



Artificial Intelligence: A Challenge to Critical Thinking and Moral Responsibility

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Chatbots

ChatGPT reaches 100 million users two months after launch

Unprecedented take-up may make AI chatbot the fastest-growing consumer internet app ever, analysts say

2 February 2023, Guardian, <https://www.theguardian.com/technology/2023/feb/02/chatgpt-100-million-users-open-ai-fastest-growing-app>

A robot wrote this entire article. Are you scared yet, human?

GPT-3

We asked GPT-3, OpenAI's powerful new language generator, to write an essay for us from scratch. The assignment? To convince us robots come in peace

8 September 2020, Guardian, <https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3>



What is the reason of the novelty of ChatGPT then?

Chatting with an AI... *(not edited)*

A conversation about problem solving

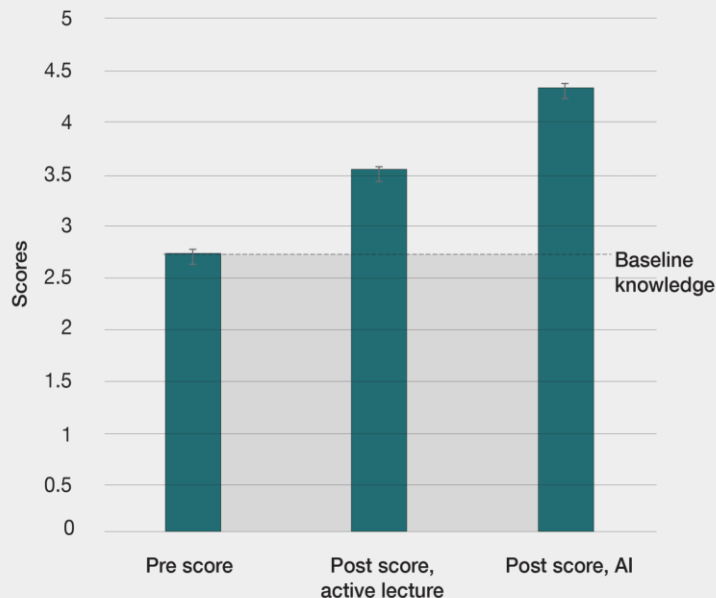
Simulating a student-teacher relationship

**It is the first time in human history
we may have such verbal exchanges
with entities which are not human beings**

**What is happening then?
How can chatbots do what they do?
And what should we do?**



(image generated with ChatGPT 4o Image Generation)



SCIENCE & TECH

Professor tailored AI tutor to physics course. Engagement doubled.

Preliminary findings inspire other large Harvard classes to test approach this fall

Anne J. Manning | Harvard Staff Writer

September 5, 2024 ■ 6 min read

But perhaps is it only hype, or worse?

**On the Dangers of Stochastic Parrots:
Can Language Models Be Too Big?** 🦜

March 2021, Proc. ACM Conf. on Fairness, Accountability, and Transparency, <https://dl.acm.org/doi/10.1145/3442188.3445922>

Noam Chomsky: The False Promise of ChatGPT

8 March 2023, New York Times, <https://www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html>

AI as Agency Without Intelligence: On ChatGPT, Large
Language Models, and Other Generative Models

10 March 2023, Philosophy & Technology, <https://link.springer.com/article/10.1007/s13347-023-00621-y>

An interpretation...

... to avoid what could be a pseudo-problem:

The Fathers of the field had been pretty confusing: John von Neumann speculated about computers and the human brain in analogies sufficiently wild to be worthy of a medieval thinker and Alan M. Turing thought about criteria to settle the question of whether Machines Can Think, a question of which we now know that it is about as relevant as the question of whether Submarines Can Swim.

We are entering a new territory...

... can we work together to explore it?

(image generated with ChatGPT 4o Image Generation)

The “Ada strategy”



“It is desirable to guard against the possibility of exaggerated ideas that might arise as to the powers of the Analytical Engine. (...)

The Analytical Engine has no pretensions whatever to *originate* any thing.

It can do whatever we know how to order it to perform. It can *follow* analysis; but it has no power of *anticipating* any analytical relations or truths.

Its province is to assist us in making *available* what we are already acquainted with.”

