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# Breaking down AI: terms and tools

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# Already AI users...

- Google search
- Netflix recommendations
- Personalised advertising
- Automatic fraud checks by the bank
- School placement systems
- Investment “robots”
- Targeted healthcare?



# AI effect

“AI is whatever hasn’t been done yet.”

Larry Tesler, computer scientist and inventor of copy-paste.



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# So, what is AI?

*“AI is technology that enables computers and machines to simulate human intelligence and problem-solving capabilities.”*

According to IBM

Intelligence?

Emotions?

Sensory perception?

Consciousness?



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# Narrow AI (vs general artificial intelligence)

Trained to perform specific tasks, make predictions based on narrow questions:

- What film might I like?
- Could that be a tumour on the patient's lung?
- Where is more vulnerable to forest fires?

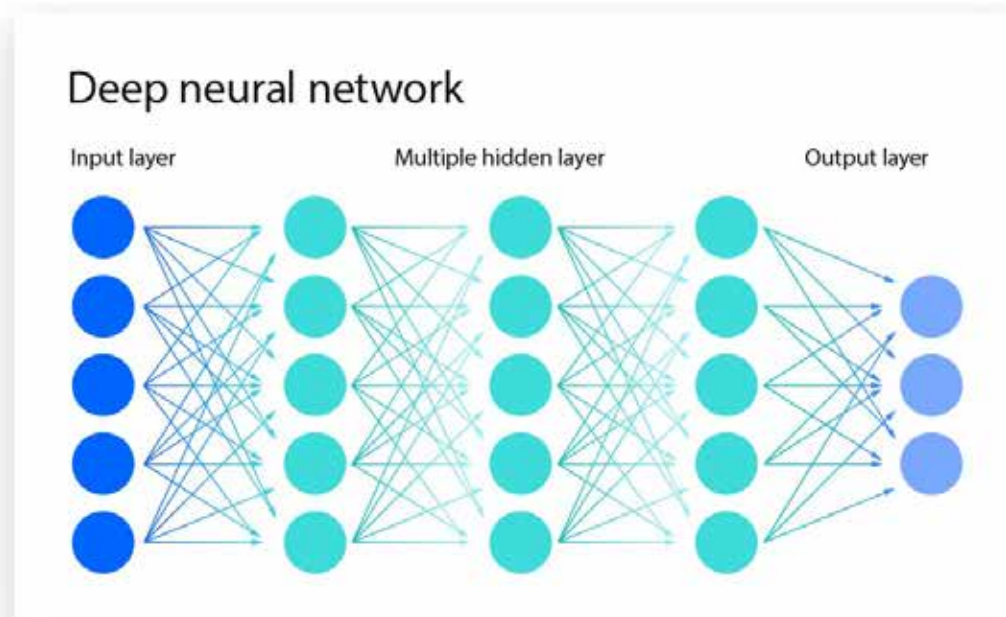
General artificial intelligence is a theoretical form of AI in which a machine has intelligence equal to humans.



# Recent hype...

Machine learning and deep learning are sub-disciplines of AI.

Both use neural networks



Machine learning: only a few layers, human supervision, labelling of data

Deep learning: multiple layers, unstructured data, unsupervised

# Large Language Models

Deep learning and transformer technology, which creates a vector for words

$V = (x, y, c)$

The vector for the word "bank" could have 300 dimensions

Allows for a search on the word and then predicts the next word based on these values

Possible answers, agnostic to the truth, or assumptions about context, responsibility – hence hallucinations





# Translation and AI

Machine Translation – history goes back to the 1950s and the Cold War

- Rules-based (grammar and the rules of a language)
- Statistical (what is the most likely translation based on previous examples?)
- Neural networks (Baidu, Google, DeepL), from 2014

ChatGPT as a further development of neural network approach to MT



# Summary

“AI” short-hand for a wide range of tech under the hood and use cases.

AI and translation: is there a substantive difference between the machine translation tech of DeepL and ChatGPT?

Both use neural networks. Remains to be seen if they have different strengths or if one will come out on top





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