

**#TESOLSPAINCáceres2024**

**8-10th March 2024**



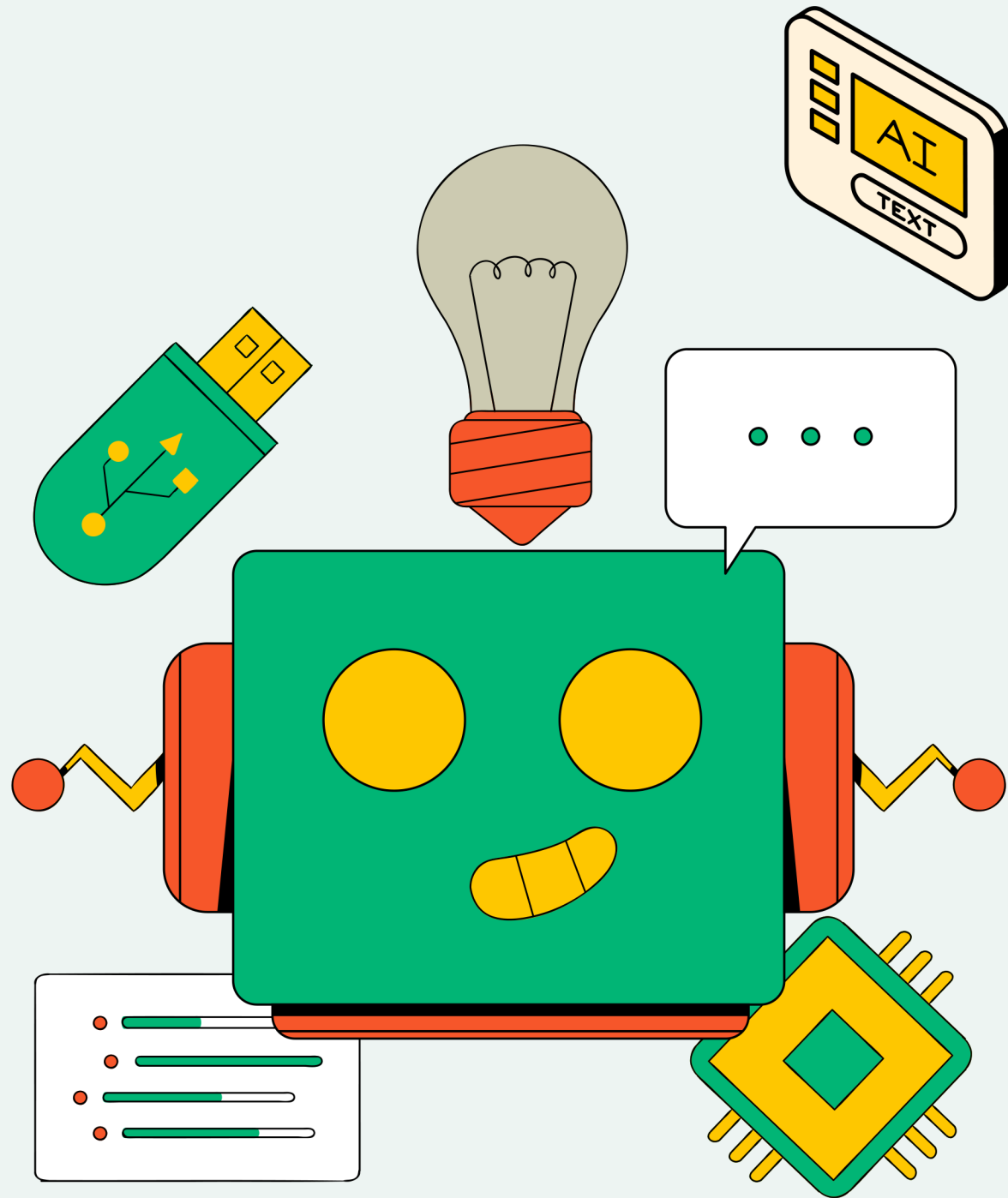
Teacher Training College  
University of Extremadura

**CÁCERES**



**47TH ANNUAL CONVENTION**

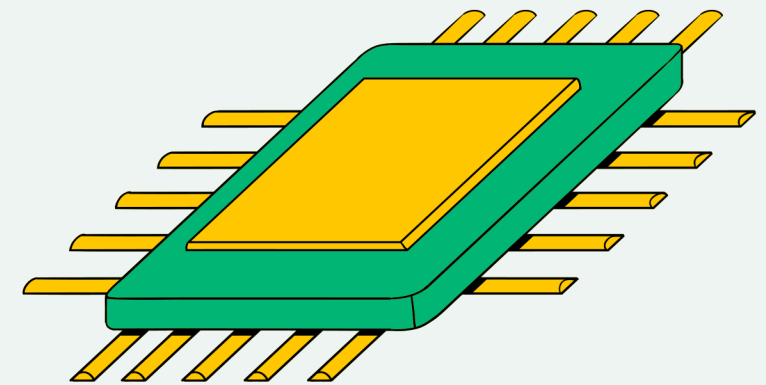
**FILLING  
THE GAPS**

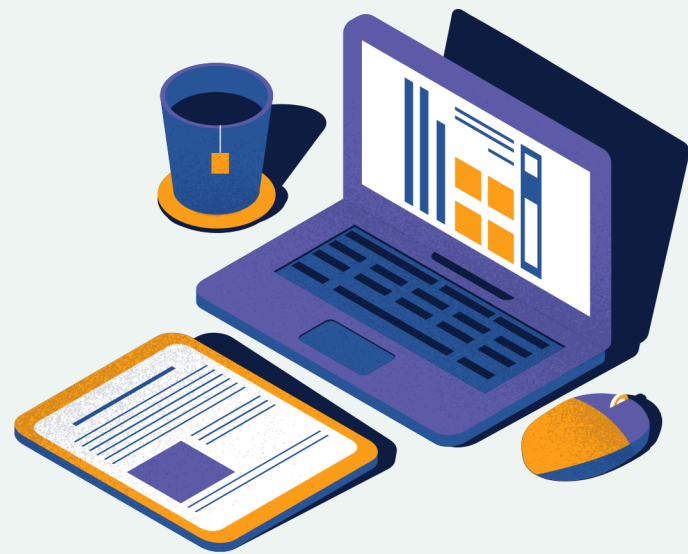
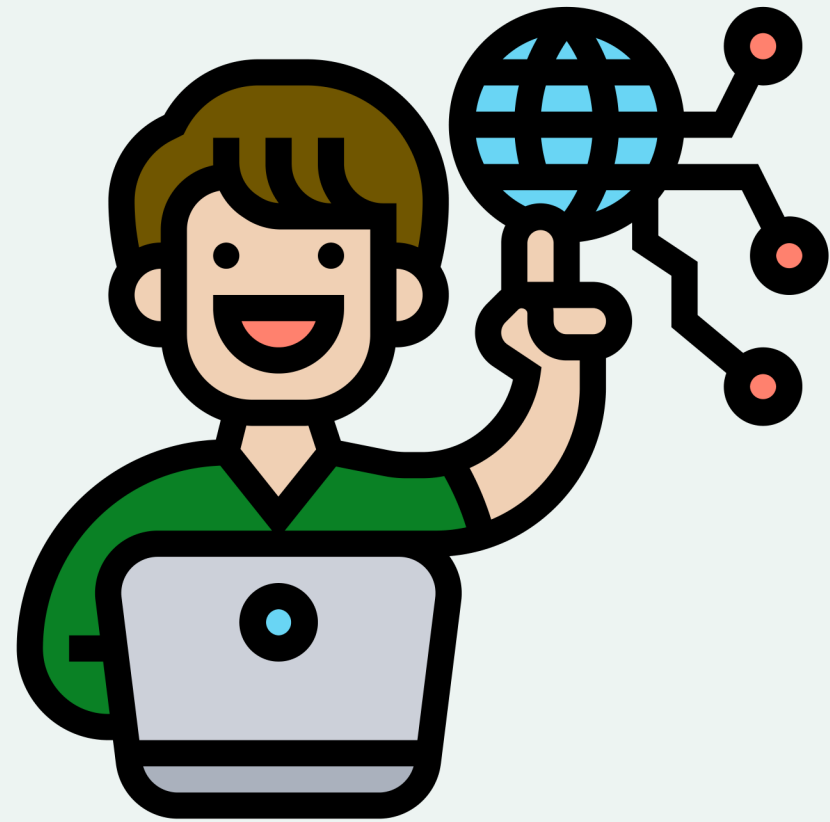


# CHIT-CHAT GPT: USING VIRTUAL LANGUAGE ASSISTANTS IN THE CLASSROOM

PRESENTED BY:

CIARÁN LYNCH

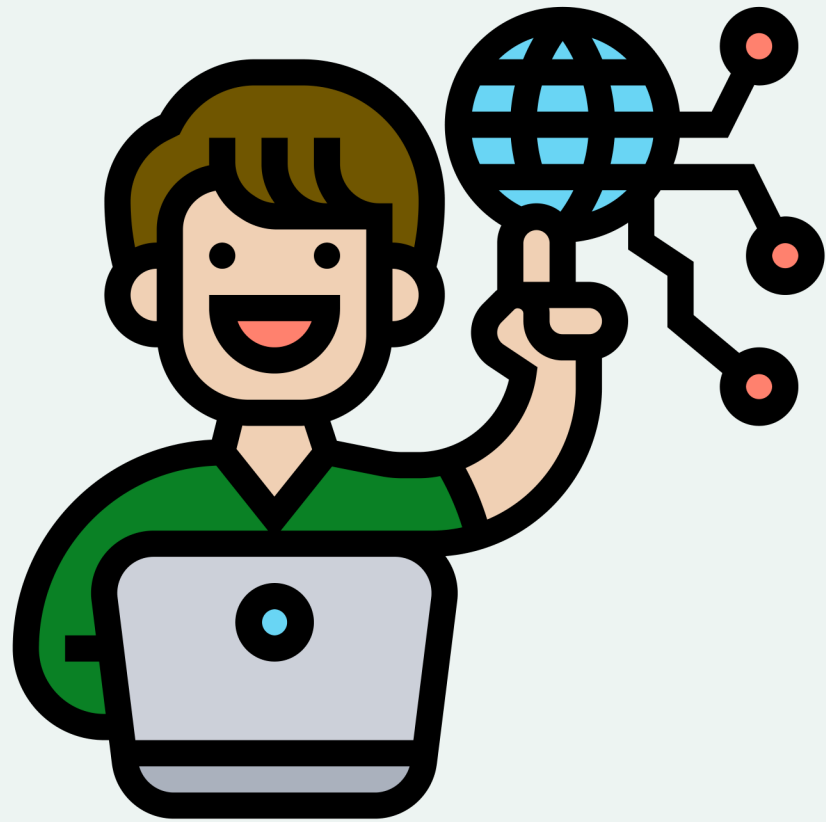




## ABOUT ME?

- Working in ELT and EdTech for over 10 years

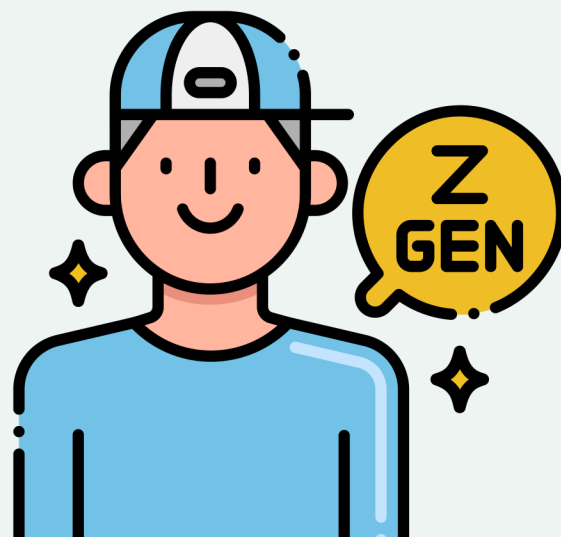
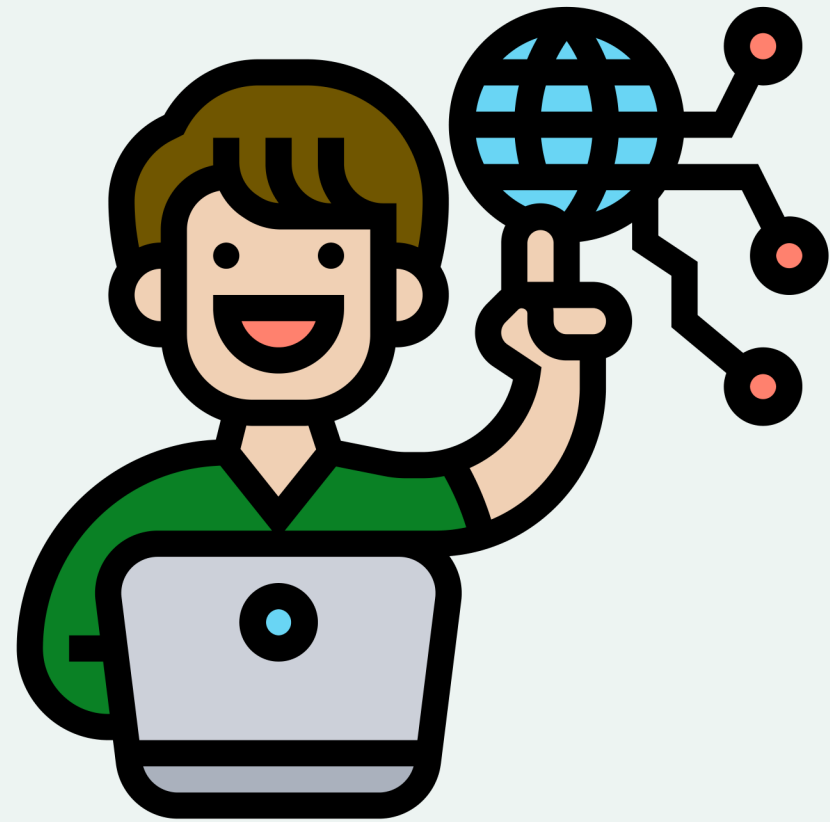




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## ABOUT ME?