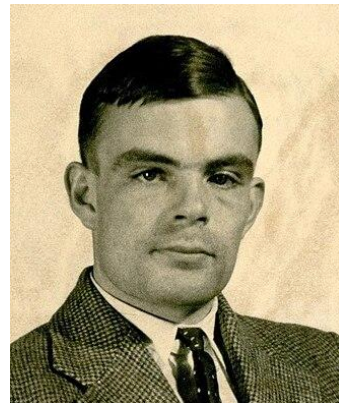
Augusta Ada Lovelace, Sketch of the Analytical Engine invented by Charles Babbage, 1842

Software as entity with programmed behavior:
it is the paradigm of usual software systems

The “Alan strategy”

“Instead of trying to produce a programme to simulate the adult mind, why not rather try to produce one which simulates the child’s? If this were then subjected to an appropriate course of education one would obtain the adult brain.”

Alan Turing, Computing Machinery and Intelligence, 1950



Software as entity with learned behavior:
it is the paradigm of machine learning

The “new” artificial intelligence: machine learning

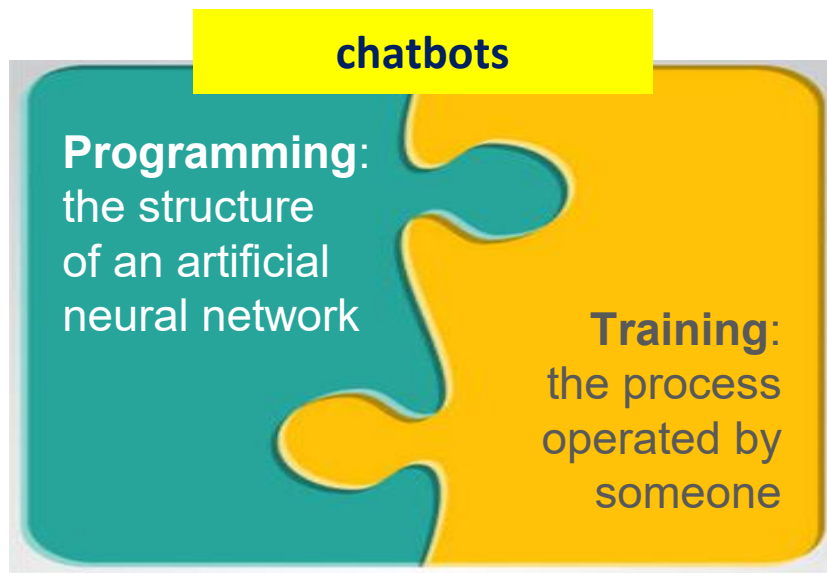
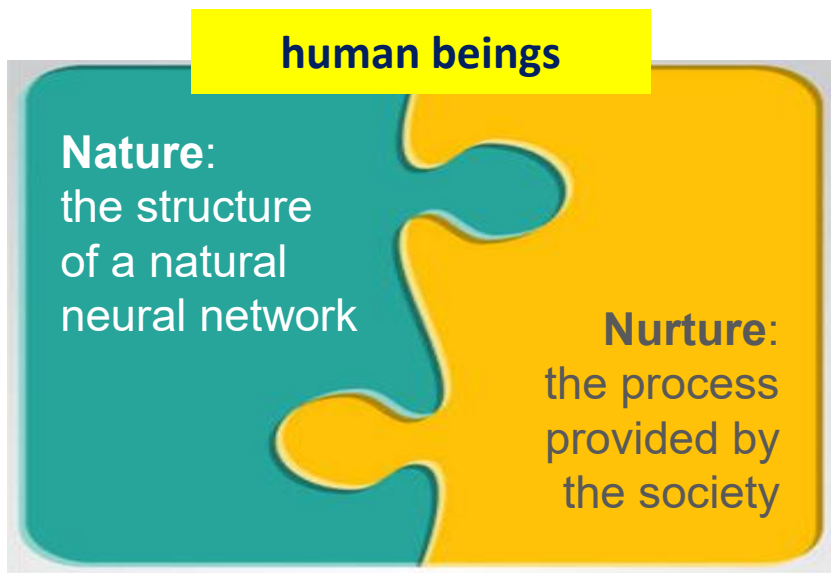
**“Machine learning is the field of study
that gives computers the ability to
learn
without being explicitly programmed”**

