

# Pros and Cons of AI and Technology in Interpreting: A Research-Informed Perspective

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# INTRODUCTION



# RESEARCH IN TECHNOLOGY FOR INTERPRETING IN CTS



## Video-Mediated & Virtual Interpreting:

- AVIDICUS 1-3** (Assessing Video-Mediated Interpreting in the Criminal Justice System)
- EU-WEBPSI** (EU WEB portal for Video-Mediated Interpreting)
- SHIFT** (Shaping Interpreters' Future Today)
- IVY** (Interpreting in Virtual Reality)
- EVIVA** (Educating Interpreters and their Clients through Virtual Activities)

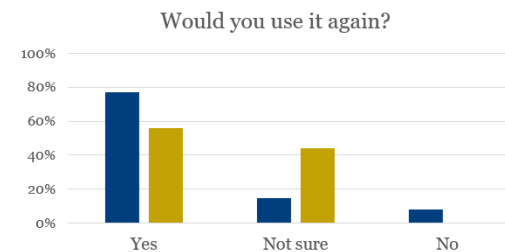
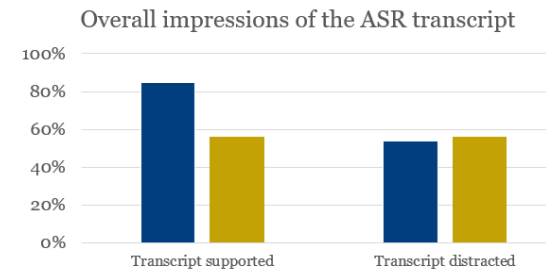
## Public Service Interpreting/Translation & Technology:

- MHealth4All** (Mental Health for All)
- Interpret-X** (Improving uptake of interpreting in primary care in England)
- MUPLA** (Media use of pharmaceutical promotional literature)

## Ahmed Saeed, PhD thesis, 2023

User experience with RSI, incl. ASR integration (full transcript)

29 professional conference interpreters (**high: 13**, **low: 16** experience)



## Eloy Rodriguez Gonzalez, PhD thesis, 2024

Interpreting quality in RSI with and without ASR (full transcript), in lexically dense (LD) and fast (F) speeches:

16 professional conference interpreters, English -> French/Spanish

with ASR:	LD	F
Omissions – reduced by	30%	9%
Substitutions – reduced by	48%	41%
Gramm. errors – reduced by	31%	73%
Stylistic errors – <b>increased</b> by	69%	14%

## Francesca Frittella, PhD thesis, 2024

Training in AI-assisted interpreting  
Focus on CAI tools

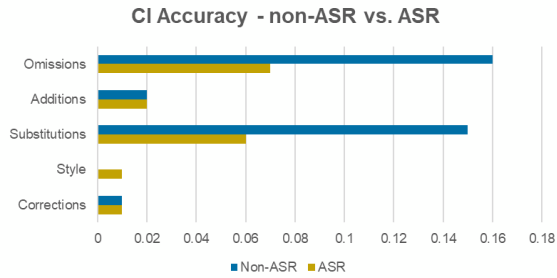
# CURRENT RESEARCH



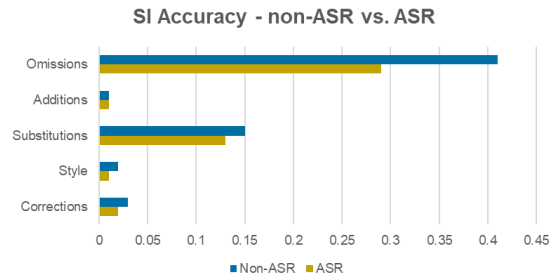
## Wangyi Tang, PhD thesis, in progress

Interpreting quality in remote legal interpreting with and without ASR (full transcript), in consecutive and simultaneous mode

4 legal interpreters, EN -> CH, EN -> RO, (pilot study)



is the statement of John Withers, who is currently retired.  
I am the chairman of the London North area of the United Kingdom and Ireland.  
Ballroom dancing association.  
UKIP to anyone who wishes to engage in ballroom dancing must belong to a recognised association in order to qualify for grant funding for [the national Lottery](#)



## Diana Singureanu's fellowship on the use of interpreting technologies in legal settings

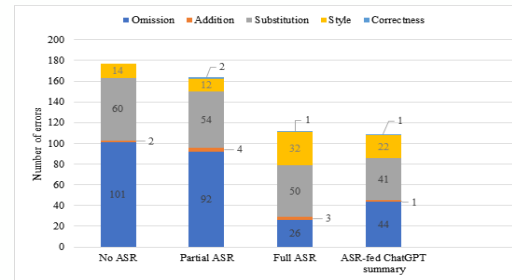
A comparative study examining perceptions and quality of MI, HI, and CAI in legal settings, aiming to improve MI literacy and reduce risks in the justice system.

## Shiyi Tan, PhD thesis, in progress

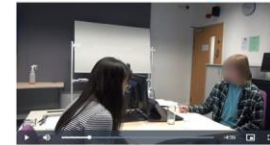
Interpreting quality and cognitive effort in remote healthcare interpreting (consecutive/dialogue); 4 conditions:

- no ASR
- partial ASR (terms and translation equivalents)
- full ASR transcript (with translation equivalents)
- AI summary (bullet-points; with equivalents)

4 interpreting graduates EN <-> CH (pilot study)



### full ASR transcript (with translation equivalents)



This is something we need to address immediately to prevent further complications.

We also notice small vessel disease changes (小血管病变) in your brain. It means these tiny vessels is not getting enough blood flow over time. However, large vessels look normal with no significant thickening (增厚) or atherosclerosis, which is good news.

好的，嗯，我也不清楚到底是什么意思？这个这个会严重吗？

### AI-generated summary (bullet-points; with equivalents)



- Managing complex health issues can feel like a full-time job.
- Good to hear you're feeling some improvement.
- Discuss renal function (肾功能): 肾功能 (肾功能) has improved.
- Latest eGFR (estimated glomerular filtration rate) (估算肾小球滤过率) is improved (改善了).
- Currently at 30 millilitres per minute per 1.73 square metres (目前每分钟每1.73平方米30毫升).
- Serum creatinine (血清肌酐) decreased to 1.6 (1.6).
- Urea levels (尿素水平) improved to 50 (50), down from 70 (70) last year.

