systems” took the world by storm
- These were system with expert rules hard-coded into them
- Late **1980s-1990s**, the expert system industry falls apart, ushering a new AI winter
- But advancements such as Backpropagation, and Convolutional Neural Networks brought a new life in the field



# History

- From **1990-2000**, statistical approaches + subfield expertise, a resurgence of probability, focus on uncertainty
- **1997**: Deep Blue defeats Kasparov in Chess
- From **2000s** till now, big data, big compute, massive neural networks, some re-unification of sub-fields
- What can AI do now?





# What can AI **not** do?

# Additional Resources

- [Will AI kill everyone? Here's what the godfathers of AI have to say](#)
- [Intro to AI Safety](#)
- [Computing Machinery and Intelligence- A.M. Turing](#)

Thank you