

# History of AI

***Class 1:***

***justification, structure of the class***

***introduction and current issues with AI***

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# Today

- **Overview: How this class works**
- **Presentations**
- **First definitions**
- **Planning**

# This is a class about the role of AI in the society

- **knowledge of history is just a necessity to discuss this topic seriously**
  - **knowledge of terms and references**
    - name-dropping?
- **“objects are older than they appear”**
  - **In business and science : need for advertisement of novelty**
  - **acceleration of history?**
  - **Retrospectively developments often appear obvious**



# **This is a class about the role of AI in the society**

- **epistemology:**
  - **how are we studying AI?**
  - **why are we studying AI?**
  - **What do we take as an answer?**
  - **Who pays?**
  - **Science does not exist independently of the society.**
- **You are the future researchers in AI.**
  - **You must be starting to think about it!**
- **preparation of follow-up class: Fairness in AI, T3**
  - **seminar with specialists from the field**

# This is a class with lots of reading

- **very important to get used to it**
- **many “popular science” texts, often written by specialists of AI**
  - **should we read historical texts, for example by Alan Turing?**
    - **Philosophy: yes (Plato)**
    - **Mathematics: no (Riemann)**
- **do you have an app to read epub files?**
  - **Don't tell anyone if I provide full books plz**
  - **you can also:**
    - **buy them**
    - **find them yourself**
    - **ask me for a pdf file of the relevant chapter only – as an online variant of a stack of photocopies**

# **This is a class with lots of reading**

- I want you to get used to**
  - looking at recent books and articles**
  - skimming through texts – without cross-reading!**
  - Taking a break between the formal and programming classes of the AI master.**
  - Being critical**
    - seeing the contemporary bias**
    - seeing the US/Western bias**
  - Taking part in debates of society**
    - Who if not you can say something useful?**
    - Knowledge engineer → intellectual**

# **This is a class with with frequent tests**

# **This is a class with lots of interaction**

- **presentation of book chapters by students**
  - **15 minutes sharp**
    - **good exercise for conferences, ...**
  - **4 presentations per class (~ one per 45 minutes)**
    - **How many students?**
- **vivid discussions**
  - **no safe space concerning opinions, matters of discussion**
  - **but of course polite in words and style**
  - **provocation is good!**
    - **To wake us up on Friday morning**
    - **to make us think!**

# an unpredictable class?

- Things go differently than planned because we had a vivid discussion?
  - Great!
  - But presentations should take place in the planned time frame
- website:
  - ecampus: look for 2022M\_histAI and register
  - <https://ecampus.paris-saclay.fr/course/view.php?id=xxxx>



# Grades

- **are they useful? Do they measure knowledge and hard work or rather the ability to pass exams?**

- Is it possible to imagine a university without grading?

- **Lazy answer: I'll follow the pack and grade you**

- **40% presentation**

- **evaluation criteria:**

- Clear
    - Fun
    - understood the important points of the text
    - at least one outside reference is quoted
    - a critical point
    - Timing
    - opens to questions and discussions

- check the template and keep the numbers in your version: <https://tinyurl.com/47k57dd4>

- complete list, to be completed, on <https://tinyurl.com/5fedpvbm>

- *you can propose a text that you have read and that you would like to share*

# Grades

- **you can propose a text that you have read and that you would like to share**
  - **book chapters or scientific articles**
  - **possibly blogs if the authors write other scientific papers and you find this blog post is resuming well their positions**
  - **no towards datascience**
- **I love to read new texts proposed by you**

# Grades

- **40% turn paper on opposing views of a matter of your choice**
  - **easiest: your presentation+another paper**
    - **scientific article**
    - **journal/newspaper article**
    - **one of the two should be found on Google scholar**
  - **should express an opinion, not an overview**
  - **verify with me that it's a good paper**
  - **deadline Wednesday 1/11/23, right before classes of T3**