- Working in ELT and EdTech for over 10 years
- Currently working on designing materials for online platforms.
- A lot of my work focuses on furthering education with young learners through technology.



## PRESENTATION OUTLINE

- Introduction
- Key concepts
  - LLMs
  - NLP
  - TTS & STT
  - APIs
  - VLAs
  - Hallucinations
- How everything works
- Uses in language learning
- Uses in the classroom
- Preparing for the Future
- Questions and Answers

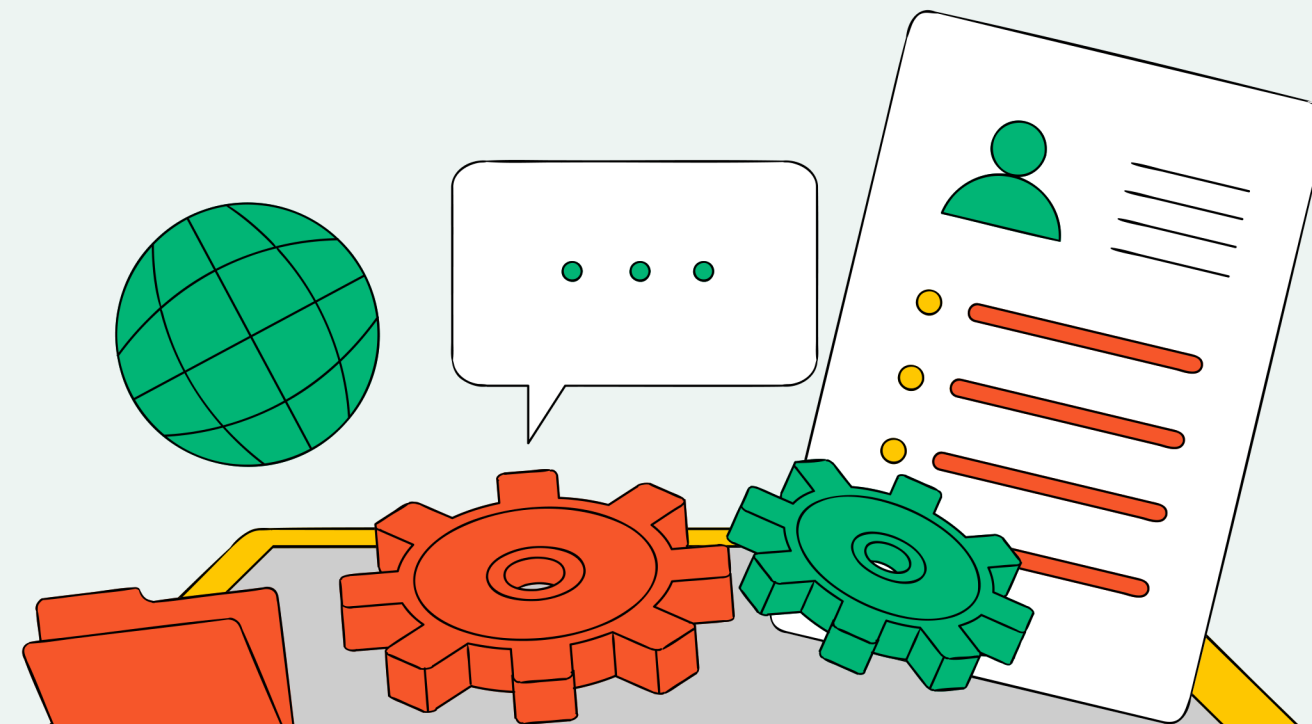


# INTRODUCTION

How have you used AI in the last year?

How has it affected your teaching & students?

How do you see AI affecting ELT in the future?



## INTRODUCTION

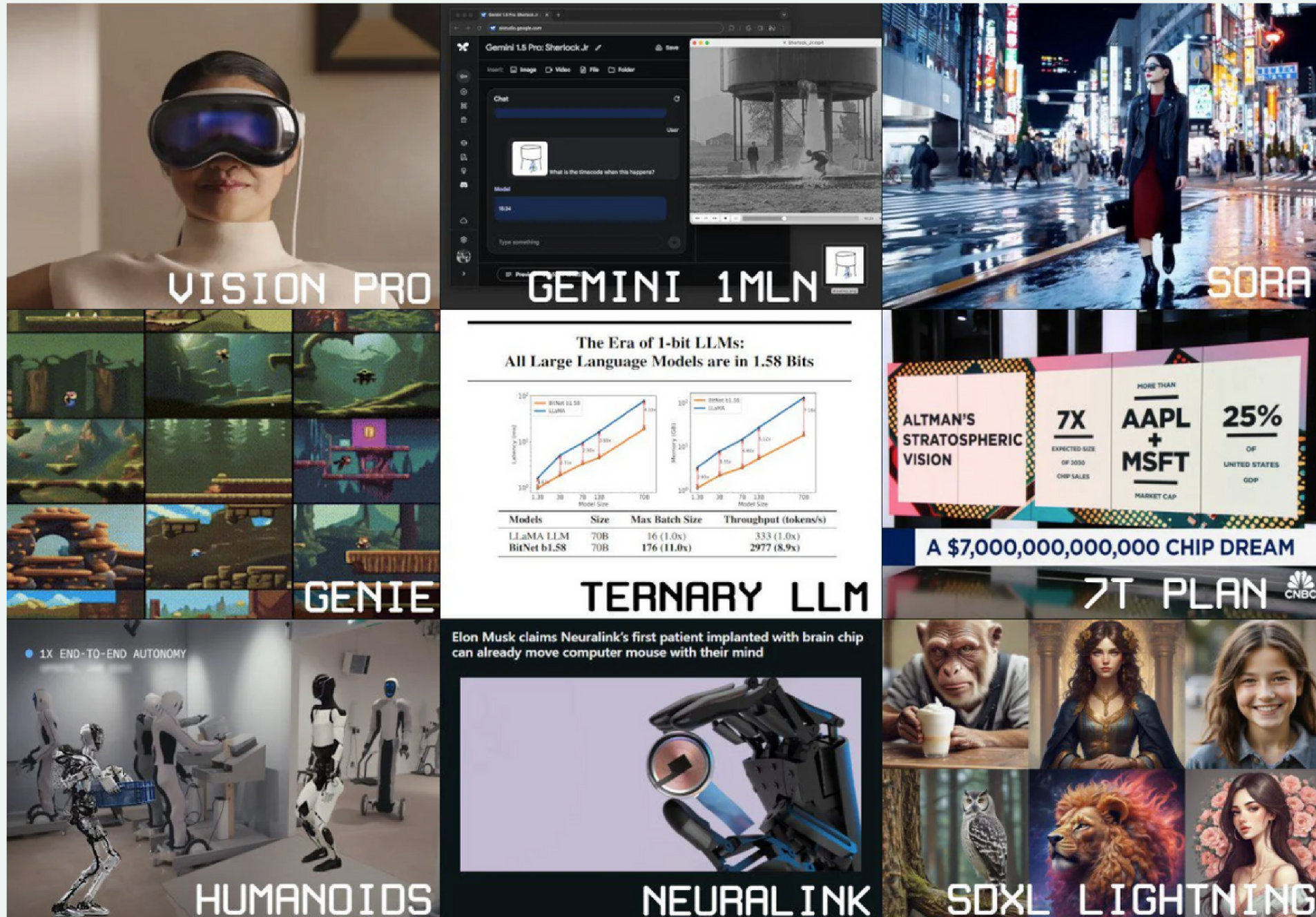
Imagine a world where personalised language tutors are readily available at the click of a button or the utterance of a voice command.

Virtual language assistants, powered by cutting-edge AI technologies such as natural language processing, speech recognition, and machine learning, are opening up new frontiers in the way we learn and practice languages.





# INTRODUCTION



As technology continues to advance at an unprecedented pace, the classroom of the future is set to undergo a remarkable transformation.



# INTRODUCTION

## February 2024

**VISION PRO**

**GEMINI 1.5 Pro**

**SORA**

**GENIE**

**TERNARY LLM**

**7T PLAN**

**HUMANOIDS**

**NEURALINK**

**SOXL LIGHTNING**

Models	Size	Max Batch Size	Throughput (tokens/s)
LLaMA LLM	70B	16 (1.0x)	333 (1.0x)
BitNet b1.58	70B	176 (11.0x)	2977 (8.9x)