# EmpASR PROJECT: PEOPLE



Constantin Orasan  
Lead



Sabine Braun  
Co-lead



Andreea Deleanu  
Research Assistant



Shiyi Tan  
Research Assistant



Diana Singureanu  
Research fellow in Interpreting Studies



# THE EmPASR PROJECT



- Follow up of the project *Harnessing court data using NLP and spoken language technology* which had the aim of facilitating access to justice
- It developed a tool that facilitates linking court judgements with court hearings
- Transcription of court hearings needs to be high quality
- We developed a method to improve the quality of existing speech recognition engines

The screenshot displays the JUST:Access web application. At the top, there is a purple navigation bar with the text 'JUST:Access' on the left and 'Home', 'Case Library', 'Search', and 'Login' on the right. Below this is a secondary navigation bar with four tabs: 'Judgment' (selected), 'Proceedings', 'Insight Analysis', and 'Table of authorities'. The main content area is titled 'Radmacher (formerly Granatino) (Respondent) v Granatino (Appellant)'. Under the 'Judgment' tab, there are three paragraphs of text. The first paragraph (61) discusses the distinction between ante-nuptial and post-nuptial agreements. The second paragraph (62) discusses the circumstances surrounding the conclusion of a contract. The third paragraph (63) provides a summary of the court's findings. To the right of the text is a video player for 'Day 1 Session 2' with a duration of 52:35-53:30. The video shows a judge in a black robe and white wig sitting at a desk, with other people in the background. Below the video, the timestamp '00:52:35' is shown, followed by a transcription of the judge's speech: 'There is this point to be made in relation to the great debate panel that in McLeod for the reasons given by my Lady, the pre nup was sharply distinguished from the post nup and in this case the Court of Appeal dismissed that distinction although one might have thought that it was a statement of the obvious.'

# BASE MODEL

Names of people

"Mrs Agbaje"



Legal jargon  
"my learned"

with my lonely junior Miss Eleanor Harris. I appear on behalf of Mrs Ebadi, the appellate um, and then your friend Mr Timothy Scott, Queen's counsel, and Mr Peter Mitchell appear on behalf of Mr and Party, the respondent to the appeals. If I may, I will have dropped the Family Law convention of calling the party's husband and wife. The principal issue arising on this appeal is, in what circumstances is it appropriate for the English court to make a further financial order when a foreign court has already divorced the spouses and made a financial order? At first blush, it may seem unusual that courts in two different countries can, at different times make financial orders are rising out of the same cause of action, namely, the party's divorced. The power in English court to make a further financial order derives from Part three of the Matrimonial and Family Proceedings Act 1984 and it was intended by its frame as the law commissioners to remit financial hardship arising from two distinct circumstances. I suppose I should make it absolutely plain that this is the work of my predecessor. Yes, the Law Commission. I had no hand in part three at all. Yes, we saw the authors that listed in the report. The two circumstances that the law commissioners were addressing were these firstly, when a foreign court had made no financial order at all and secondly, where the foreign Court had made a financial order. But that order was inadequate and this appeal is concerned only with the second category. It is a condition precedent to the exercise of powers under Part three that the wife has to show in the circumstances of her case that a serious injustice has arisen. The serious injustice that this wife relies upon is that after a marriage of 32 years which produced five Children of the founded and where the assets were around £700,000 the Nigerian court in June of 2005 awarded her a lump sum of £21,000 and a life interest in the house on Tin Can Island in Lagos. This very modest award produced a very significant disparity or discrepancy in the allocation of the assets between the parties

Legal Terms  
"its framers"

Grammar mistakes  
"parties divorced"

Vocabulary  
"children of the family"

# IMPROVED SPEECH RECOGNITION



- We can improve the accuracy of ASR using platform that do not require extensive technical knowledge
- Improved ASR could be beneficial to interpreters → *Empowering public service interpreters with the help of Automatic Speech recognition*
  - Train interpreters (and LSPs, and companies working with interpreters/benefitting from interpreting) on how they can benefit from improved ASR and the latest developments in AI
  - Tries to understand the needs of interpreters when it comes to ASR/AI (the survey and interviews), and how we can support them in the process (**not replace them!**)
- This is related to the AI revolution which causes opportunities and concerns to many professionals, including interpreters



# STRUCTURE OF THE PROJECT



**Pre-course questionnaire survey of interpreters (80+) and language service providers (30+)**

**6-hour course (23 interpreters and 6 language service providers)**

- Session 1** Introduction to AI and how interpreters can benefit from AI.
- Session 2** Computer-Assisted Interpreting (CAI) with a focus on ASR.
- Session 3** LLMs to support interpreters.
- Session 4** Customising ASR. Risks of using AI and ASR in interpreting.

