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# Fundamentals of Artificial Intelligence

## Centre for Doctoral Training



UNIVERSITY OF  
OXFORD

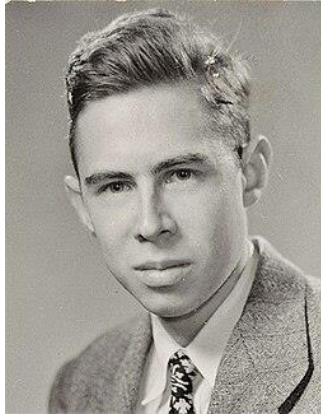
**DAY 2**

# History of Artificial Intelligence

Sloman's work reminds us that the vision for AI is often decades ahead of the hardware and methods needed to realise it.

**Q: What were those key developments?**

# What do these pictures show?



```
----- patient-1 -----
Patient's name:  MARCUS BLOICE
Sex:  MALE
Age:  30
----- culture-1 -----
From what site was specimen CULTURE-1 taken?  ?
Must be one of: blood

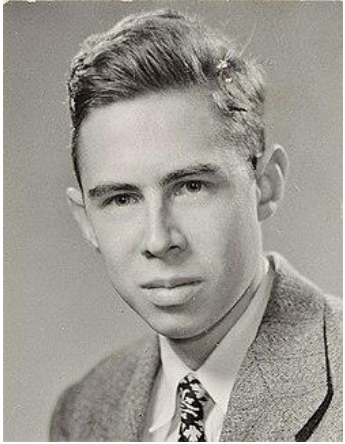
From what site was specimen CULTURE-1 taken?  BLOOD
How many days ago was this culture (CULTURE-1) obtained?  ?
Must be a number

How many days ago was this culture (CULTURE-1) obtained?  3
----- organism-1 -----
Enter the identity (genus) of ORGANISM-1?  WHY
[Why is the value of identity being asked for?]
identity is one of the goal parameters.

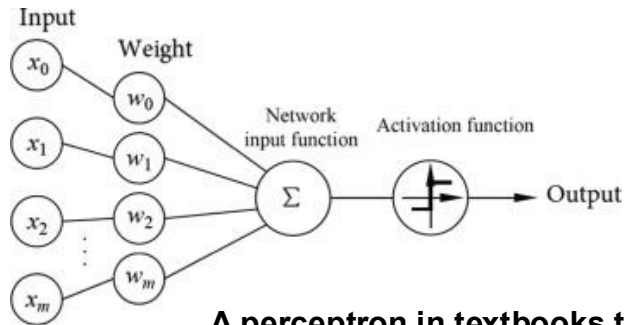
Enter the identity (genus) of ORGANISM-1?  ?
Must be one of: pseudomonas, klebsiella, entero, staphylo, bacteroides, strepto

Enter the identity (genus) of ORGANISM-1?  ENTERO
```