ALTMAN'S STRATOSPHERIC VISION

7X EXPECTED SIZE OF 2025 CHIP SALES

MORE THAN AAPL + MSFT MARKET CAP

25% OF UNITED STATES GDP

A \$7,000,000,000,000 CHIP DREAM

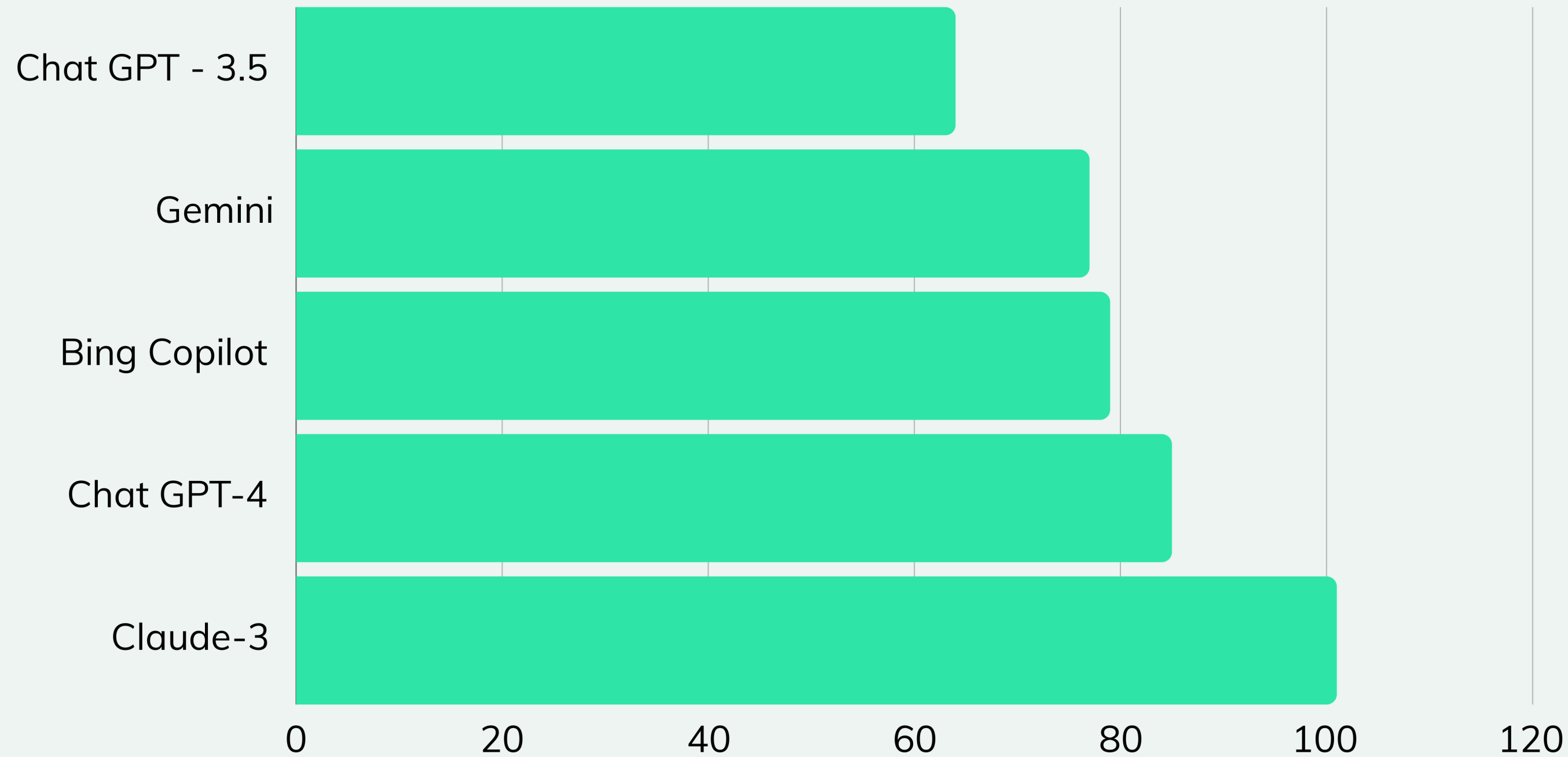
1X END-TO-END AUTONOMY

Elon Musk claims Neuralink's first patient implanted with brain chip can already move computer mouse with their mind

As technology continues to advance at an unprecedented pace, the classroom of the future is set to undergo a remarkable transformation.



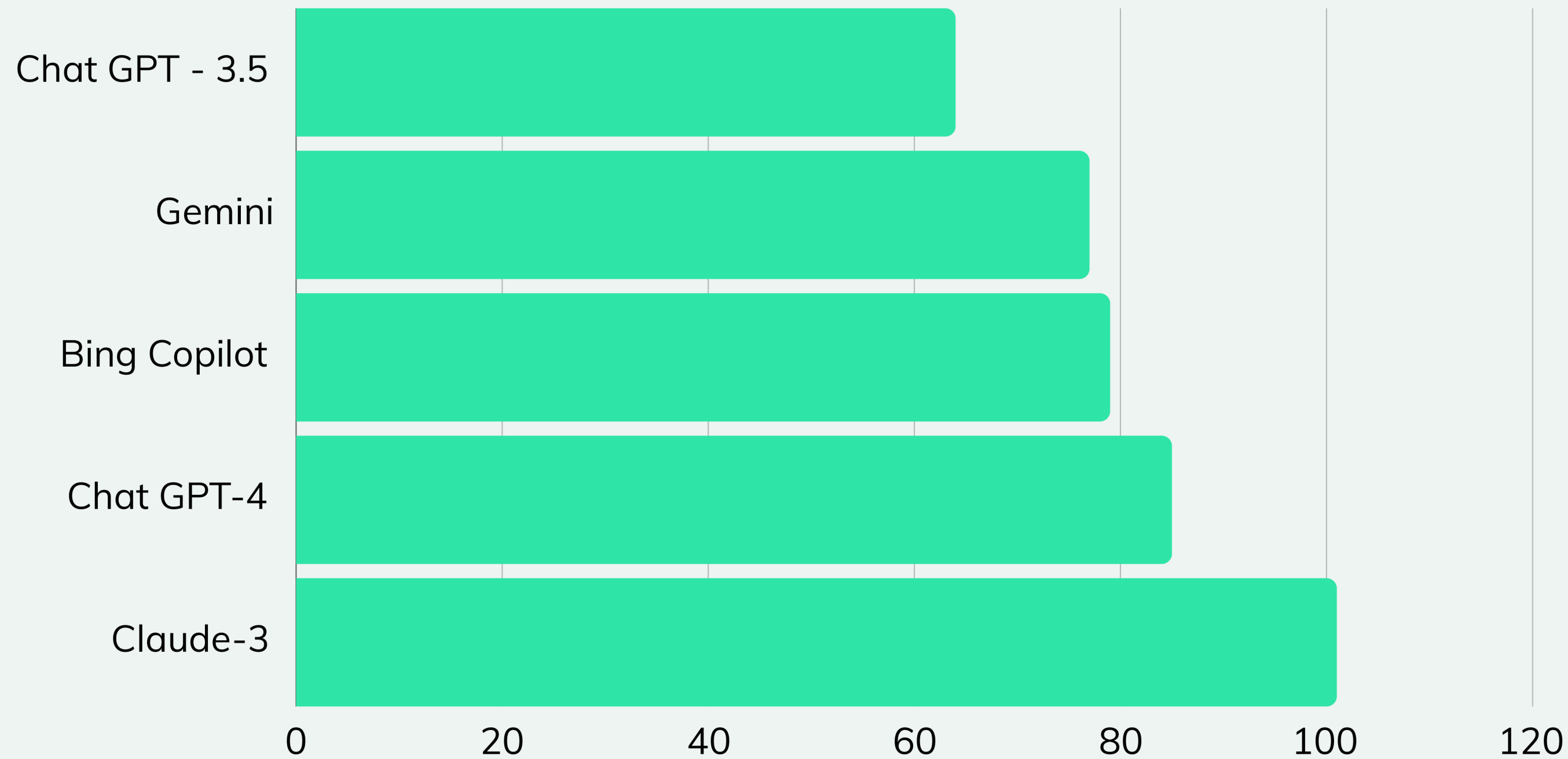
# INTRODUCTION



**What do you think these figures represent?**



# INTRODUCTION



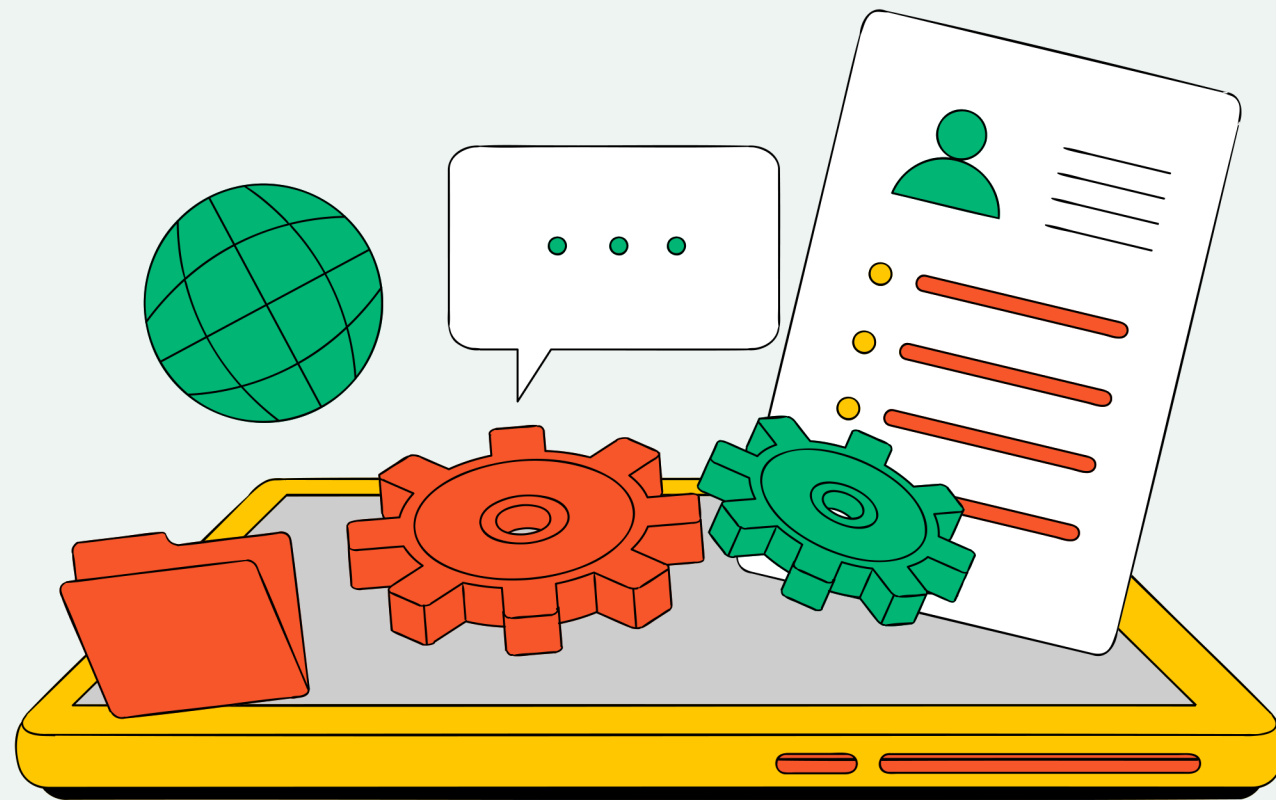
<https://www.maximumtruth.org/p/ais-ranked-by-iq-ai-passes-100-iq>

