

# Pedagogical use of Generative AIs

Workshop @Fayol Day


Guillaume MULLER & Karine RICHOUE & Julien MORICE

Feb 01 2024, Saint-Étienne

- 1 **Presentations**
- 2 Gen AI Ecosystem
- 3 Functioning
- 4 Use(s) of ChatGPT
- 5 Art of Prompt / Prompt Engineering
- 6 Pratical Exercise
- 7 GenAI uses @MinesSE
- 8 Limits & dangers of Generative AIs
- 9 And next?

Guillaume MULLER




- Assistant Professor
- AI, Cyber-Security
- 



Karine RICHOU





- Pedagogic Engineer
- 



Julien MORICE



- Pedagogic Engineer
- In charge of PracTice
-  



Wooclap (code: QUIZAI)



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## Maths

[Wolfram- \$\alpha\$](#)  [may.09]

## Text

[DeepL](#) [aug.17]

[ChatGPT](#) [dec.22] OpenAI

[BingChat](#)  [fev.23]

[Bard](#)  [mar.23]

[LLAMA/Alpaca](#)  [fev.23]

[ChatSonic](#)

[Perplexity](#)

...

## Code










[CoPilot](#) [oct.21]  

[TabNine](#)

...

...

- Texte : générer, résumer, traduire, reformuler, poser/répondre aux questions...

...	Image	Sound	Video
	<a href="#">Dall-E</a> OpenAI [Jan.21]	<a href="#">MuBERT</a>   [Dec.22]	<a href="#">D-ID</a>  [Sept.22]
	<a href="#">Stable Diffusion</a> [Dec.22]	<a href="#">Music LM</a>   [Jan.23]	<a href="#">Synthesia</a> [2017?]
	<a href="#">MidJourney</a>  [Jul.22]	<a href="#">VallE</a>   [Oct.22]	...
	<a href="#">InstantART</a> [Apr.23]	<a href="#">Murf</a>  [Oct.20]	
...		...	

## Single tools → Integration

- Web Conference ([GoogleMeet](#), Teams...): transcripts, room beautification
- Operating Systems (Cortana → Copilot...)
- [MOOCs \(content + audio + video\)](#)

## Updated & Search-able lists

### There's an AI for that

The screenshot shows the homepage of 'THERE'S AN AI FOR THAT'. The header features the site title and a search bar. Below the header, there are two main sections: 'Just Launched' and 'Featured'. The 'Just Launched' section contains a grid of AI tool cards, each with a logo, name, and a brief description. The 'Featured' section highlights specific AI tools with larger icons and text. A left sidebar contains navigation links such as 'Home', 'About Us', 'Contact Us', and 'Privacy Policy'.

### Future Tools

The screenshot shows the homepage of 'Future Tools'. The header includes the site logo and navigation links. The main content area features a large headline: '"FutureTools Collects & Organizes All The Best AI Tools So YOU Too Can Become Superhuman!"'. Below this, there is a search bar and a grid of AI tool cards. A 'Product Hunt' badge is visible, along with a 'Join The Free Newsletter' button. The bottom of the page displays a 'Showing 1/25 of 250+ Total Tools' indicator and a list of featured tools.



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## Functioning GPT: **trained to predict the next element of a sequence**

- **Attention** mechanism

The FBI is chasing a criminal on the run .

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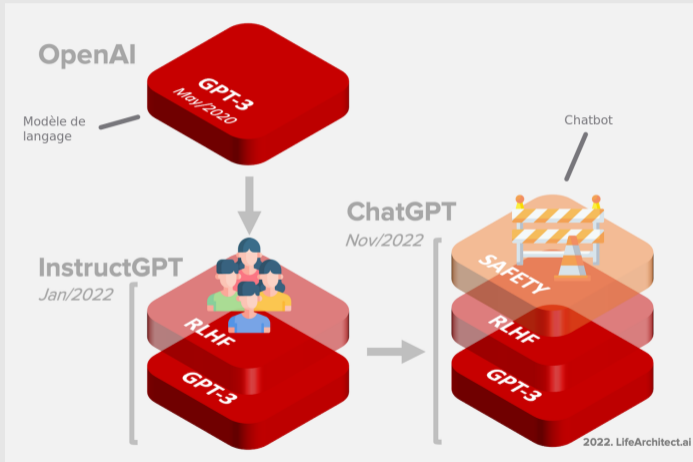
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**Answering a question is a side effect**

## “Tuning” as a ChatBot



## Simple question

> What is the best impact for climate change: eat less meat or eat local?