# Grades

- **20% multiple-choices and class interactions**
  - **bring a computer or a smartphone with internet access**
  - **9:00 – 9:10, True = vrai, False = faux**
  - **you haven't read the paper and failed the multiple-choice?**
  - **Or you were late?**
    - **No worries. Make it up by a great participation in the class!**
    - **It's be great if each of you said something each class!**

# Me

- **mathematician by trade (maîtrise et DEA de Paris 11 / Polytechnique)**
  - **Arithmetic geometry**
- **then formal and computational syntax, corpus linguistics, treebanks, Natural Language Processing, typology**
- **work on text generation, variations of word order, NLG systems, idea generation (patent text generation, massive defensive publishing) currently on 80% research leave at Qatent**
- **Habilitation on epistemology of NLP**
  - **What is an acceptable answer to a question ?**
  - **How will AI change Science ?**
    - **One algorithm for all questions?**
  - **Is there an infinite space of language?**

# Special situation: political disorder

- **pandemic, climate change, wars, danger of nuclear annihilation**
- **more time needed to talk**
- **greater needs for communication**
- **future: will there be a singularity?**
  - **Machines better than our brain**
  - **Machines taking over**
- **now: are machines controlling us?**
  - **Relation between AI and war, AI and climate change?**

# Special situation: political disorder

- **Behavior controlled by machines**
  - **“They sell our data” → no!**
    - **What do they sell?**
  - **they decide what we see, social media bubble**
  - **machines are not better than our brains but they outsmart us already**
    - **[https://en.wikipedia.org/wiki/The\\_Social\\_Dilemma](https://en.wikipedia.org/wiki/The_Social_Dilemma)**
    - **Cambridge-Analytica**

# utopia vs dystopia

- **Utopia**
  - ?
- **Dystopia**
  - ?