# A founder of Deep Learning

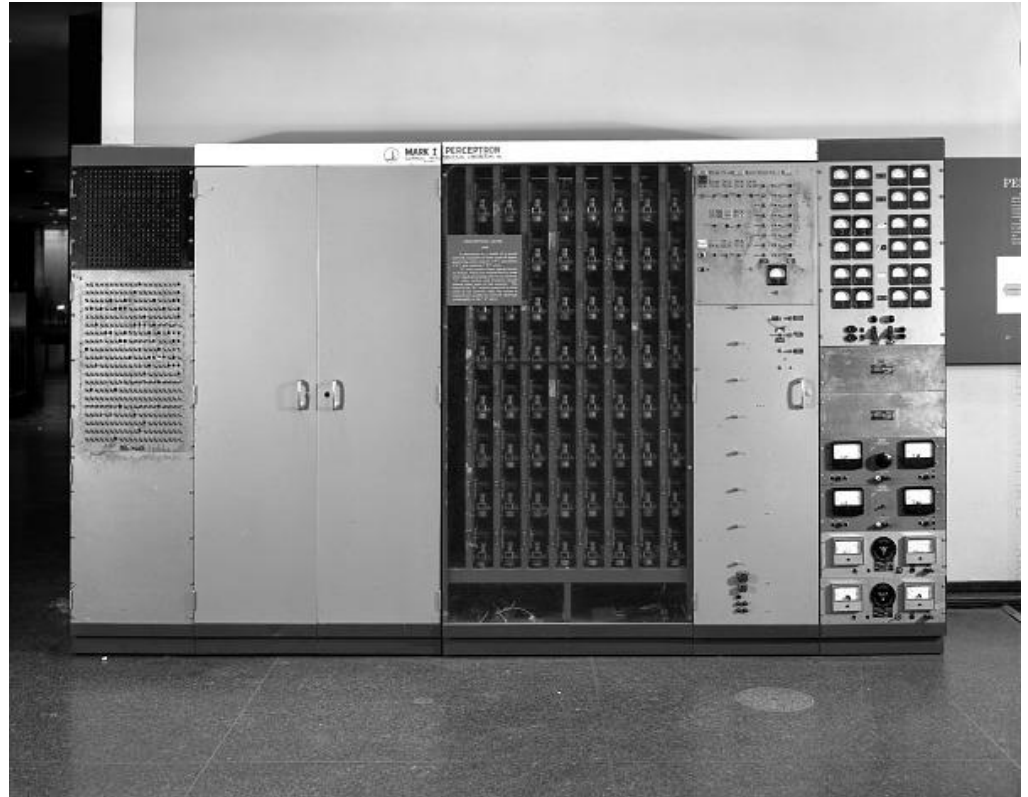


Frank Rosenblatt



A perceptron in textbooks today

Mark 1 Perceptron



# New approaches to software distribution

Altair 8800 Computer



Microsoft BASIC

```
READY
>10 PRINT TAB(32);"HAMURABI"
>20 PRINT TAB(15);"CREATIVE COMPUTING  M
ORRISTOWN, NEW JERSEY"
>30 PRINT:PRINT
>80 PRINT "TRY YOUR HAND AT GOVERNING AN
CIENT SUMERIA"
>90 PRINT "FOR A TEN-YEAR TERM OF OFFICE
":PRINT
>95 D1=0: P1=0
>100 Z=0: P=95:S=2800: H=3000: E=H-S
>110 Y=3: A=H/Y: I=5: Q=1
>210 D=0
>215 PRINT:PRINT:PRINT "HAMURABI:  I BEG
TO REPORT TO YOU,";Z=Z+1
>217 PRINT "IN YEAR";Z;",";D;"PEOPLE STA
RUED,";I;"CAME TO THE CITY,"
>218 P=P+I
>227 IF Q>0 THEN 230
>228 P=INT(P/2)
>229 PRINT "A HORRIBLE PLAGUE STRUCK!  H
ALF THE PEOPLE DIED."
>
```

Microsoft's first product

Decoupling of hardware and software

# Is there a doctor in the house?

## MYCIN – Rule-based Medical Expert System

```
----- patient-1 -----
Patient's name:  MARCUS BLOICE
Sex:  MALE
Age:  30
----- culture-1 -----
From what site was specimen CULTURE-1 taken?  ?
Must be one of: blood

From what site was specimen CULTURE-1 taken?  BLOOD

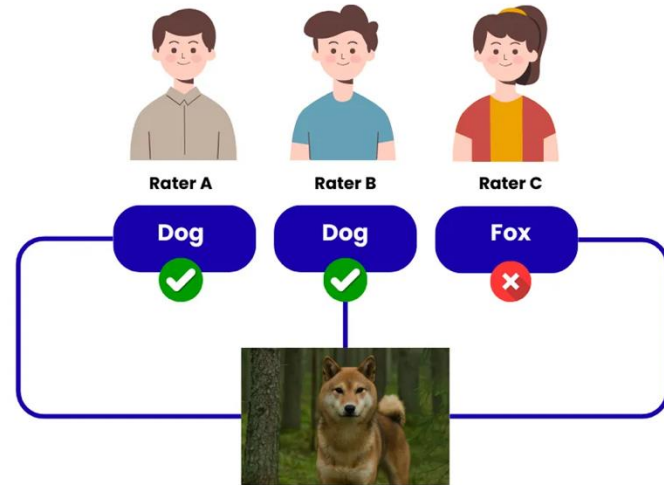
How many days ago was this culture (CULTURE-1) obtained?  ?
Must be a number

How many days ago was this culture (CULTURE-1) obtained?  3
----- organism-1 -----
Enter the identity (genus) of ORGANISM-1?  WHY
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Enter the identity (genus) of ORGANISM-1?  ?
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Enter the identity (genus) of ORGANISM-1?  ENTERO
```