**Interviews with interpreters (20) and language service providers (6)**

# FINDINGS FROM THE SURVEY (INTERPRETERS)



# SURVEY OF INTERPRETERS



**Aim:** elicit current and planned uses of AI by interpreters

**Responses:** 80+ received; **valid responses from 56 participants** after data cleaning



**67% women**

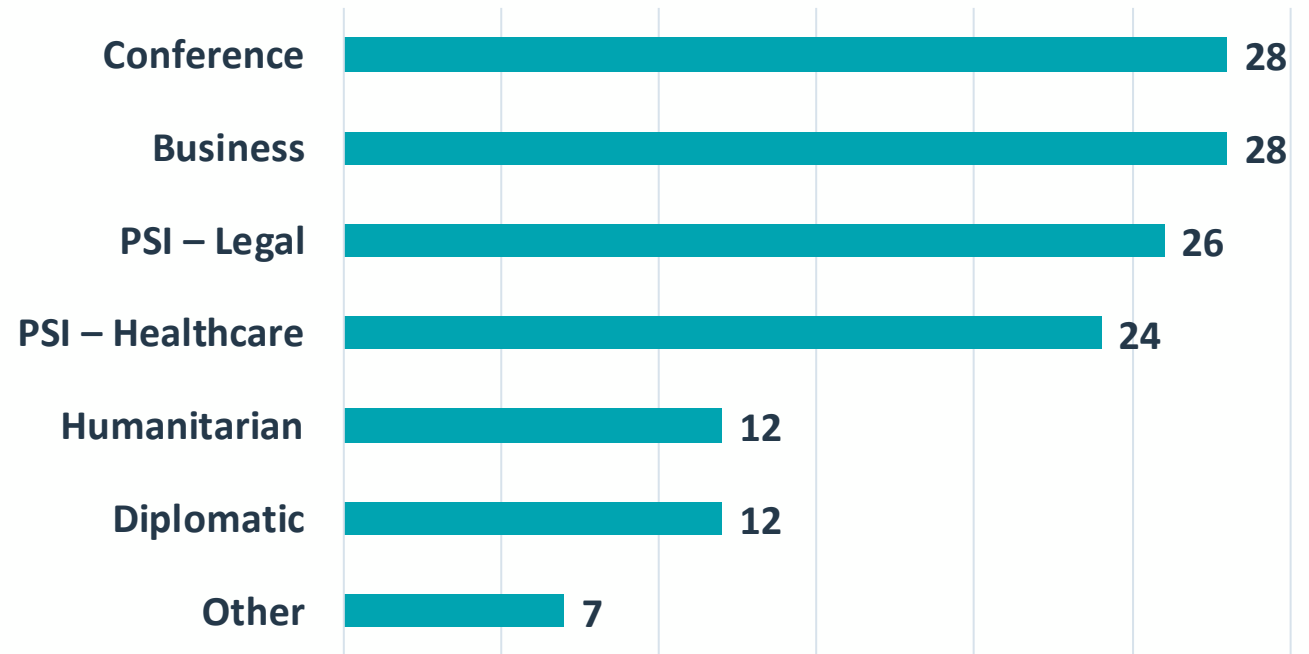
**61% between 35-54 years old**

**80% with 500+ hours of interpreting**

**Countries:**

UK (30), Italy (5), Belgium, France, Germany, Turkey, USA (2 each), Algeria, Argentina, China, Malaysia, Poland, Portugal, Spain (1 each)

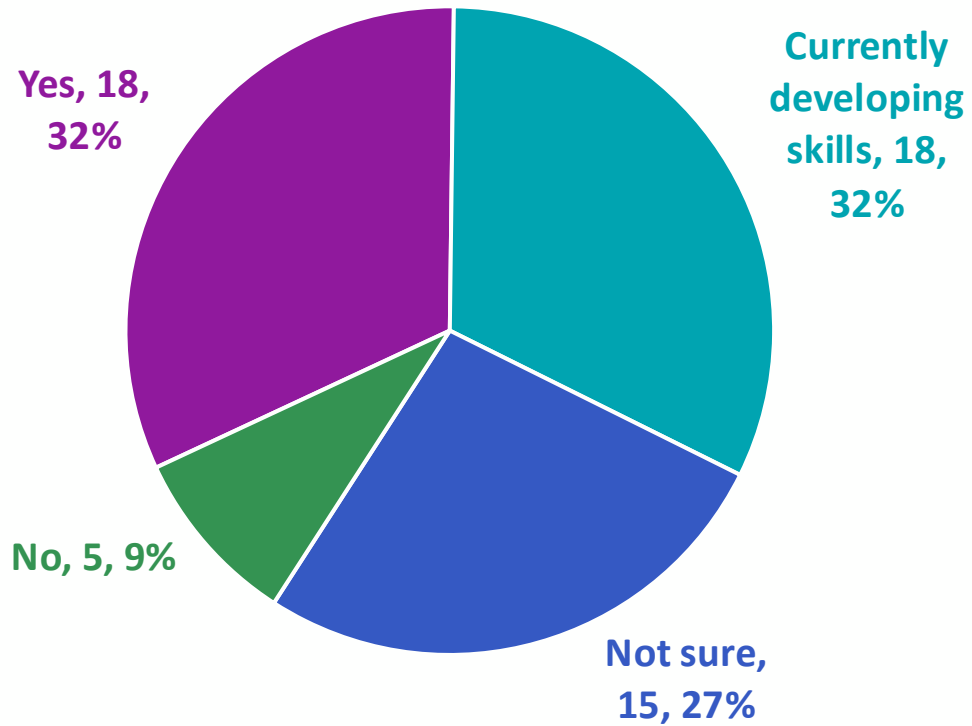
**Interpreting settings in which participants work**  
(multiple selections possible)