- **meat 70%** / local 30%

## Simple question

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## Adding context

> I am an animal breeder. ...

## Simple question

> What is the best impact for climate change: eat less meat or eat local?

- **meat 70%** / local 30%

## Adding context

> I am an animal breeder. ...

- meat 47% / **local 52%** / ...

## Simple question

> What is the best impact for climate change: eat less meat or eat local?

- **meat 70%** / local 30%

## Adding context

> I am an animal breeder. ...

- meat 47% / **local 52%** / ...

> I am a biodynamic farmer. ...

- meat 17% / **local 82%** / ...

> I am antispecist. ...

- **meat 94%** / local 5% / ...



## Simple question

> What is the best impact for climate change: eat less meat or eat local?

- **meat 70%** / local 30%

## Adding context

> I am an animal breeder. ...

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## “Yes Man”/“Baratineur”

- Does **NOT** know/seek the truth
- Gives most probable answer **in a context...**
  - ... that **you** provide
- = Answer that **satisfies you** the most

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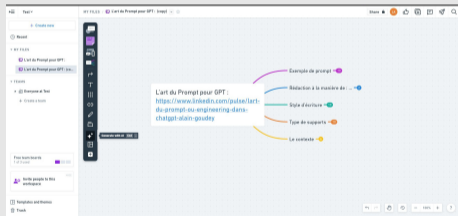
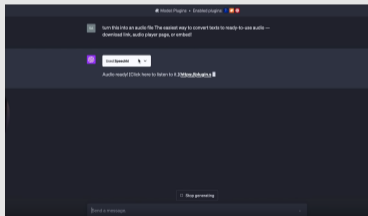
# 2 modes: ChatGPT as a Plug-In vs. PlugIn in ChatGPT ?

## ChatGPT $\supset$ Existing App

Access the Internet  
Analyze a data file  
Modify an image

## ChatGPT $\subset$ Existing App

Bing Search Engine  
Whimsical (MindMaps)  
QuizWizard (Quizzes)  
Office 365 (ChatGPT/Copilot)



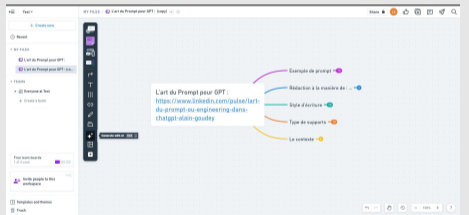
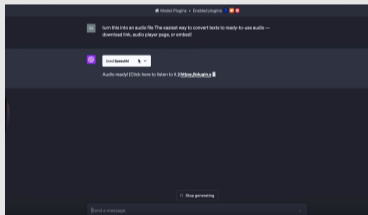
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! References: BingChat/Copilot  $\oplus$  vs. ChatGPT  $\ominus$

## GPT-4 Turbo additions

- More recent data (**2023**)
- Context > **128k tokens** (books!)
- 2-way speech (TTS + STT)
- **Reproducible** results
- **GPTs** (no-code!)

# Examples

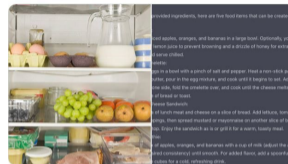
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## Examples

- **Picture fridge** → **recipe**
- Describe a video
- **Validate (US) attorney exam**
- Code a « Pong » game

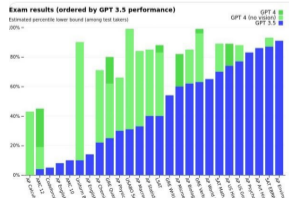
Here's how I gave GPT-4 a photo of a refrigerator and asked it to come up with food recipes in under 60 seconds.