## Inter-rater reliability



Ethical use of clinical decision support systems and where responsibilities lie

## **28 October – EIT Visit**

- Student Presentations
- Working in groups of four produce a timeline of key events in the history of artificial intelligence development.
- Canvas submission

\* Please can one group adopt Johnathan



# The History of AI Part 1

**Task: Create a timeline showing the history of artificial intelligence development.**

Each group can be generally focused or lean towards a certain theme, e.g.:

- Theoretical/methodological advances
- Hardware advances (from vacuum tubes to TPUs)
- Paradigm shifts (symbolic AI, machine learning)
- Societal/public perception (AI winters, ethics)

You may use the prompt cards (right) provided for guidance.

You should consider the full history and not just the last 10 years.

AlphaGo	DeepBlue	Vapnik–Chervonenkis
IBM Watson	ELIZA	Kolmogorov complexity
Attention is All You Need	Lighthill report	Mycin
ChatGPT	Dartmouth workshop	Prolog

**All groups report at 12:00:**

- **What is your theme? (Check in with other groups)**
- **Identify 3-5 key historical events in your theme**
  - What were the direct and indirect effects of those events
  - What were the long-term consequences of those events

**Note 1 – if you use an LLM, how will you know if has missed out anything important?**

**Note 2 – consider historical bias, are different views and contributions being represented?**

# The History of AI Part 2

**Task: Using your timeline of AI, construct a custom GPT that will act as an History of AI instructor.**

You will need to:

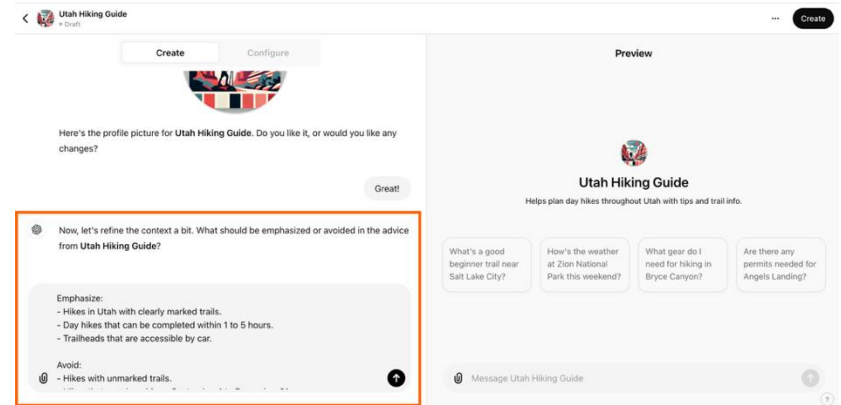
- 1) Generate a knowledge file
- 2) Create an instruction set
- 3) Define an audience
- 4) Develop interactive features

In your design, show how you customized your GPT to:

- Demonstrate Bias Awareness
- Include underrepresented voices

**You should publish your GPT before 28 October ahead of the presentation at EIT.**

The EIT wants to develop a training package to introduce its Scholars to the History of Artificial Intelligence.



**Here's one I made earlier**

<https://chatgpt.com/g/g-68cd4a0c50c481918f2d4f3464872c8f-history-of-ai-guide>

# Group Project Assignments (current)

## Multiscale Foundation Models

Claas, Charvi, Kelvin, Lauren

## Agents for Experimental Design

Erik, Jakob, James, Tobias

## Causal Integration in Foundation Models for Mechanistic Understanding

Jess, Quentin, Marek, Jolanta

+ Jhonathan

**A rep for each team to send us their final team list by 10 October 2025 ([foai@dtc.ox.ac.uk](mailto:foai@dtc.ox.ac.uk))**