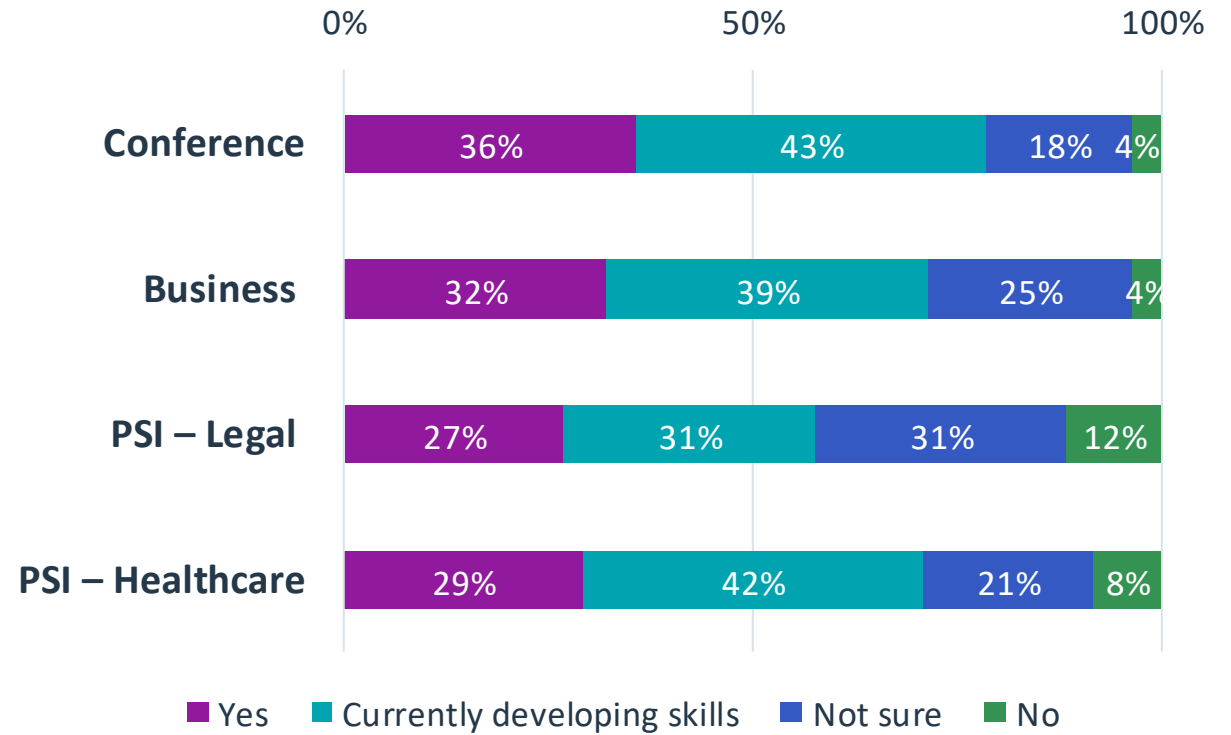
# SURVEY OF INTERPRETERS



**Do you feel equipped with the technical skills to integrate AI in your workflow?**



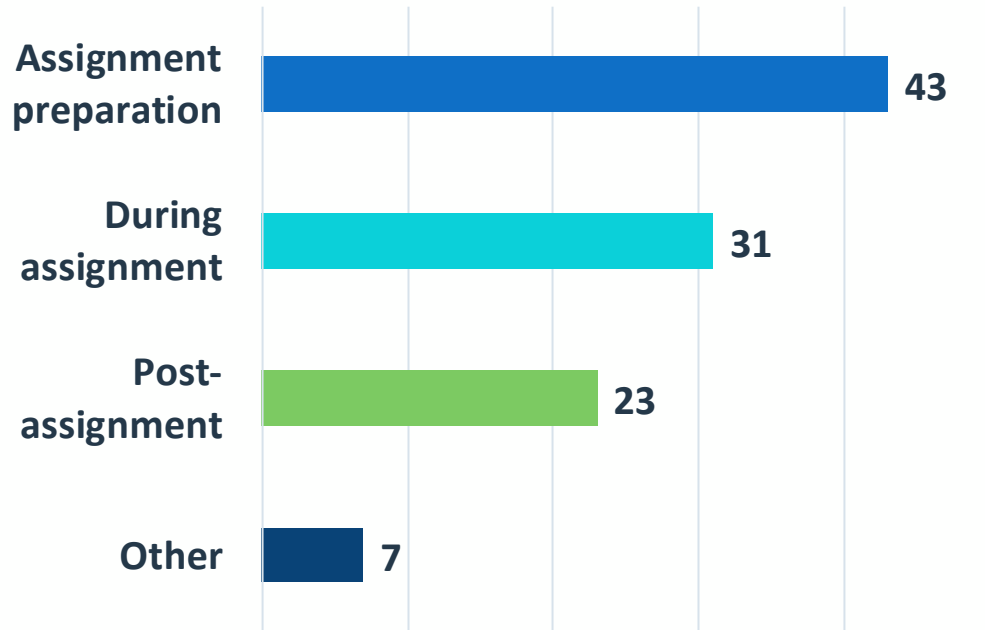
***By interpreting setting***



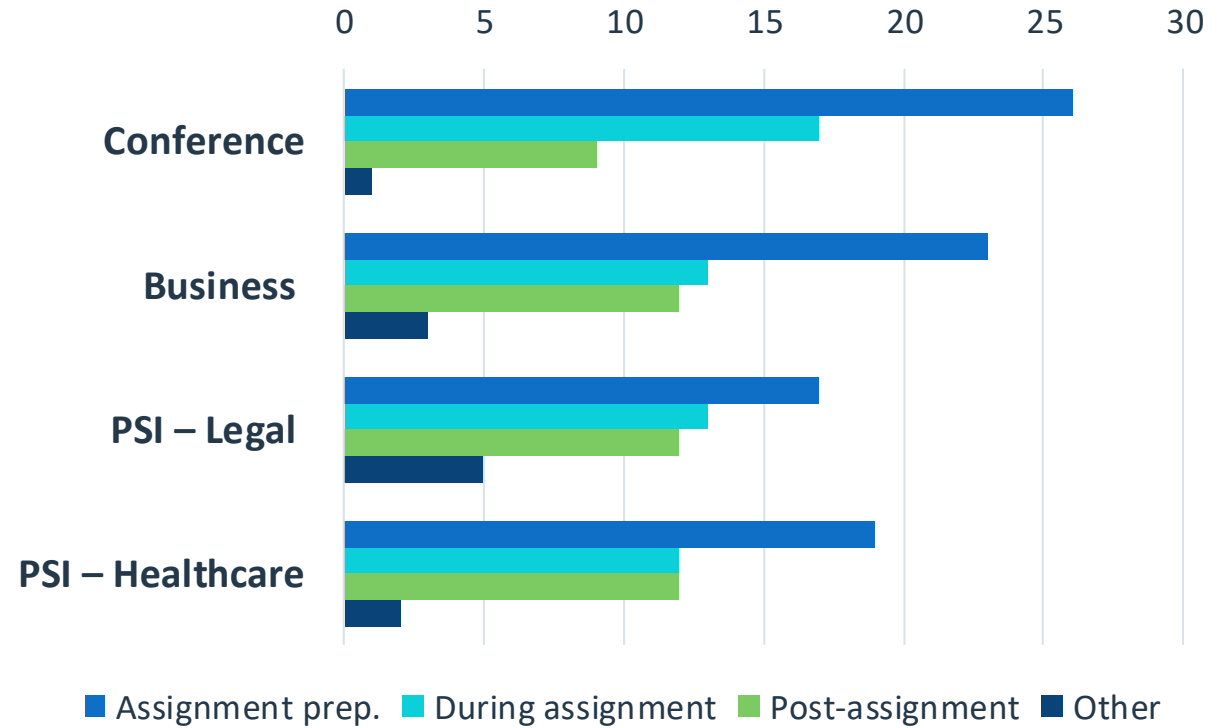
# SURVEY OF INTERPRETERS



**At which stage(s) of your workflow  
do you use AI tools**  
(multiple selections possible)



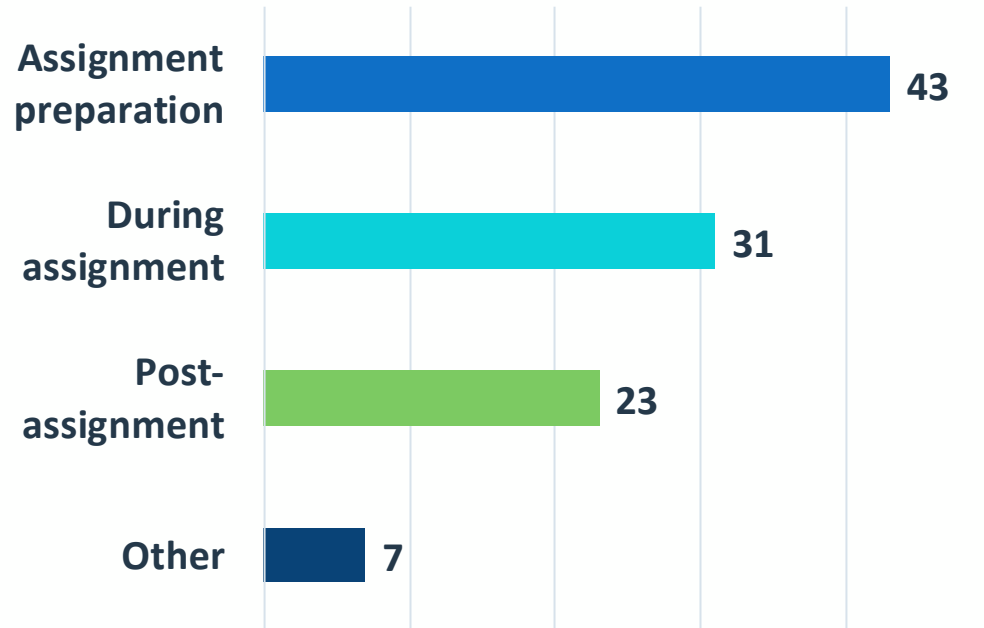
**By interpreting setting**



# SURVEY OF INTERPRETERS



## At which stage(s) of your workflow do you use AI tools (multiple selections possible)



### Assignment preparation

- Drafting emails and creating quotes for clients (ChatGPT, CoPilot)
- Research and terminology (e.g., InterpretBank, ChatGPT, NotebookLM)