**IQ Scores!**



# INTRODUCTION

## Disruptive effects on education

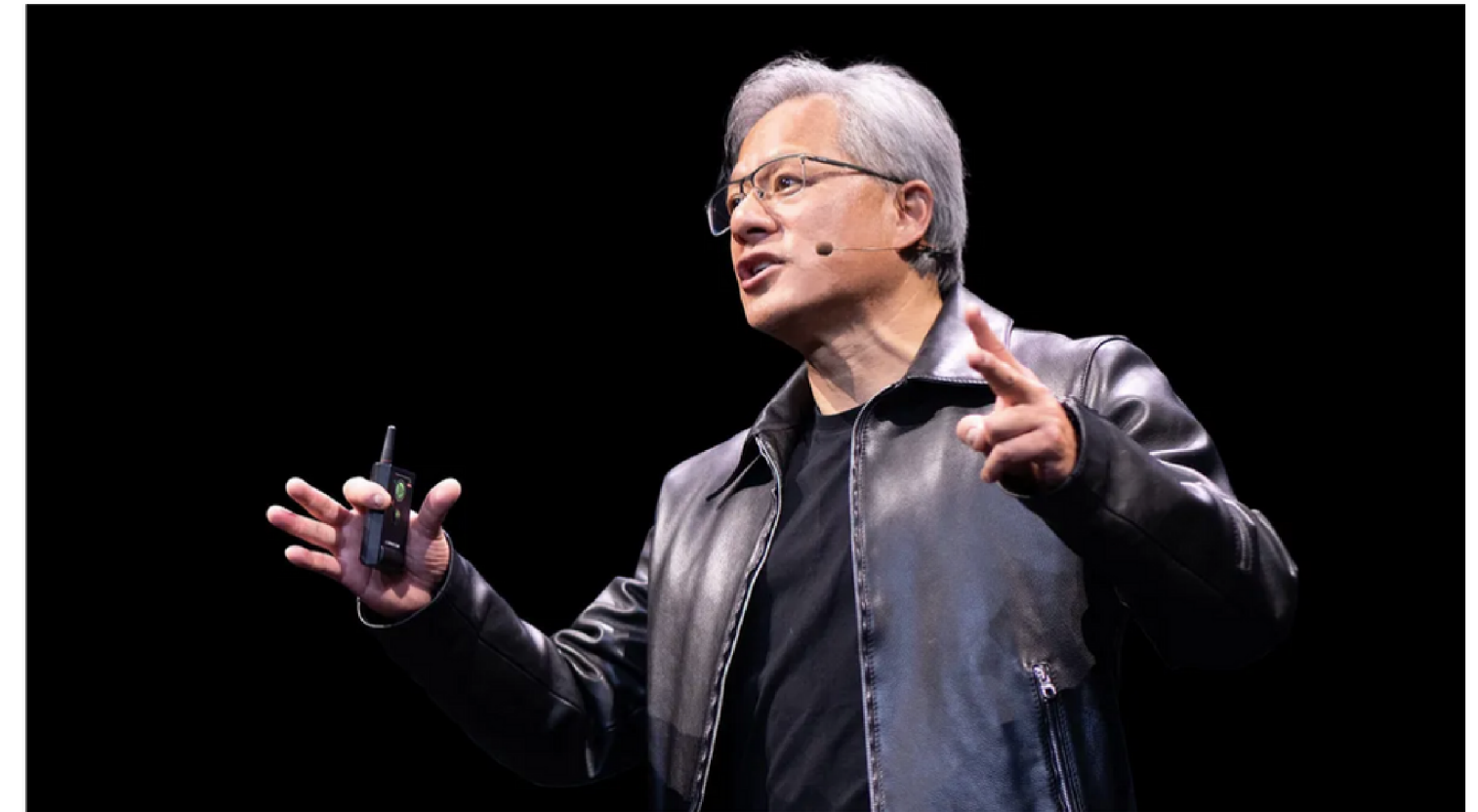


## Jensen Huang says kids shouldn't learn to code — they should leave it up to AI

News By Mark Tyson published February 25, 2024

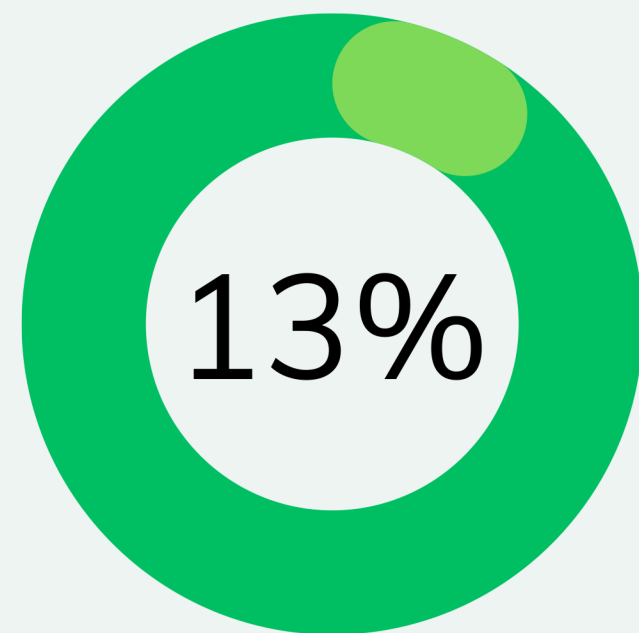
But this isn't the first time a tech exec has predicted the death of coding.

[f](#) [X](#) [v](#) [p](#) [F](#) [e](#) [Comments \(121\)](#)

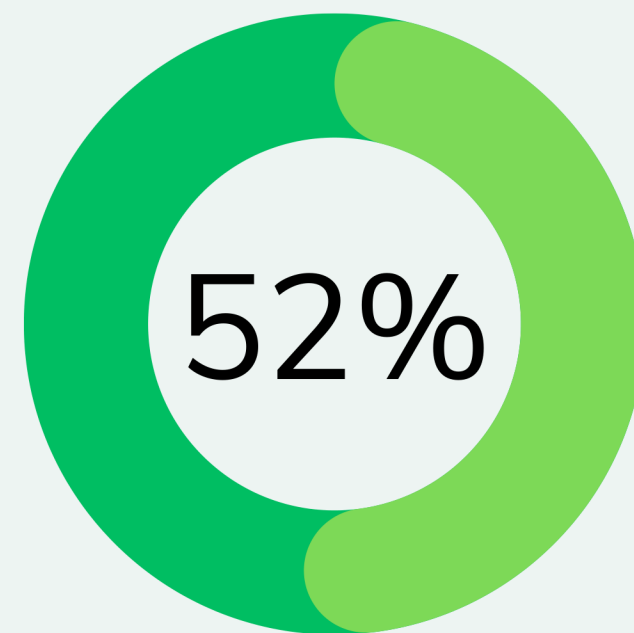


# SO HOW DOES THIS AFFECT US IN ELT?

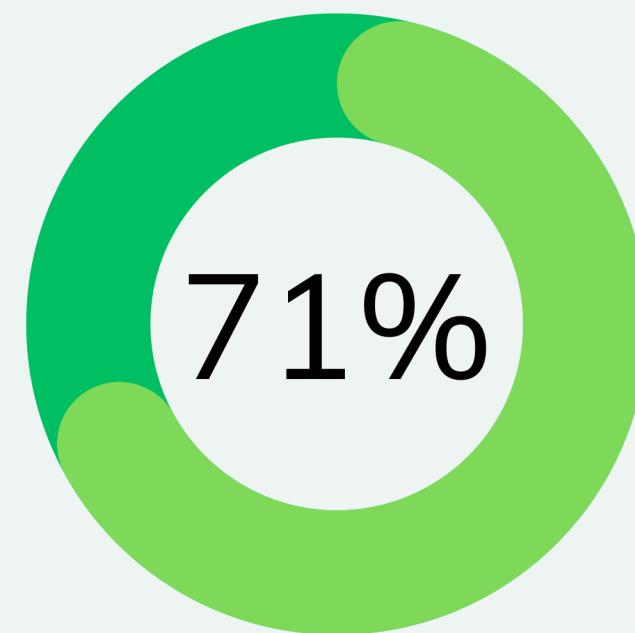
Don't worry we're not going to be out of work  
any time soon!



Teachers

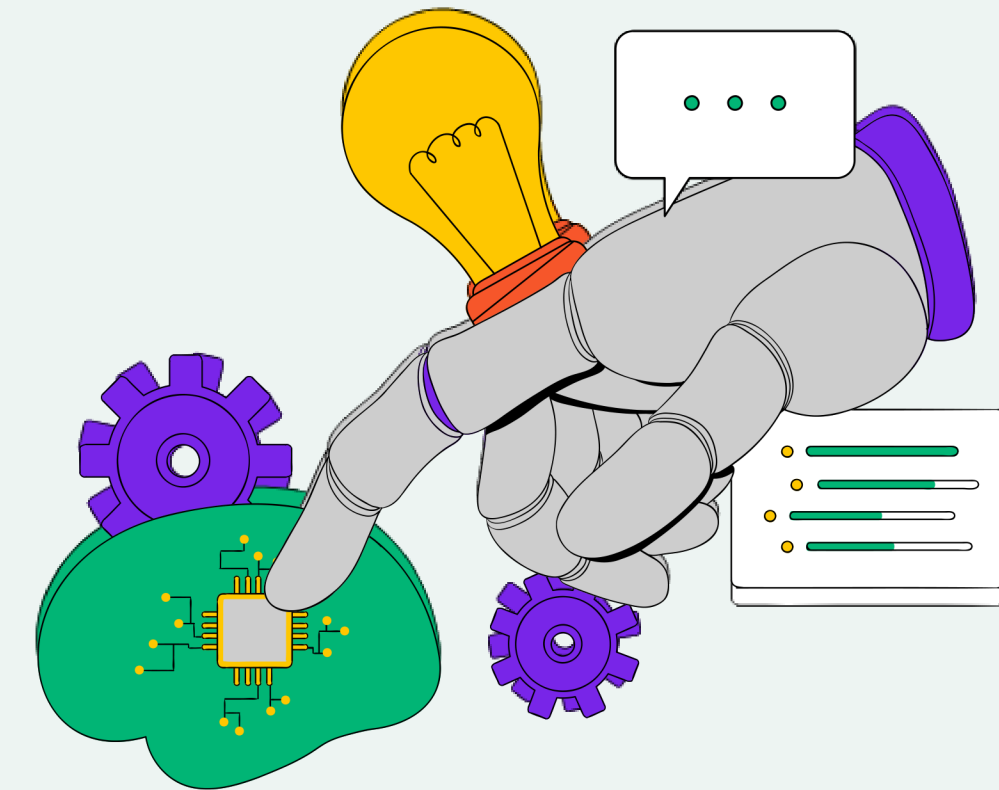


Computer  
Programmers



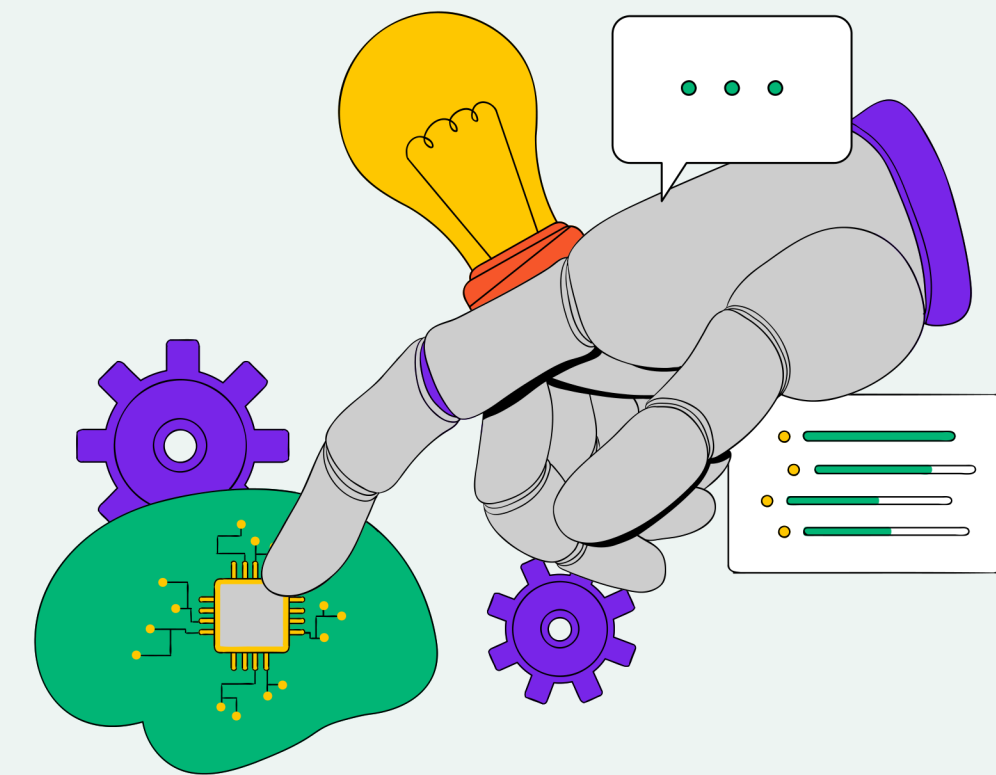
Accountants

<https://willrobotstakemyjob.com/>



# SO HOW DOES THIS AFFECT US IN ELT?

But the way we will work will change...with  
virtual language assistants (VLAs)



# LET'S GET TECHNICAL

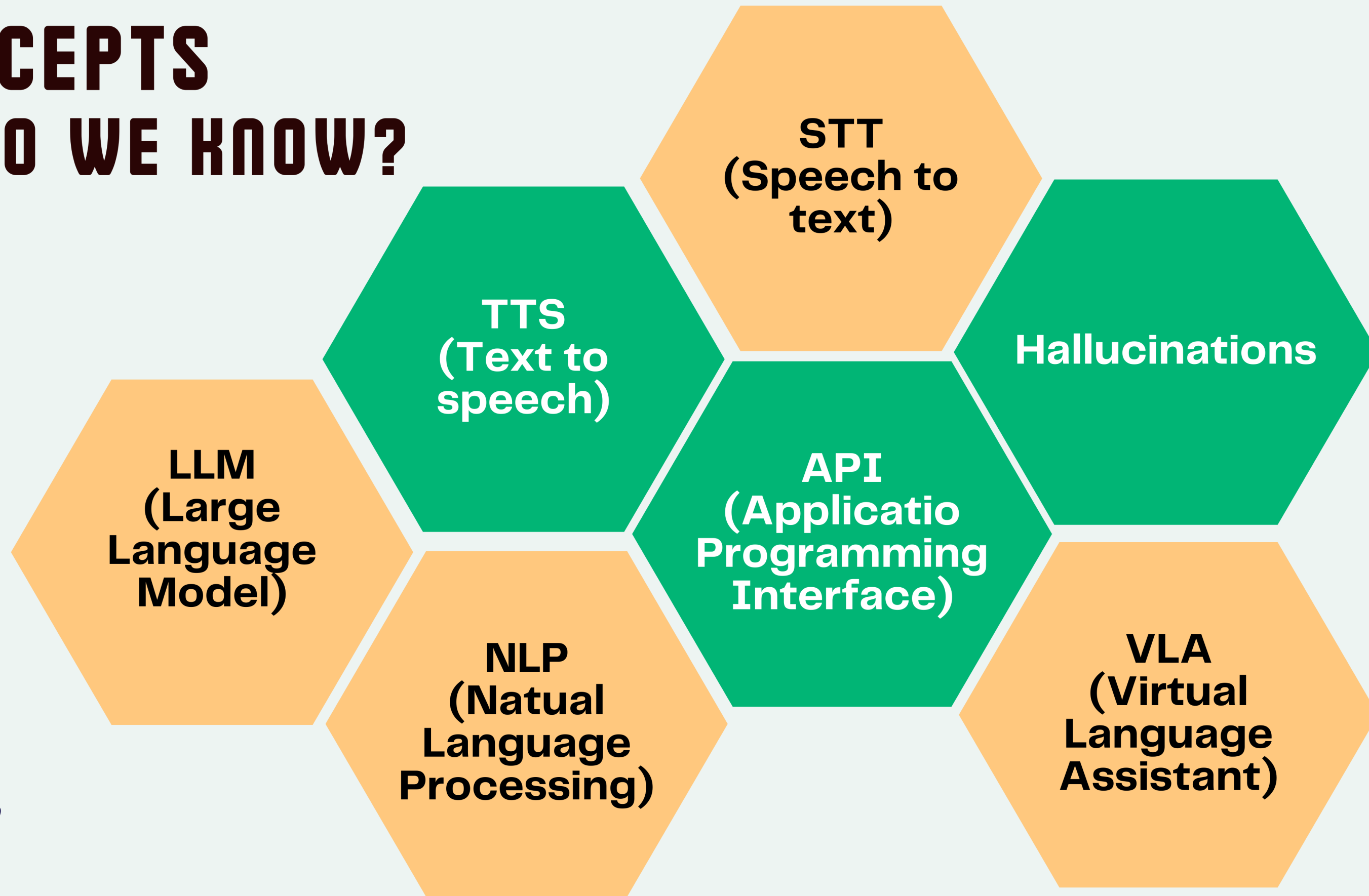
Before we look at what VLAs can do for us it's important to understand what they are and how they operate