A. Samuel, 1959

A tentative summary

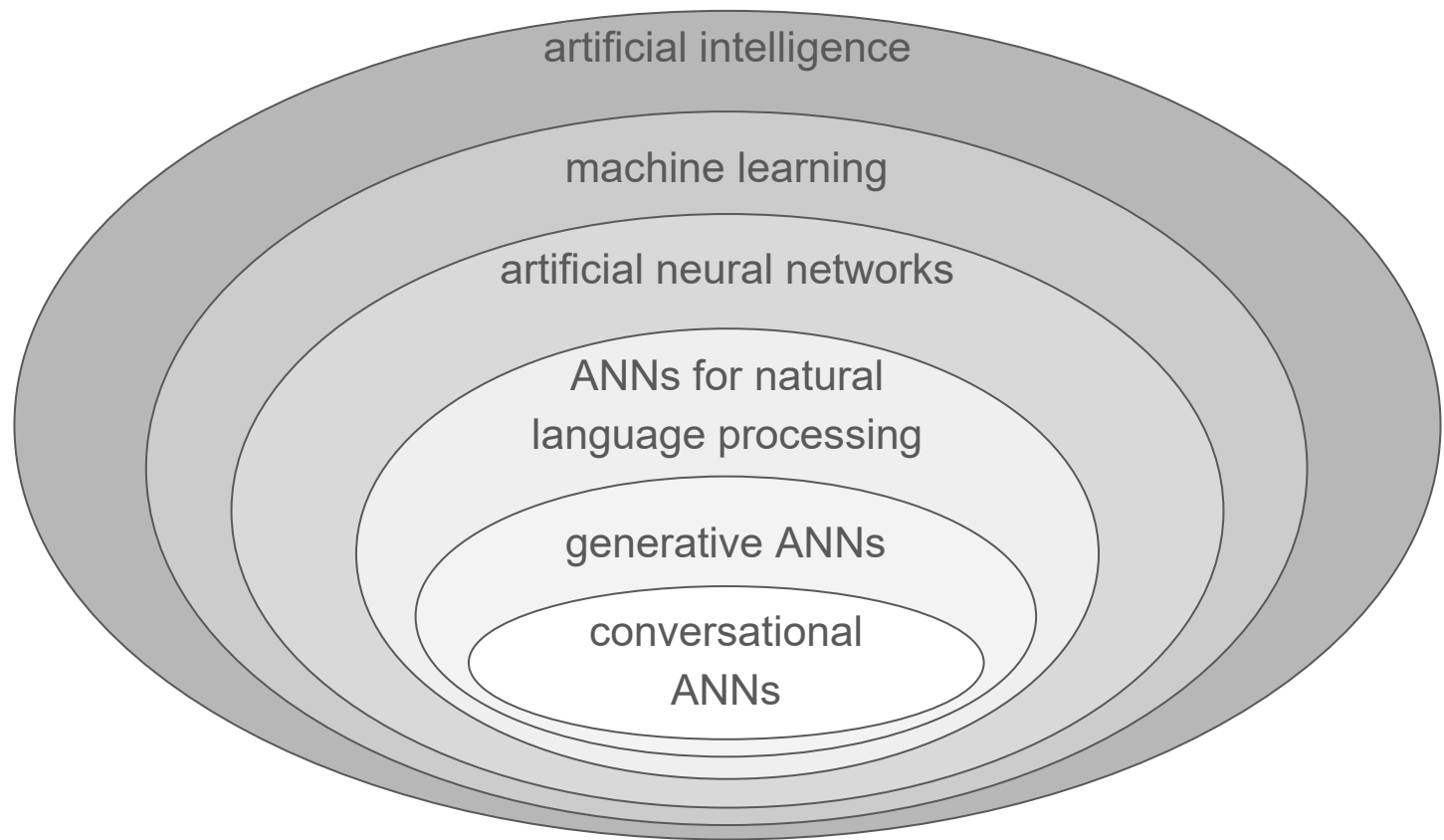
“**Nature versus nurture** is a long-standing debate in biology and society about the relative influence on human beings of their genetic inheritance (nature) and the environmental conditions of their development (nurture).”

https://en.wikipedia.org/wiki/Nature_vs_nurture



Learning machines: something on which we still have a lot to learn!