- Building glossaries (ChatGPT, DeepL)
- Summarising lengthy materials (e.g., ChatGPT, Gemini)
- Machine translation (DeepL, ChatGPT, Google Transl) for provided materials

### During assignment

- Checking terms / references (Google search\*)
- Real-time transcription and keyword display (Cymo Notes, InterpretBank)
- AI-powered note-taking (Cymo Notes, ReMarkable)

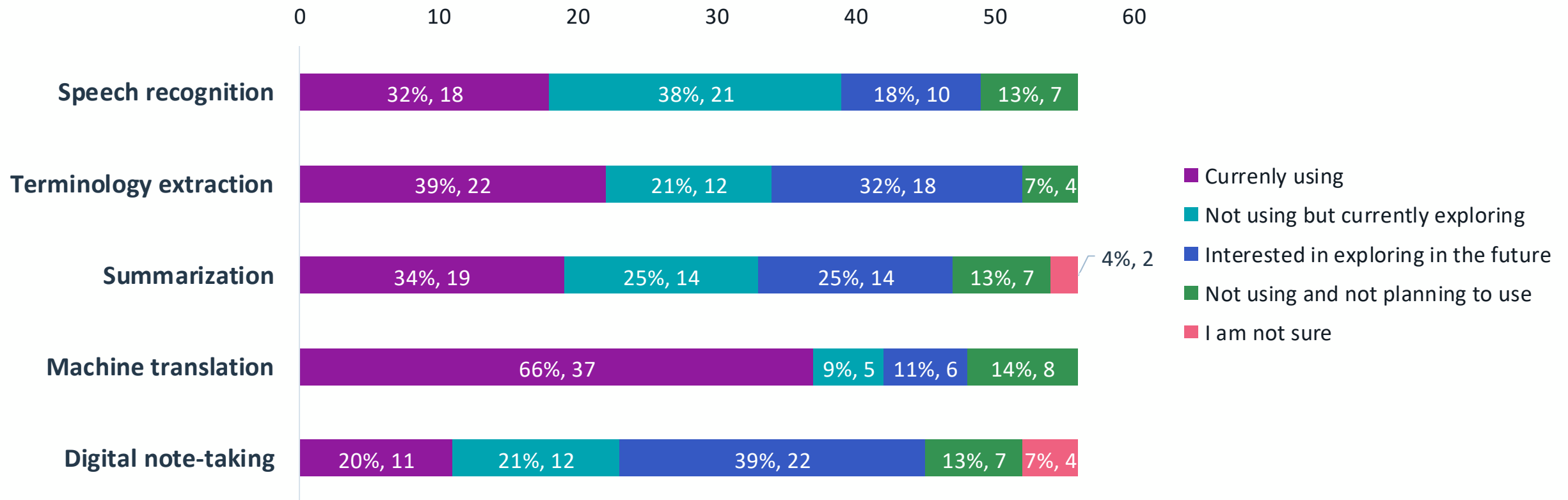
### Post-assignment

- Extracting linguistic items from notes (search feature in note-taking apps)
- Updating glossaries (InterpretBank)
- Invoicing, e-mails (ChatGPT, Co-pilot)

# SURVEY OF INTERPRETERS



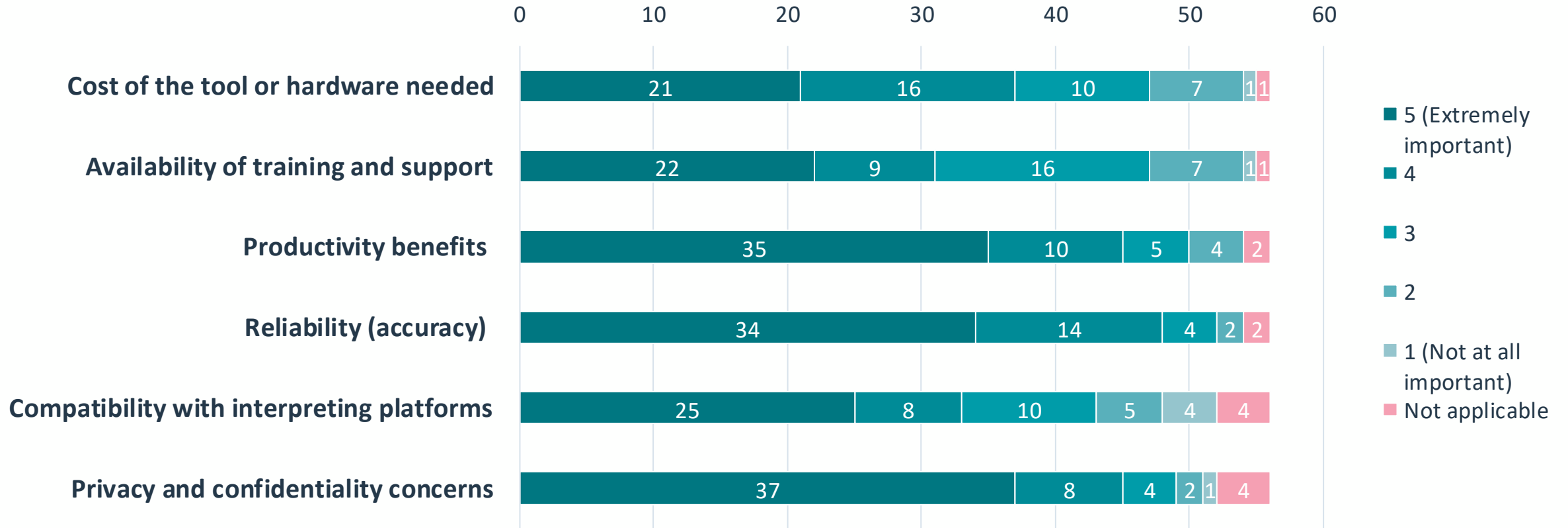
## How would you describe your current or planned use of AI tools in interpreting