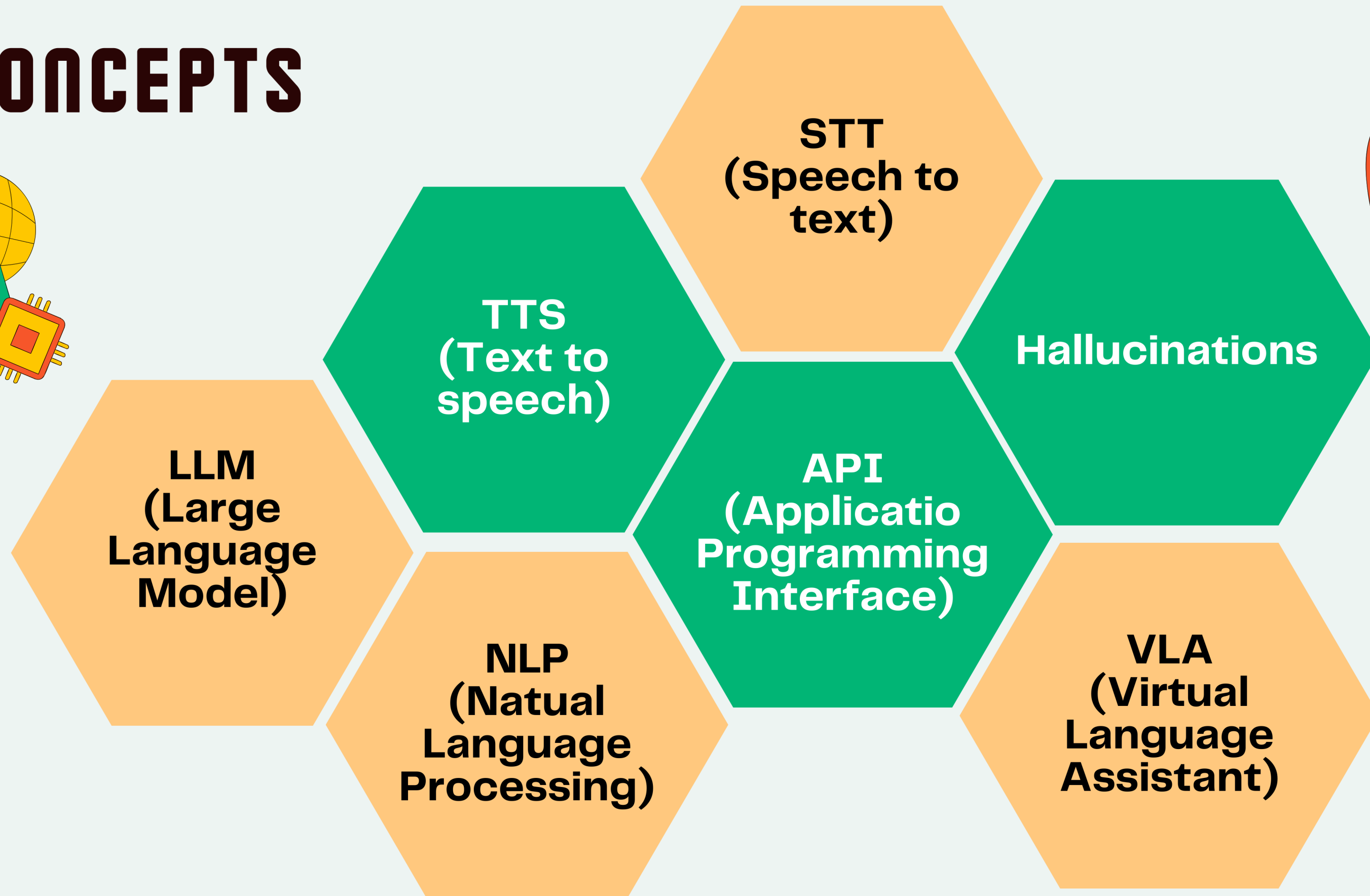


# KEY CONCEPTS

## - WHAT DO WE KNOW?



# KEY CONCEPTS



# WHAT IS AN LLM?

What is second language acquisition?



## WHAT IS AN LLM?

What is second language acquisition?



- |   |      |
|---|------|
| 1. Second language acquisition is <u>complex</u>      | 5.6% |
| 2. Second language acquisition is <u>beneficial</u>   | 4.2% |
| 3. Second language acquisition is <u>multifaceted</u> | 3.7% |
| 4. Second language acquisition is <u>evolving</u>     | 2.4% |



## WHAT IS AN LLM?

1. Second language acquisition is complex 5.6%

1. Second language acquisition is complex, involving 7.1%

2. Second language acquisition is complex for 5.8%

3. Second language acquisition is complex with 4.6%

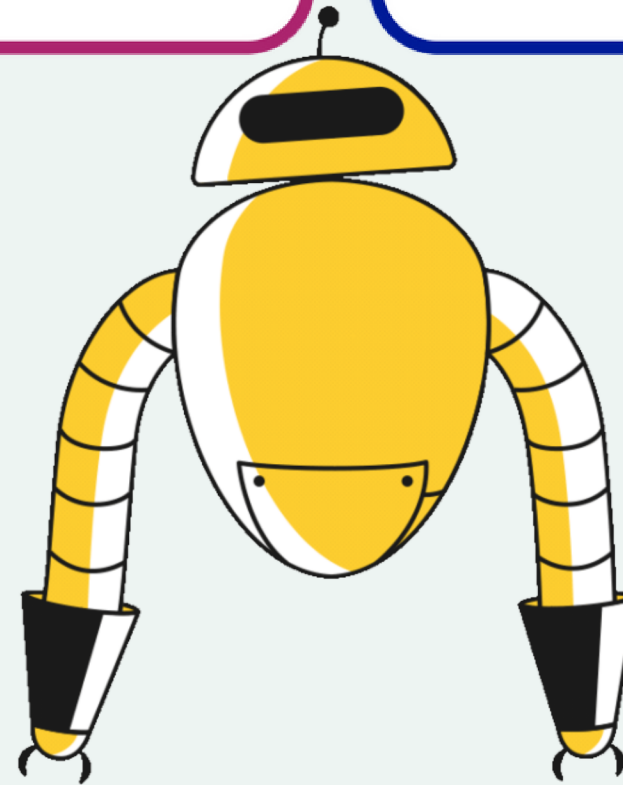
4. Second language acquisition is complex due 3.6%

1. Second language acquisition is complex, involving a 12.3%

2. Second language acquisition is complex involving cognitive 6.4%

3. Second language acquisition is complex involving differences 4.4%

4. Second language acquisition is complex involving several 2.7%



## NLP

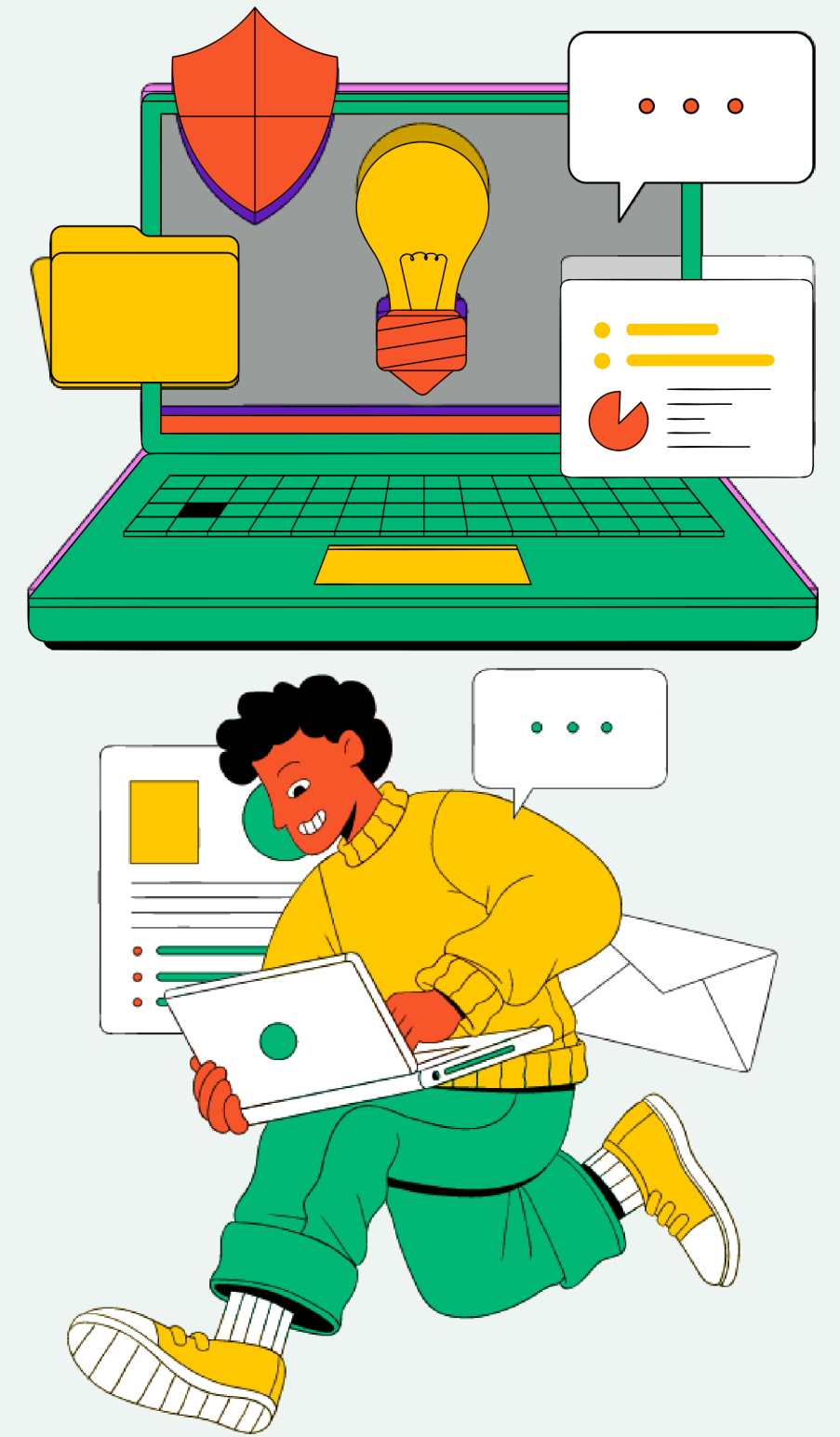
Natural language processing is a field of computer science that focuses on how people and computers can communicate with each other