The context, to understand the novelty



Nothing really new?

Is Google Making Us Stupid?

What the Internet is doing to our brains

July/August 2008, <https://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868>
<https://docs.google.com/document/d/1BIPB2VLb01t5z7Pwp3rJXZ9pGXMivF6foxOu1CebVWU>

I and “passive” information: are **search engines** making us stupid?

I and other information producers: are **social media** making us stupid?

I and “active” information: are **chatbots** making us stupid?

An example: using X for homeworks

You have been required to write a text on a given subject,
and you could...



ask X
to write the text

draft the text
and then ask X
to improve the content

draft the text
and then ask X
to improve the style

have a conversation with X
to learn better about the subject
and then write the text



A preliminary framework

(X = generative AI systems: ChatGPT and others)

Prohibiting students from using X is ineffective

Reliably identifying whether and how students use X is unrealistic.

It makes sense, instead, to provide teachers with “good use of X” guidelines, regarding (from easiest to most difficult):

- using X well
- teaching how to use X well
- teaching well with X
- helping students learn well with X ← the most important, and critical, part

Helping students learn well with X?

From a (quite smart) student's point of view

With a tool at my disposal 24/7, 365 days a year

that allows me to freely interact

with the equivalent of a team of Nobel Prize winners at my service,

what reason do I have to dedicate my time and effort to learning?

**How would we respond to a student
who asks us this question?**

Helping students learn well with X?

From a (quite smart) student's point of view

Knowing the "[Bloom's 2 sigma problem](#)",
what role do you think remains for you, teacher?

**How would we respond to a student
who asks us this question?**

A reflection

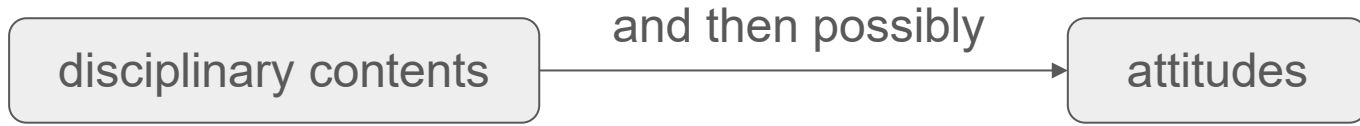
Might it be that we should instead seek a solution not in the **content**, but in the **methods** and **reasons** of teaching? (and therefore not in the *what*, but in the *how*, and even more so, the *why*)

Let us call “attitudes” things like critical thinking, creativity, problem-solving skills, communication and negotiation skills, teamwork skills, analytical and synthesis skills, self-regulation of learning, the ability to manage mistakes, intercultural skills, etc.

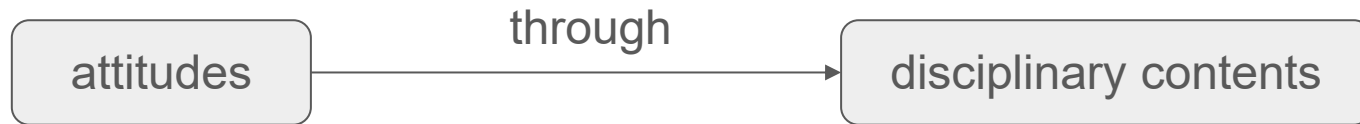
A position: “I am expected to teach you the contents of my subject; since I am a good teacher, I will also help you develop some attitudes”

Another position: “The reason for my work is to help you develop attitudes through the contents of my subject”

A possible shift in priorities



or



An interpretation: a matter of responsibility

Responsibility is about **praising** for good deeds,
but also **blaming** for bad ones

In our society, we operationalize blame with shame and sanctions...
... because human beings fear shame and sanctions...

But chatbots do not fear shame and sanctions:
we cannot expect them to be(come) morally responsible agents

AND A LEAN, SILENT FIGURE
SLOWLY FADES INTO THE
GATHERING DARKNESS, AWARE
AT LAST THAT IN THIS WORLD,
WITH GREAT POWER THERE
MUST ALSO COME -- GREAT
RESPONSIBILITY!

With great power there MUST also come great responsibility...



**... and in the face of great change,
we are called to a greater purpose**



Thanks for your attention!

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