La nouvelle version 4 de Chat-GPT passe l'examen d'admission pour devenir avocat (US) avec 90% de succès contre 10% auparavant (la fameuse version révolutionnaire du mois de novembre).

Progrès exponentiel et vertigineux de l'intelligence artificielle!

[Translate Tweet](#)



## Microsoft + OpenAI partnership

⇒ BingChat/Copilot, integrated to:

- Bing (Search Engine)
- Office 365
- Teams
- Windows
- VSCode

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## Principles

- Provide context
- Play a role  
Game/Personas

## Resources

- [ChatGPT Prompt Book](#)
- [Alain GOUDEY](#)
- [ChatGPT Pour Les Nuls \(Y. SALMANDJEE, 2023\) \\$](#)
- [ChatGPT, 55 prompts pour les enseignants \(P. SEGALA 2023\) \\$](#)

Matthieu




Matthieu

## Prompt ChatGPT

### Le Pense-bête Ultime

Agis comme... [RÔLE]	Tu dois... [ACTION]	Ton style... [TONALITÉ]	Sous forme... [FORMAT]
Consultant	Email de vente 🔥	Créatif 🔥	Liste
Entrepreneur 🔥	Publicité	Professionnel	Tableau 🔥
Journaliste	Fiche produit 🔥	Passionné 🔥	Mindmap
Prompt engineer	Mots-clés SEO	Direct	Slides
Copywriter 🔥	Résumé exécutif	Empathique	Code 🔥
Project manager	Article de blog	Formel	Gantt
Comptable	Réseaux sociaux	Optimiste 🔥	SWOT
Publicitaire 🔥	Analyse	Indirect	HTML 🔥


  
Matthieu | outilia.fr

Matthieu

## Prompt ChatGPT

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Prompt engineer	Mots-clés SEO	Direct	Slides
Copywriter 🔥	Résumé exécutif	Empathique	Code 🔥
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## Tips

- Start simple
- Iterate depending on answers

## Prompts written by others

- [PromptVine](#)
- [FlowGPT](#)
- [PromptDen](#)
- [PromptPal](#)
- [CrowdGPT](#)
- [And a list...](#)

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## Integration & “Inception”

- Plugins: tool directly integrated
- ChatGPT itself will help you

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# Workshop outline

## 1. Select a Course/Topic

- (1-)2-all mode



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## 2. Imagine prompts so the AI helps you build the course

## BingChat/Copilot accounts (⚠️ LEAKS ⚠️)

<https://copilot.microsoft.com>

User: testbingchat00[1-5]@altrans.fr.nf

Pass: ChatGPTTest00[1-5]!

# Workshop outline

## 1. Select a Course/Topic

- (1-)2-all mode

## 2. Imagine prompts so the AI helps you build the course

	Resources
Topic	...
Objectives	<a href="#">Bloom's Taxonomy</a>
Theoretical &	<a href="#">"Dale's Pyramid"</a>
Practical Content	<a href="#">"Livret du Participant" MEDIANE 2023 (p.53)</a>
Evaluations	<a href="#">"Livret du Participant" MEDIANE 2023 (p.59)</a>

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## Basics

- Generate ideas
- Illustrate a course
- Create a trailer
- Generate the syllabus

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## Formation & Evaluation

- Create quizzes
- Prepare a sequence
- Generate specialized material (disabilities, uniqueness)
- Propose an evaluation grid


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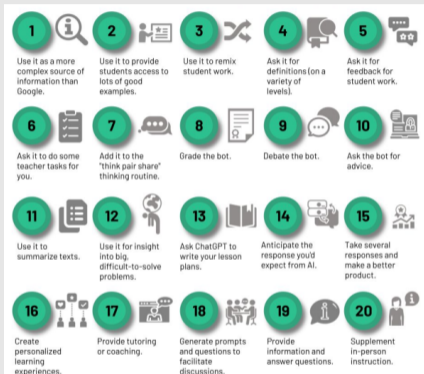
## Formation & Evaluation