## TTS & STT?

STT – Converts speech to text

TTS – Converts text to audio

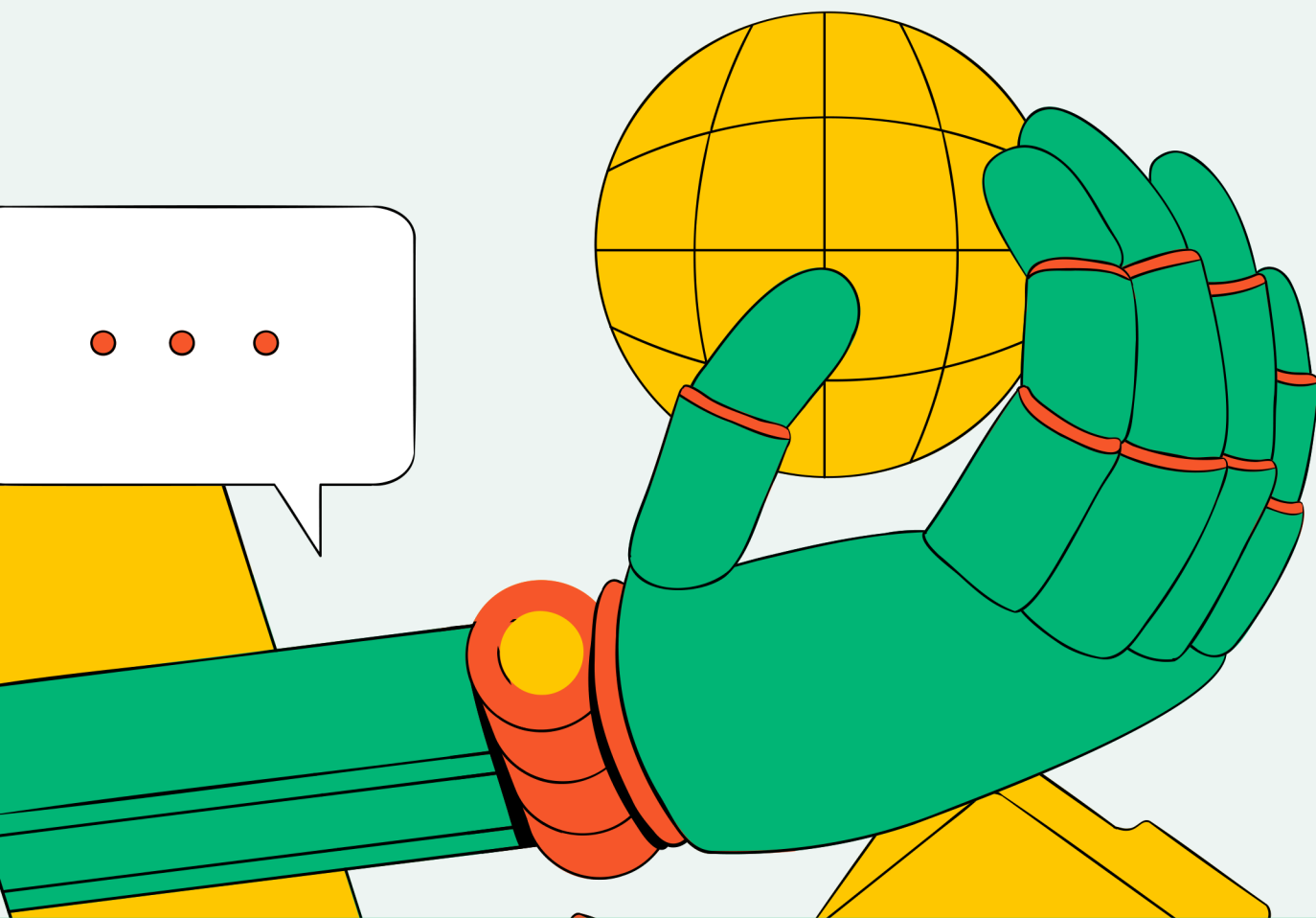


# WHAT IS AN API?

APIs are the lingua francas of the software world

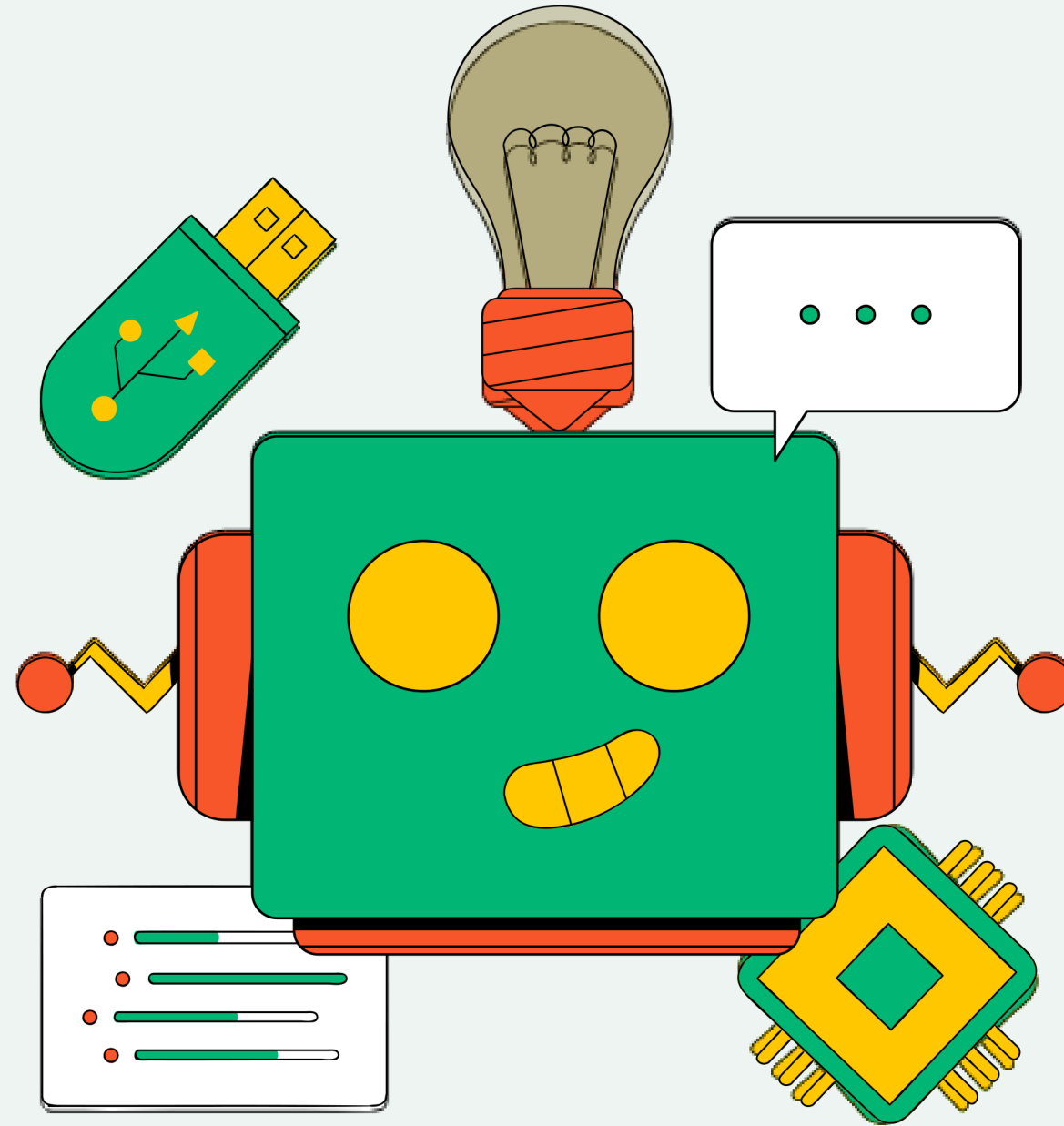
APIs simplify interactions between different software applications

Enables the exchange of information effectively and work together harmoniously





VLA



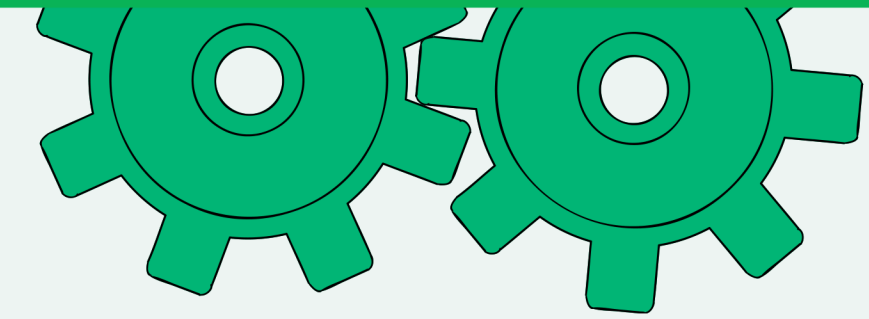
# HALLUCINATIONS



These are when LLMs create information that seem real but is not based on actual data or facts.

It originates from LLMs prioritising connecting words that **probably** go together regardless of the fact if they **should** go together.



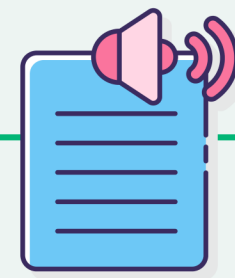


## HOW EVERYTHING WORKS



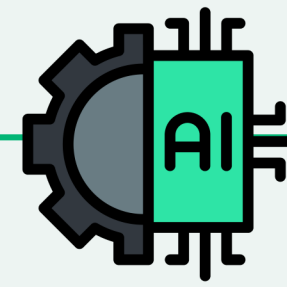
### USER

The user interacts with the VLA



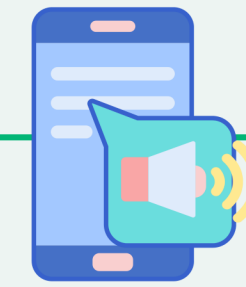
### STT

Speech is converted to text



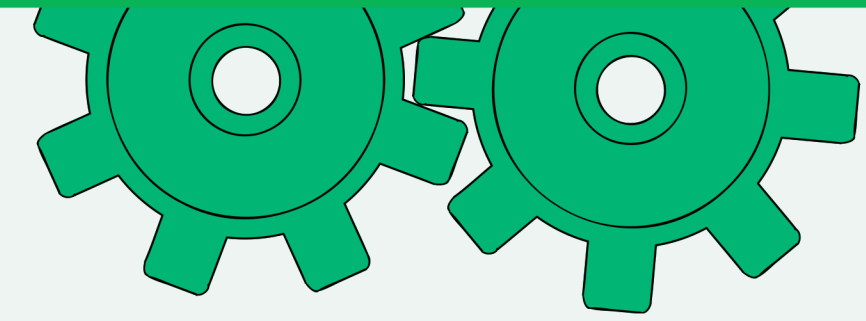
### LLM

LLM receives the text and processes it based on an internal prompt set by the person / group who made the VLA



### TTS

Response is converted back to audio and is played back to the user

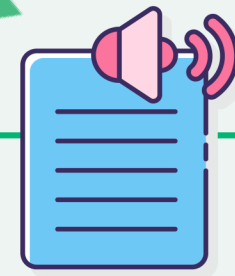


## HOW EVERYTHING WORKS



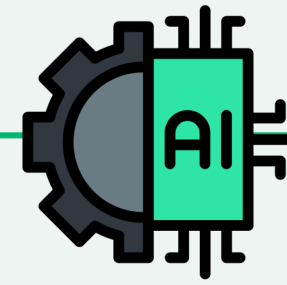
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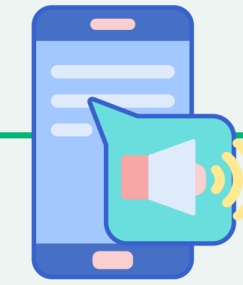
### STT

Speech is converted to text



### LLM

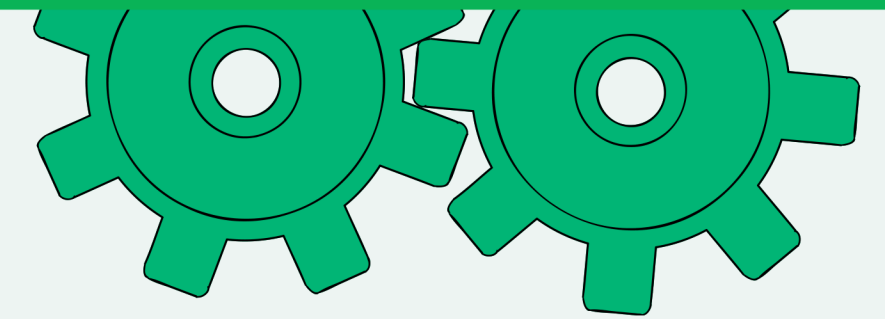
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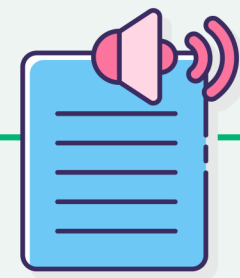
### TTS

By using natural language processing, the chatbot understood and responded to customer queries reducing response times.