# SURVEY OF INTERPRETERS



How important are the following factors for you when you decide whether to use AI tools as part of your interpreting services





# INTERVIEW FINDINGS (LSP AND INTERPRETERS)



# COMPANY PROFILES



**PSI**  
**Non-profit**

- Provide client support for MI/MT tools
- Developed infrastructure and technical skills to assess AI tools
- Uncertain of CAI tools integration in workflow (onsite)



**PSI**  
**Private sector**

- Experience with machine translation and summarisation tools, for preparation purposes.
- Planning to integrate note-taking applications and automatic speech recognition (ASR)



**CI**  
**Private sector**

- Experience with ASR and MT tools
- Planning to facilitate CAI tools adoption

# COMMON POINTS



## ➤ Client Demand for AI Solutions

- Cost-saving and efficiency are primary drivers of AI adoption.
- Machine translation (MT) and machine interpreting (MI) are being adopted due to client interest, including government institutions.

## ➤ Challenges in AI Implementation

- Companies face obstacles such as equipment requirements, workflow adjustments, and system integration.
- Companies stress the need for policies and infrastructure to ensure ethical AI implementation.
- Ethical and legal challenges of AI use in remote interpreting.
- Confidentiality and data security remain major challenges, particularly in sensitive public service settings.

## ➤ Training needs

- Interpreters require training to use AI tools safely and effectively.
- Varying levels of tech proficiency among interpreters (PSIs, Community and CIs) need to be addressed
- Educating clients on AI capabilities and limitations to ensure responsible AI use.

# DIVERSE PERSPECTIVES AND INTEGRATION STRATEGIES



## ➤ **Motivations for AI Adoption**

- Focus on AI to support interpreters and enhance service quality.
- AI as a solution for language gaps, especially for lesser-diffusion languages.

## ➤ **Challenges and Concerns**

- Feasibility of integrating tool into interpreting workflows.
- Accuracy issues, particularly for certain language combinations.

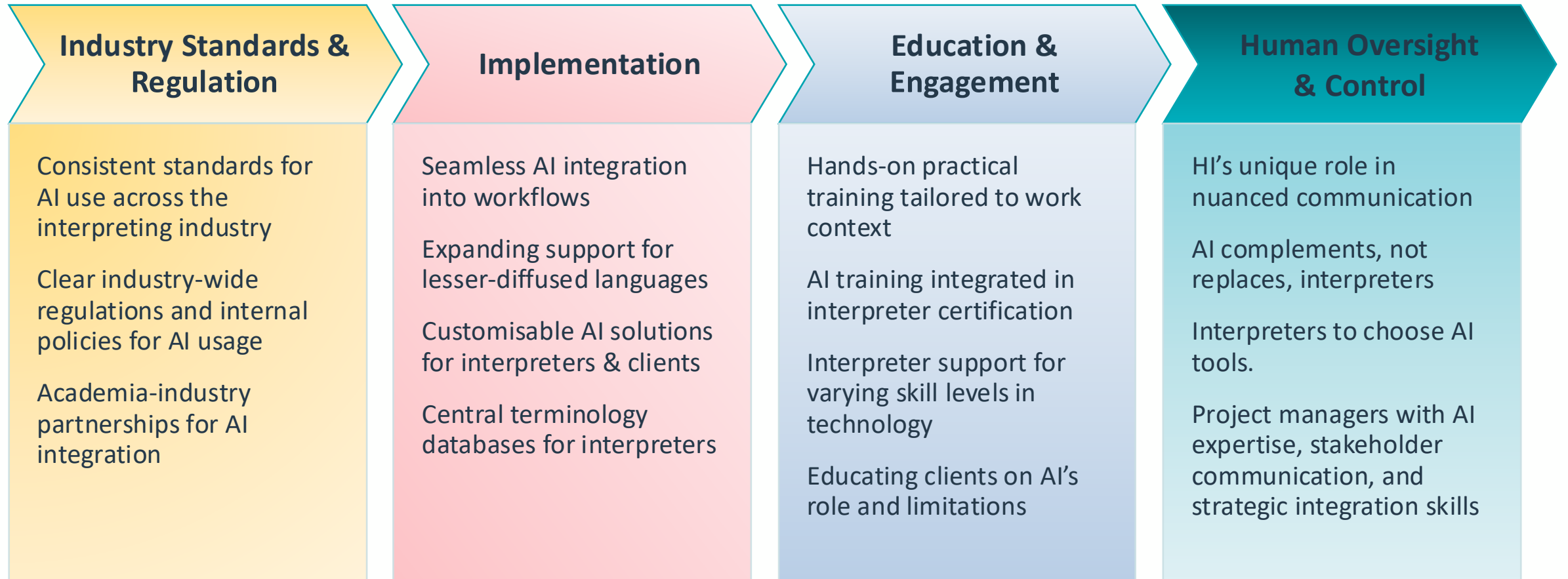
## ➤ **Client Education and Engagement**

- LSPs as facilitators: balancing client expectations with the realities of AI implementation.
- Clients vary in engagement: experimenting with AI tools or expressing concerns about MT usability in government settings.

## ➤ **Training and Support**

- Cautious approach: uncertainty around best practices (cognitive overload and deskilling).
- Planning integration of CAI into interpreter training.