- Create quizzes
- Prepare a sequence
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## Learning activities

- FlashCards for home study
- Create Serious Game 
- Develop Critical Thinking

## AI in the classroom



## 80 ways to use ChatGPT in Classroom (\$)

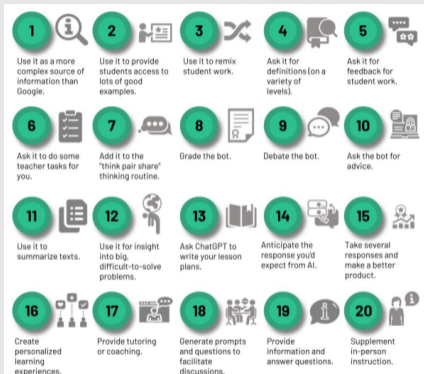
### 80 Ways to Use ChatGPT in the Classroom

Using AI to Enhance Teaching and Learning

Stan Skrabut, Ed.D.

# Pedagogical uses of ChatGPT – Resources

## AI in the classroom



## 80 ways to use ChatGPT in Classroom (\$)

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## IMT Resources

- [Ayden & Ariane](#)



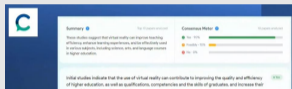
There are tools...

- GPTZero
- DetectGPT
- Originality.ai (\$)
- Compilatio

**BUT**

- ChatGPT comes from Machine **Learning**
  - Trained to minimize a metric
  - Detector can be  $\subset$  metric  $\Rightarrow$  **re-train**

## Consensus: compare opinions



## Elicit: find papers from (semantic) query

The screenshot shows the Elicit interface with a search query 'How effective is feedback for enhancing learning in a classroom?'. The results are displayed in a table with columns for 'Abstracts', 'Number of participants', 'Position (first/second)', 'Year', and 'Quality'. The table contains four rows of results.

Abstracts	Number of participants	Position (first/second)	Year	Quality
17	284	2020-2021 (first)	2020/2021	4.5
20	28	2020-2021 (second)	2020/2021	4.5
24	23	2020-2021 (first)	2020/2021	4.5
12	18	2020-2021 (second)	2020/2021	4.5

## ResearchRabbit : (semantic) papers recommendation



# For research

**Consensus:** compare opinions



**Elicit:** find papers from (semantic) query

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20	26	2020-10-01-01	Effectiveness of peer-reviewed papers with focus on the quality of the abstract	3.5/5.0
24	23	2020-10-01-01	Effectiveness of peer-reviewed papers with focus on the quality of the abstract	3.5/5.0
12	18	2020-10-01-01	Effectiveness of peer-reviewed papers with focus on the quality of the abstract	3.5/5.0

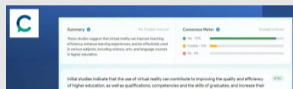
**ResearchRabbit :** (semantic) papers recommendation



ChatGPT to write a **PhD**?

# For research

**Consensus:** compare opinions



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Options	Number of participants	Position (most relevant)	Date	Duration	Article
17	244	2020-10-20 10:00:00	2020-10-20	10:00:00	
20	20	2020-10-20 10:00:00	2020-10-20	10:00:00	
24	24	2020-10-20 10:00:00	2020-10-20	10:00:00	
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**ResearchRabbit :** (semantic) papers recommendation



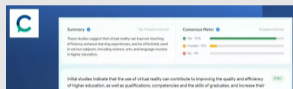
ChatGPT to write a **PhD**?

(Talk2)ArXiv: “discuss” with papers!

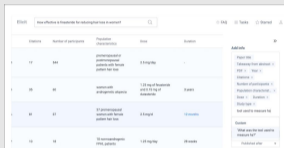


# For research

**Consensus:** compare opinions



**Elicit:** find papers from (semantic) query



Options	Number of participants	Position (the frequency)	Date	Quality
1	344	1 (20th percentile)	2023-07-16	High
2	36	2 (40th percentile)	2023-07-16	High
3	33	3 (50th percentile)	2023-07-16	High
4	33	4 (60th percentile)	2023-07-16	High
5	34	5 (70th percentile)	2023-07-16	High

**ResearchRabbit :** (semantic) papers recommendation



ChatGPT to write a **PhD**?