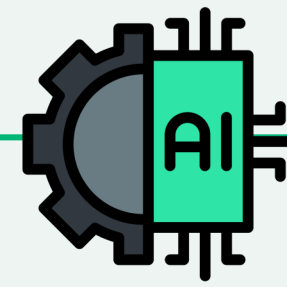
# HOW EVERYTHING WORKS



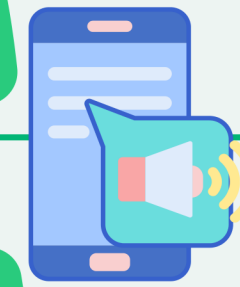
**USER**



**STT**



**LLM**

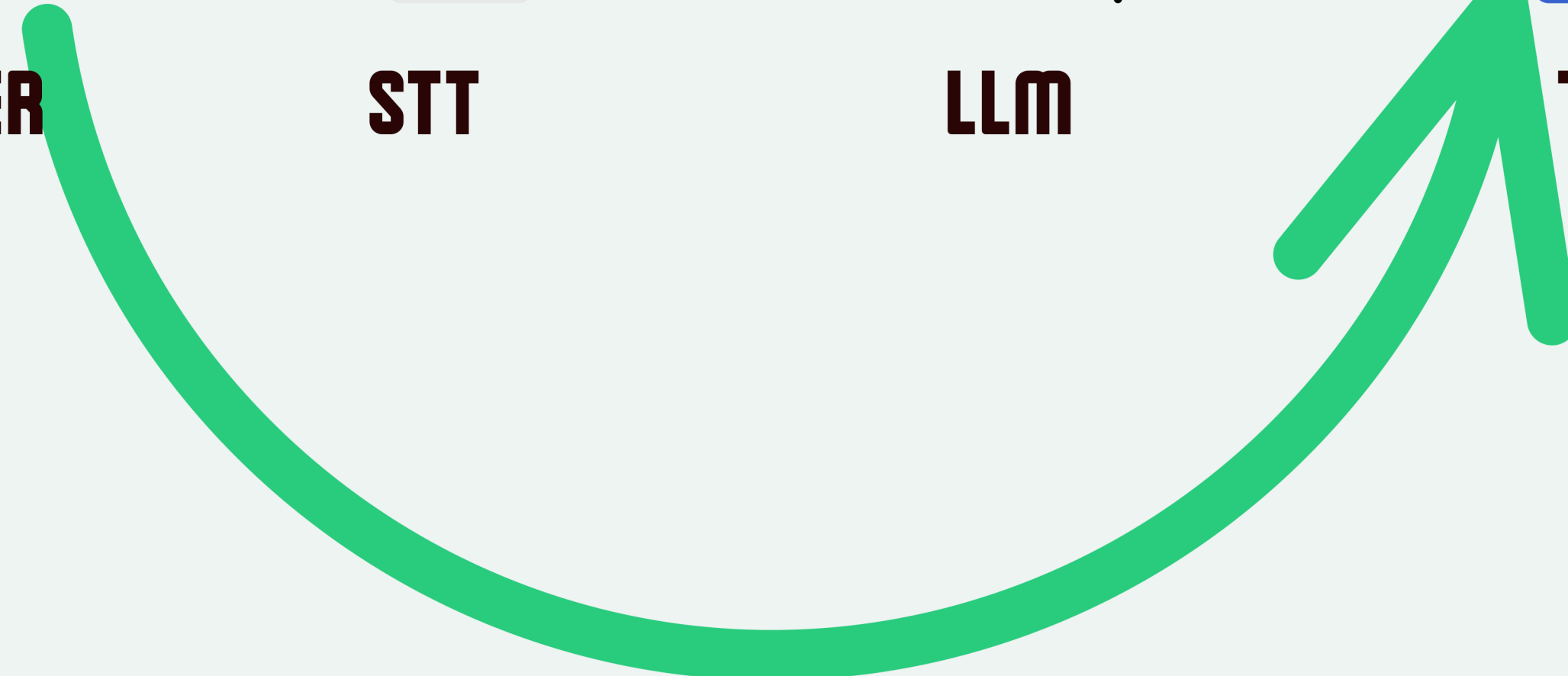


**TTS**



**VLA**

We now have a loop where the user is interacting with the VLA creating an immersive learning experience.



# USES IN LANGUAGE LEARNING?



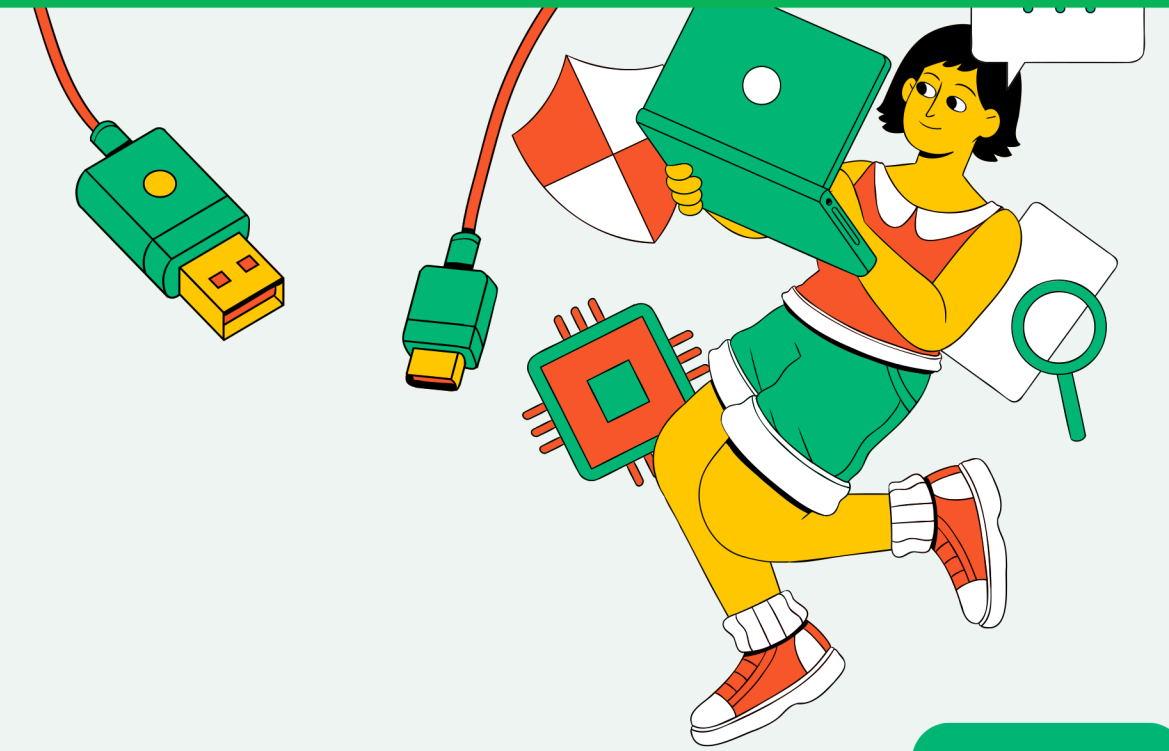
**Pronunciation practice**  
(repeating words/phrases, getting feedback on pronunciation)

**Conversation practice**  
(role-playing dialogues, asking/answering questions)

**Vocabulary building**  
(defining words, using words in context)

**Grammar exercises**  
(identifying errors, correcting sentences)

## PRONUNCIATION PRACTICE



01

### STUDENT PROMPT (SST)

I don't feel comfortable /'kʌmfətərbəl/  
talking to an ai in the classroom.

02

### TEXT RESPONSE FROM LLM

I understand that practicing English pronunciation can feel intimidating, especially in a classroom setting. However, it's completely normal to feel that way, and I'm here to support you in your learning journey. Remember, making mistakes is a natural part of learning any new language, and it's through practice that we improve.

Now, let's focus on your pronunciation of "comfortable." The correct pronunciation is comfortable with the stress on the first syllable and the following syllables blending smoothly together. Let's try together!

03

### AUDIO (TTS)



## PRONUNCIATION PRACTICE



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### AUDIO (TTS)





## CONVERSATION PRACTICE

In this example the LLM has been given the character of an expert in a specific field and that they are interviewing a candidate for a position in a specific field.

01

### STUDENT PROMPT

Actually, I do not have any experience in teaching very young learners but I think it will be easy. How hard can it be?

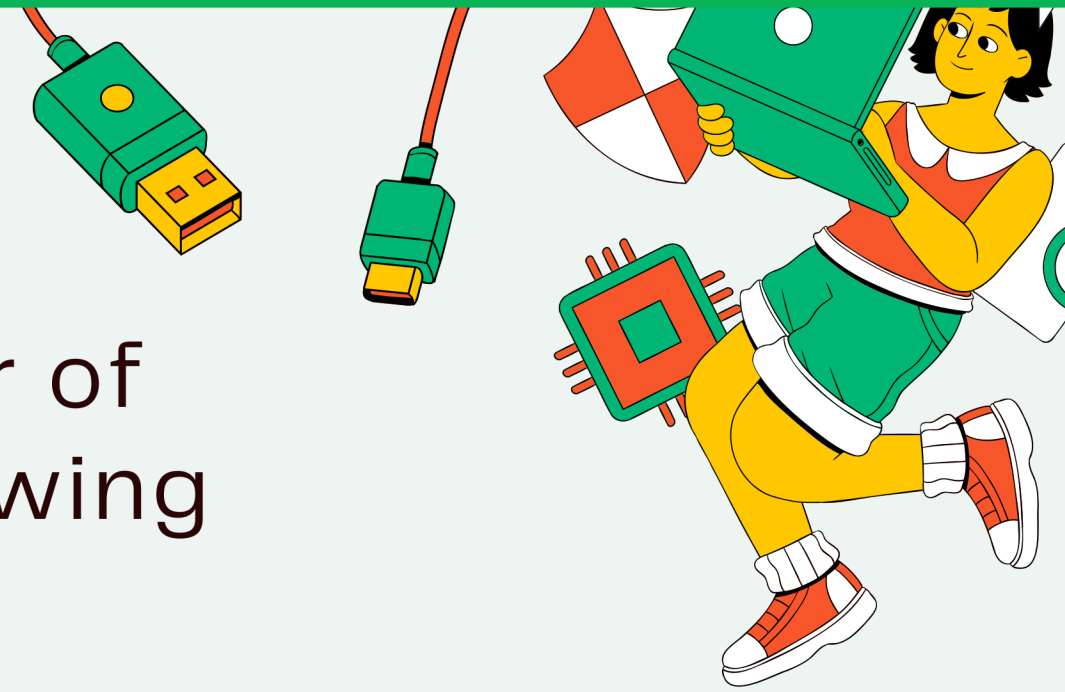
02

### TEXT RESPONSE FROM LLM

Adapting to teach very young learners can indeed present unique challenges. Given that you haven't taught young learners before, can you share your thoughts on how you plan to engage and maintain the attention of young children in the classroom?