# AI INTEGRATION: INSIGHTS FROM COMPANIES



# INTERVIEWS WITH INTERPRETERS



## Training & education

- AI training is crucial for all stakeholders
- Building conceptual knowledge
- Covering practical elements, focusing on real-world applications
- Accessible without technical expertise

## Industry-wide changes & guidelines

- Industry needs guidance for AI integration
- Review terms and conditions, codes of conduct; develop regulations
- Agencies should test, approve AI tools
- Collaboration and joint decisions needed

## Data protection, privacy, ethical use

- Data protection, privacy, ethical considerations are paramount
- Establish clear guidelines for this
- Client consent crucial before using AI
- Adopt ethical approach to AI

## Implementation & Infrastructure

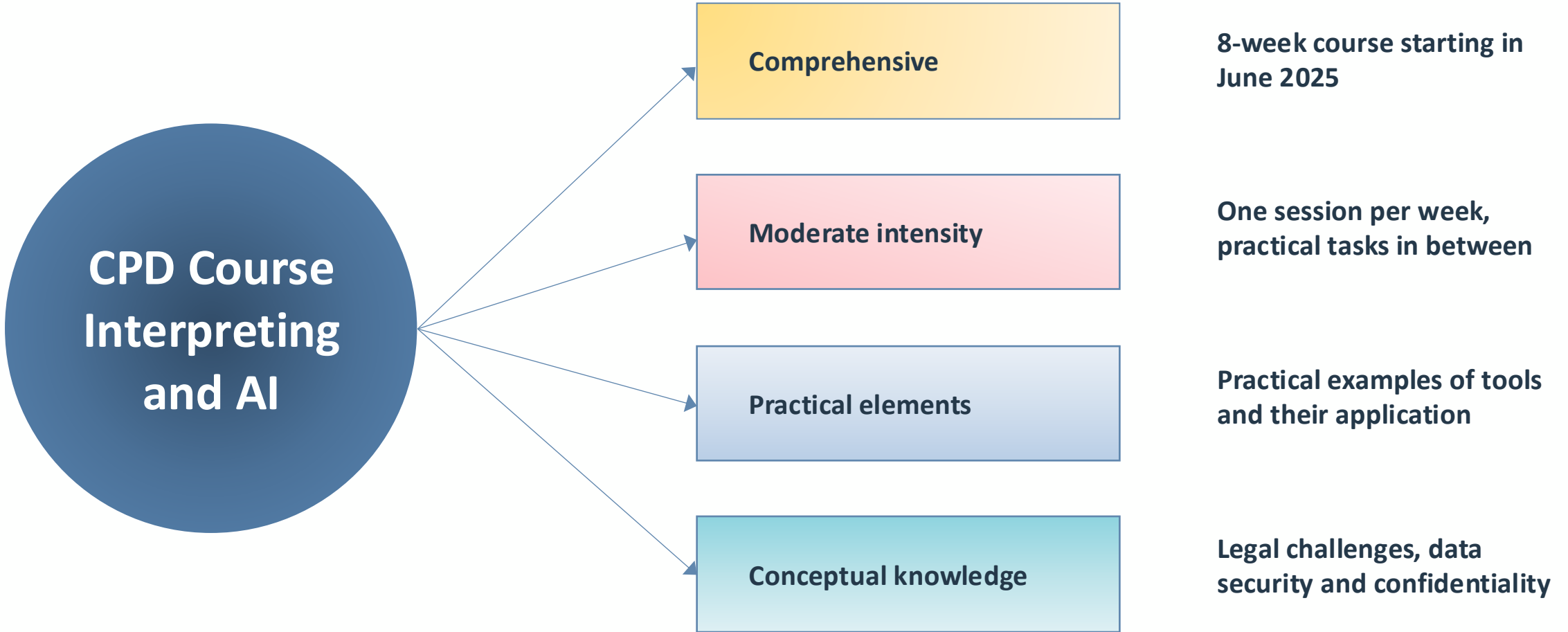
- Successful AI integration requires appropriate infrastructure and minimum tech standards
- Ensure tools are available at interpreter workplace and client organisations
- AI tools must be accurate and user-friendly

## AI as support

- Address fears and misconceptions about AI in interpreting - e.g. awareness campaigns
- Promote AI as a supportive tool, not a replacement
- Educate clients to foster understanding



# NEXT STEPS



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Centre for Translation Studies at University of Surrey



Arts and Humanities Research Council



Innovate UK

EXAMPLE OF  
AI FOR INTERPRETERS  
TERMINOLOGY EXTRACTION





# TERMINOLOGY EXTRACTION USING ChatGPT



- Terminology is very important for interpreters
- ChatGPT is being presented as an easy solution for building terminology databases
- We compared the accuracy of the terms extracted using SketchEngine, TBXTools and ChatGPT
- Evaluated the quality of the definitions produced by ChatGPT for these terms

More details in:

Anastasiia Bezobrazova, Miriam Seghiri, and Constantin Orasan (2024)  
Benchmarking terminology building capabilities of ChatGPT on an English-Russian Fashion Corpus. In *Proceedings of Translating and the Computer 2024 (TC46)*, pp. 147 – 160, Luxembourg, 18 – 20 Nov, <https://arxiv.org/abs/2412.03242>



# CORPUS USED



We build a comparable corpus of magazines and webpages related to fashion written in English and Russian.

Searched on the Internet to identify reputable and popular sources

Identified 12 x 2 magazines (PDF format) and 52 leading fashion websites (HTML format)

We converted these sources to TXT format and cleaned it using ChatGPT (+ manual checking)

1m words in English and 800k words in Russian



# TERM EXTRACTION USING ChatGPT

Prompt used:

*Extract the terms related to fashion, such as all kinds of clothes, shoes, accessories etc from the given text and list them. Can you please extract terms, that can be found ONLY in the given text*

There is no control on the number of terms extracted as each prompt extracted 20-50 terms (even when you mention it)

ChatGPT had to be repeatedly prompted to extract more terms

The process was stopped when ChatGPT started repeating words, produced non-existing words, colour plus clothing items, or unrelated words like “shower”

We compared the output with SketchEngine and TBXTools

The screenshot shows a ChatGPT interface with a document titled "full\_corpus.txt" uploaded. The user prompts the model to extract fashion-related terms. The model's responses are as follows:

**Document:** full\_corpus.txt  
Document

**Prompt 1:** Please extract the terms related to fashion, such as all kinds of clothes, shoes, accessories etc from the given text and list them. Can you please extract terms, that can be found ONLY in the given text

**Response 1:** I found the following fashion-related terms in your document:

**Clothes**

- T-shirts

**Prompt 2:** Try to find more terms related to fashion in this text

**Response 2:** I found additional fashion-related terms in your text:

**Clothes**

- Jackets
- Trench coats

**Prompt 3:** are there more terms?

**Response 3:** Yes, I found even more fashion-related terms in your text:

**Clothes**

- Duster coats
- Car coats
- Flight jackets
- Safari jackets
- Nehru jackets
- Fencing jackets