**(Talk2)ArXiv:** “discuss” with papers!



**!** Guides from Publishers **!**

- **ACM**
- **IEEE**

- **arXiv**
- **Elsevier**

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## Societal point-of-view – 1

- Sovereignty (G a f apple windows)
- Privacy
  - during training ([Licences](#))
  - during usage ([Privacy](#))
- Jobs (⊖ [Workers](#), UK, [Devs/UN](#) ⊕)
- Job “Creation”: [Kenya](#) (2\$/day, dirtiest content)
- Job “Destruction”: writing, translation, design...
- ...

🇫🇷 [Mistral](#)



## Societal point-of-view – 2

- ...
- Cyber-security
  - Fake news / Phising / Social Engineering / President scam
  - Virus/Malware
- Information
  - Information bubble
  - Targeted disinformation
  - Manipulation (Brexit/Trump)
  - Attention-jacking (🎵) W





## Education

- Students that do no work
- Evaluations are more difficult to design
- Inequalities w.r.t. service prices

## Research

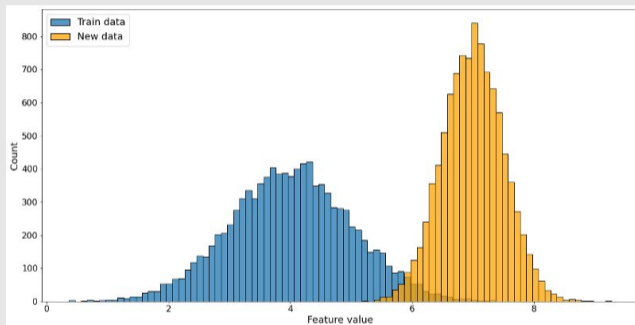
- Fake data
- Fake contents
- ChatGPT = co-author?

## Environment

- Training: 205 flights Paris ↔ NY
- Usage: 1-10 Wh vs.  $10^{-4}$  Wh ?

## Model Decay

- Distribution Drift

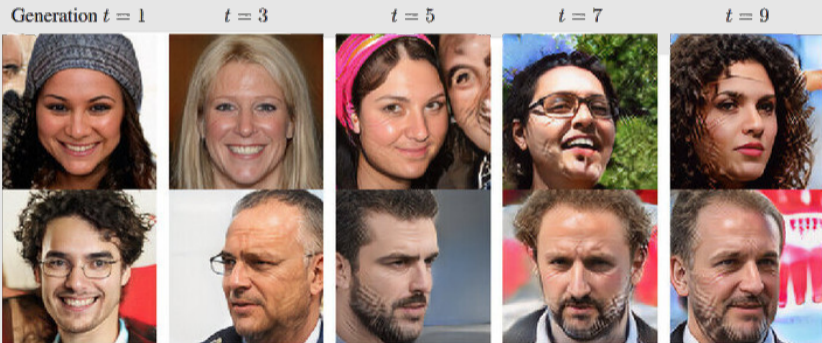


# Intrinsic problems

## Model Decay

- Distribution Drift

### ⚠ Consanguinity (training in **closed loop**) ⚠



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## To subscribe

- Send an email with “**subscribe**” as Subject to :  
[chagtgpt-pedagogie-request@framagroupes.org](mailto:chagtgpt-pedagogie-request@framagroupes.org)

- GPTFrance: News
- Plagiat & IA Générative?

## A Teacher's Prompt Guide to ChatGPT

### Guide de l'enseignant L'usage de ChatGPT « ce qui marche le mieux »

*Écrit par Andrew Herft  
Traduit et adapté par Alexandre Gagné*

## IA for teacher – An open manual





 Questions ?

 Remarks ?

PS:

Do not forget to stay polite with GenAIs...  
Just in case they take over the world,  
they might spare you 😊