03

### AUDIO



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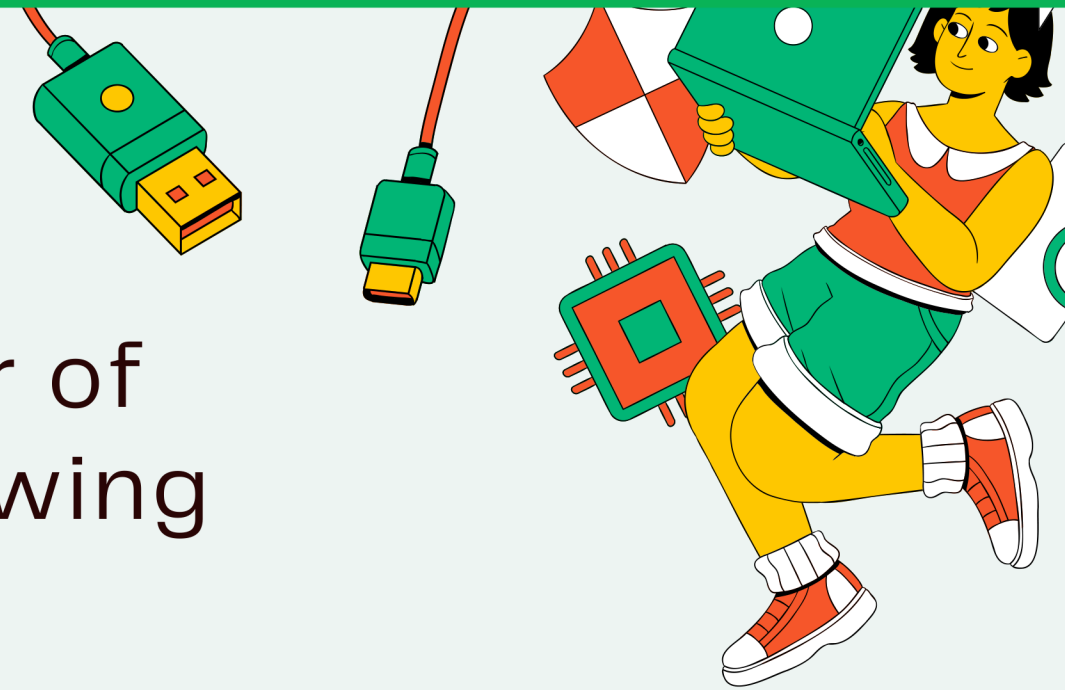
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### AUDIO



## GRAMMAR EXERCISES

In this example the LLM has been given the character of an friendly language assistant for young children. It will use language and responses that would be suitable for a young child of 5 years old.

01

STUDENT PROMPT

What he **do** yesterday?

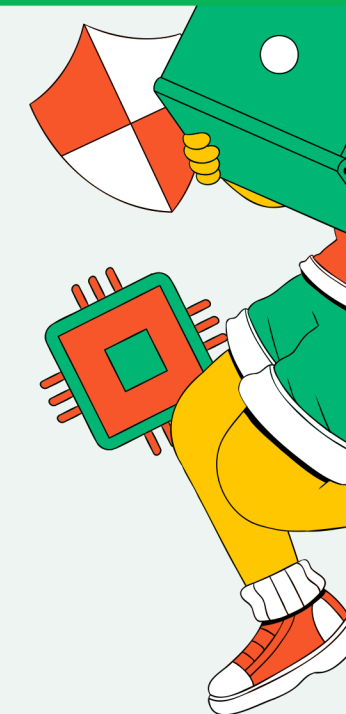
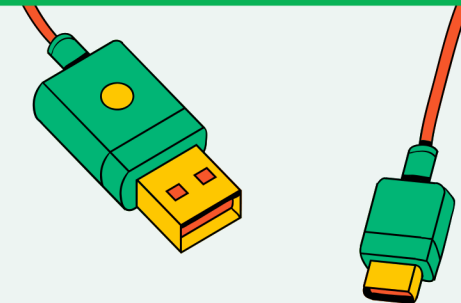
02

TEXT RESPONSE FROM LLM

Oh, it seems like there might be a little mistake **in** your question. "**Yesterday**" refers to the day before today, so it has already passed. But don't worry, we can talk about what he can **do** today or tomorrow instead. What would you like to know?

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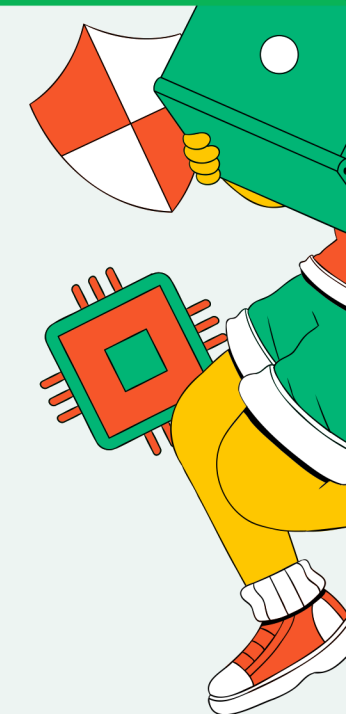
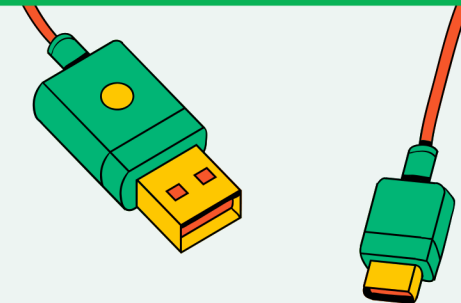
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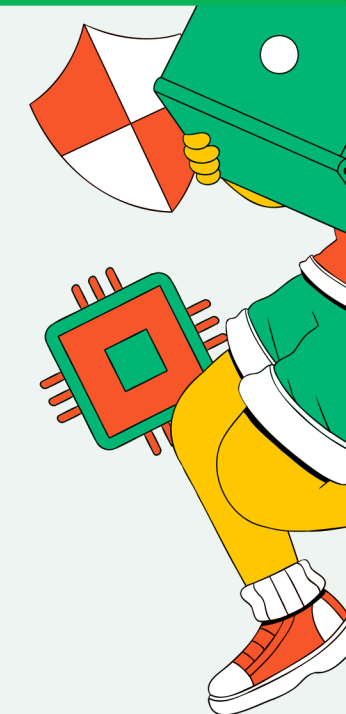
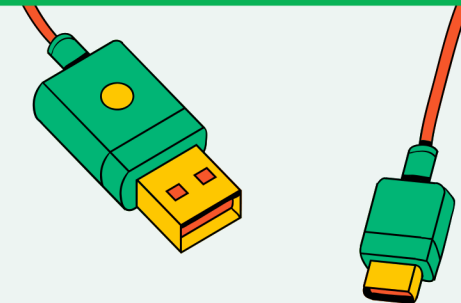
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03

AUDIO



# USES IN THE CLASSROOM



**EARLY FINISHERS**



**PARTNER FOR  
MONITORING**



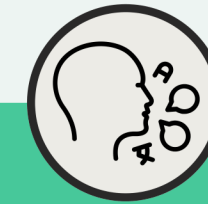
**VIRTUAL FLUENT  
SPEAKER TO CONVERSE  
WITH**



**CHARACTER FOR  
YOUNGER LEARNERS**



**MORE AUTHENTIC ROLE  
PLAYS**



**PRONUNCIATION**



## BARRIERS & RISKS



### HALLUCINATIONS

- Length of interaction
- LLM
- Topic and input of the user

### DATA PRIVACY

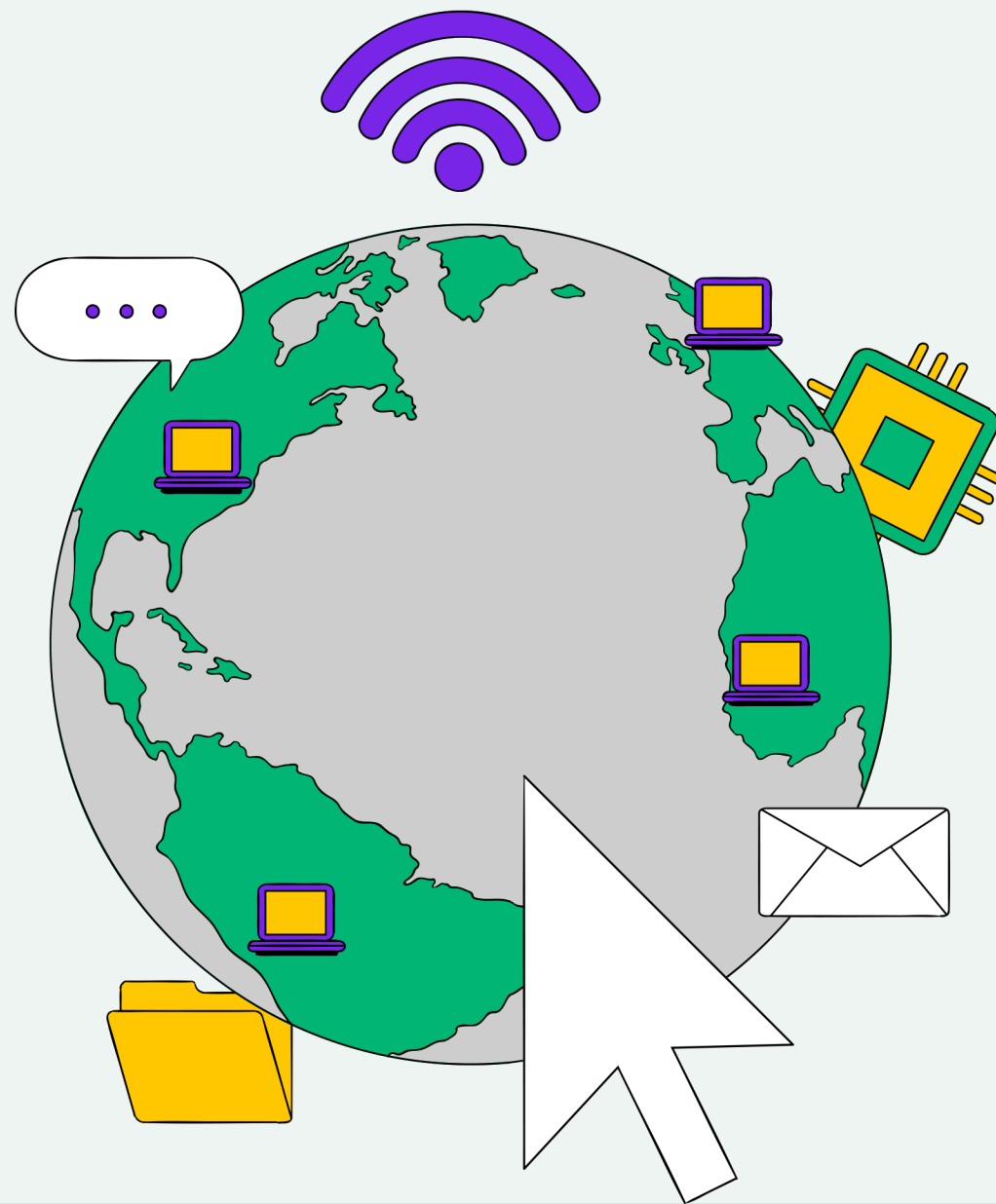
- Restrictions / protections in EU
- Using it with minors
- Ethical use of data

### COSTS

- Depending on LLM
- Multiple systems involved
- Scaling
- Online infrastructure & speeds



## PREPARING FOR THE FUTURE



We are at a crossroads.

Highly personalised and immersive learning experiences have opened up.

VLAs have the potential to fundamentally reshape the way we approach language education

Not meant to replace human instructors but rather to complement and enhance their efforts





## What I Offer



CIARAN LYNCH



### UI/UX Design

Unlock the full potential of visual appeal and easy navigation with UI/UX designs that engages your learners. Let's craft an immersive digital environment that draws your audience and enhances their educational journey.



### Website Design

Elevate your online presence with cutting-edge website design. Whether you're an educator, institution, or EdTech entrepreneur, together, we'll create a dynamic platform that showcases your unique offerings and connects with your target audience.



### LMS Implementation

Seamlessly integrate the power of a Learning Management System (LMS) into your educational ecosystem. From setup to customisation, I'll guide you through the process, empowering you to efficiently manage and deliver transformative eLearning experiences.



### Instructional Design

Empower your learning materials with strong instructional design. By aligning content with learning objectives and incorporating interactive elements, I'll craft engaging and effective educational resources that keep learners interested and completing courses on your platform.



### SEO Optimisation

Unleash the potential of organic growth with SEO optimisation. I'll equip your digital assets with strategies to climb search engine rankings, ensuring that your educational offerings reach a broader audience and leave a lasting impact.



### Digital Marketing

Amplify your reach and impact with the force of digital marketing. Together, we'll tailor strategies to target your audience, harness the power of social media, and curate compelling content that elevates your brand in the EdTech realm.

# Let's connect



[ciaran@ciaranlynch.com](mailto:ciaran@ciaranlynch.com)



[www.ciaranlynch.com](http://www.ciaranlynch.com)



**CIARAN LYNCH**