# Self-reflection: central point of intelligence

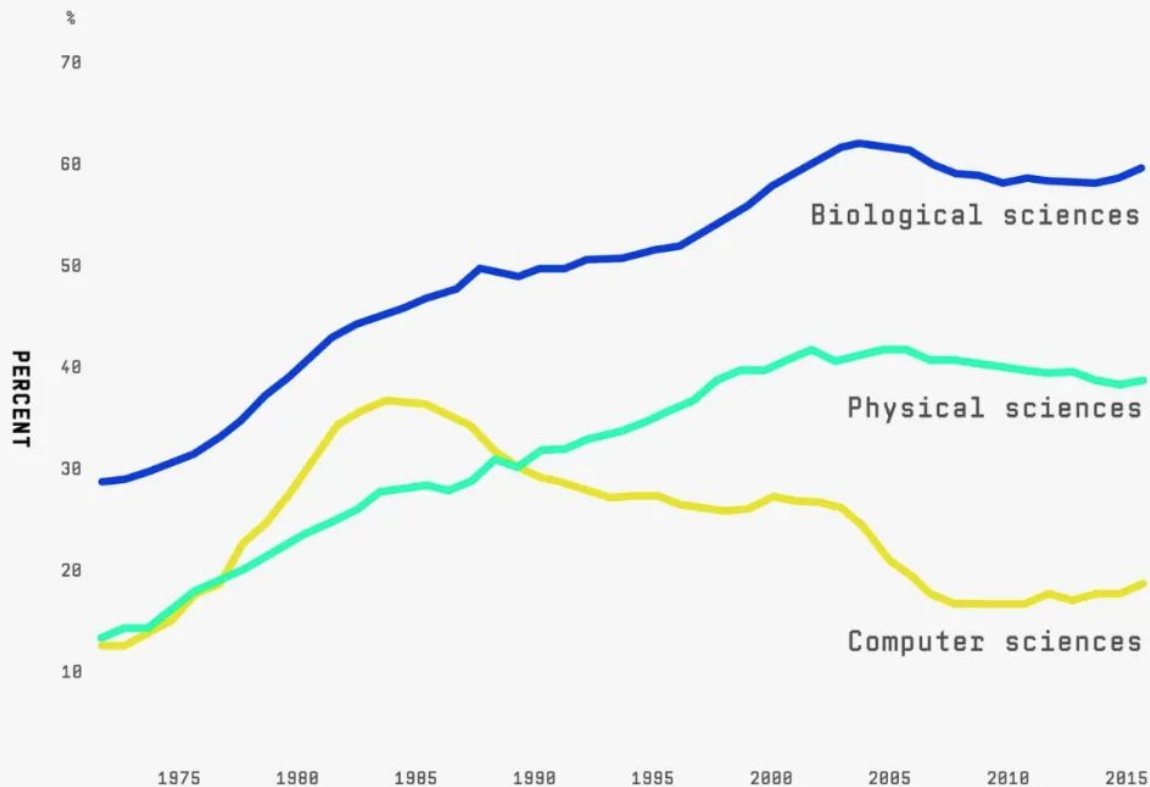
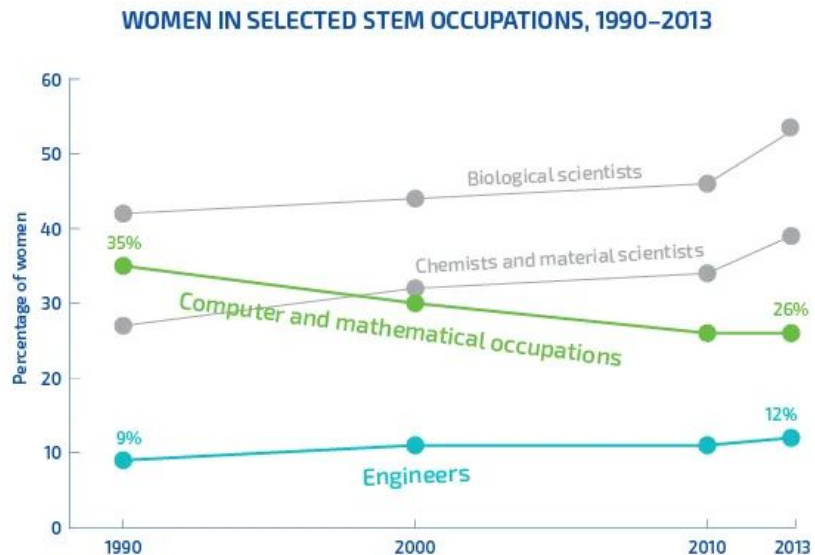
- mirror test (mark test): self-awareness
- behavioral science
  - Self-reflection:
    - why do I like some food?
    - Why do I like some brand?
    - Why do I like some person?
    - Why do I like AI?



# Gender and AI

<https://syncedreview.com/2020/03/13/explori>

## WOMEN EARN A SMALLER SHARE OF COMPUTING DEGREES THAN 30 YEARS AGO



# Self-reflection: central point of intelligence

- **gender imbalance!**
  - **AI is womb envy?**
    - [Lighthill report on AI 1973](#)
    - "In no part of the field have the discoveries made so far produced the major impact that was then promised"
    - → neurotic replacement of creation by artificial life?
- **Don't over-psychologize!**
  - **More chance than choices**
  - **role of chance constantly underestimated in our thinking**



# Randomness

- “....nothing is so alien to the human mind as the idea of randomness.” --John Cohen
- Overfitting?



# Notions and definitions

- **Intelligence**

- **Wikipedia:**

- **ability to perceive or infer information, and to retain it as knowledge to be applied towards adaptive behaviors within an environment or context.**
    - **the capacity for logic, understanding, self-awareness, learning, emotional knowledge, reasoning, planning, creativity, critical thinking, and problem-solving.**

- **artificial vs natural intelligence,**

- **human vs animal intelligence,**

- **intelligence  $\subseteq$  imagination?**

**Merci de votre**

**attention**

**considération**

**intérêt**

**écoute**

**présence**

**curiosité**

**question**

**!**