# RESULT – TERMINOLOGY EXTRACTION



## SketchEngine and TBXTools

- extract thousands of terms
- the list is very comprehensive, but contains lots of noise (cleaning is required)
- we know for sure that the terms appear in our documents
- may be difficult to access
- support a limited number of languages
- TBXTools run locally (but requires more technical knowledge)

## ChatGPT

- extracts only hundreds of terms, with repeated prompts
- no cleaning required, but more time consuming
- many of the candidate terms are real terms, but do they come from the source?
- can be used for any language supported by ChatGPT
- generates good quality definitions

## Which one to use?

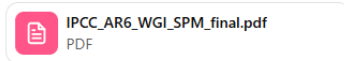
- if only a limited number of candidates can be considered, ChatGPT is a better option
- if a comprehensive list needs to be built, SketchEngine and TBXTools are better options
- consider the privacy related issues
- solutions like Google's NotebookLM may ensure that the terms are from the indicated source

# ChatGPT for bilingual terminology



ChatGPT (and other GenAI tools) can be prompted to extract bilingual terminology from comparable documents and align it

Example for extracting English-French terms from an UN report on climate change



The attached file is a document about climate change in English. Extract the most important 30 terms that appear in the document. A term is an expression that is important in the context of the document and it refers to a concept. Extract only terms that appear in the document. Present the result in a table



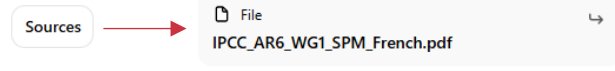
[...]

Here is the table with English and French terms aligned:

#	English Term	French Term	Definition
1	Global warming	Réchauffement planétaire	Increase in Earth's average surface temperature due to greenhouse gas emissions
2	Greenhouse gases (GHGs)	Gaz à effet de serre (GES)	Gases that trap heat in the atmosphere, contributing to climate change
3	Carbon budget	Budget carbone	The maximum amount of CO <sub>2</sub> that can be emitted while keeping global warming within a specific target
4	Equilibrium climate sensitivity	Sensibilité climatique à l'équilibre	The long-term temperature increase expected from a doubling of CO <sub>2</sub>
5	Radiative forcing	Forçage radiatif	The imbalance in Earth's energy caused by

Define in the context of these documents the term "ecological drought"

In the context of the IPCC climate change documents, "ecological drought" refers to a prolonged period of water deficit that disrupts ecosystem functioning, leading to negative impacts on biodiversity, carbon sequestration, and ecosystem services. Unlike traditional drought definitions based solely on precipitation deficits, **ecological drought** considers the effects of increased evapotranspiration due to rising temperatures and changing climate patterns. It affects plant growth, soil moisture, and freshwater availability, ultimately influencing terrestrial and aquatic ecosystems



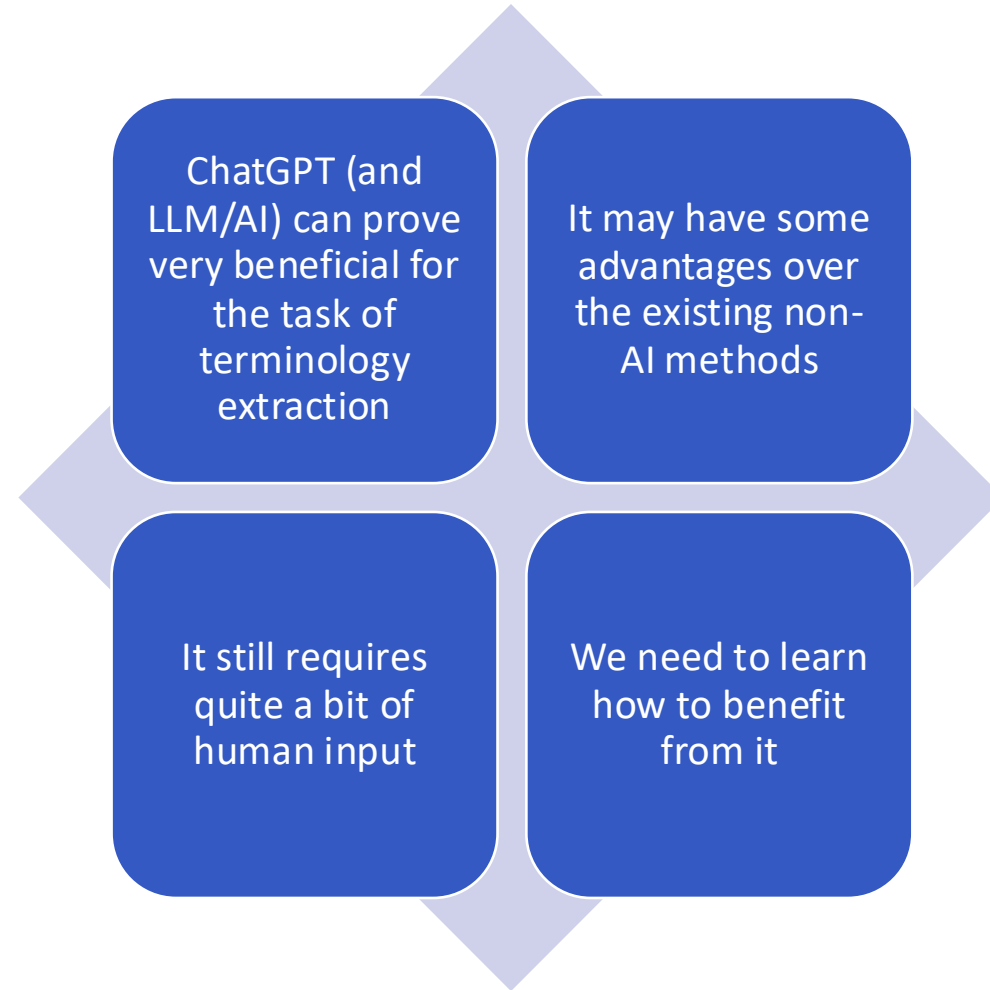
Extract the exact definition from the English document

The exact definition of "ecological drought" from the English document is:

*"Agricultural and ecological drought (depending on the affected biome): a period with abnormal soil moisture deficit, which results from combined shortage of precipitation and excess evapotranspiration, and during the growing season impinges on crop production or ecosystem function in general."*

Sources

# TERMINOLOGY EXTRACTION – TO WRAP UP





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