

# Cyber-scholar Survival Kit

## A Step-by-Step Guidance for Using AI in Research

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## Key Principals:

When using AI for research, it's important that you remain in charge and fully responsible for your work. The power of generative AI lies in its ability to conduct dynamic, real-time conversations to refine and enhance your research process. Our input directly affects the quality of the AI output through two key elements: well-structured prompts and thorough feedback during conversations (Gruda, 2024; Pividori, 2024; Sanderson, 2023). To help us realize the full potential of AI as a research tool, let's explore four key principles for creating effective prompts (based on Stanford Genai Guidance).

### 1. Instruction: Begin your prompt with a clear instruction or question

#### Example:

- Instead of: *Tell me about climate change.*
- Use: ***Summarize the key findings from the latest research on the impact of climate change on Arctic ice melt.***

This ensures the AI understands the specific focus of your query and provides a targeted response (Pividori, 2024).

### 2. Expectation: Specify the desired output

#### Example:

- Instead of: *Explain machine learning.*
- Use: ***Provide a 200-word explanation of supervised machine learning, including examples of its applications in healthcare research.***

By specifying the **length**, **format**, and **context**, you guide the AI to deliver a response that meets your needs.

### 3. Context: Clarify style, tone, role(only for generic models; Yu et al., 2025), and audience

#### *Example:*

- *Instead of: Help me improve this draft.*
- *Use: As a **research assistant specializing in organizational behavior**, help me **polish and refine** this draft for submission to the **Harvard Business Review**. Use the **professional, engaging, and practitioner-focused tone** while ensuring the content is **insightful, evidence-based, and accessible** to a business audience.*

This helps the AI tailor its response to the intended **role, audience** and **purpose**.

### 4. Feedback: Correct and give feedback

#### *Example:*

- If the AI provides a response that is too general, you can refine your prompt:
  - Initial Prompt: *Explain the causes of deforestation.*
  - AI Response: *Deforestation is caused by logging, agriculture, and urbanization.*
  - Refined Prompt: *Provide a **detailed analysis** of the **primary causes** of deforestation in the **Amazon rainforest**, including **economic drivers** and **environmental impacts**.*

Giving feedback and iterating on your prompts ensures the AI generates more **precise** and **useful** outputs.

## Step-by-Step Prompting Guide:

### 1. Define your research question

- Example Prompt:

Identify 3-5 emerging trends in **[Insert Research Topic]** with relevance to **[Insert Interested Research Areas]** literature from the last 3-5 years, highlighting their innovation potential and real-world applications. For each trend:

- **Briefly explain** the core concept/key technology and its alignment with **[Insert Interested Research Areas]** literature.
- **Provide 1-2 specific examples** of recent studies (2019–2024) within or adjacent to **[Insert Interested Research Areas]** literature.
- **Evaluate**: What makes this trend novel compared to prior work?

### **Conduct a gap analysis:**

- What **critical questions** remain unanswered in current research that are pivotal to advancing **[Insert Interested Research Areas]** literature?
- Which methodologies/approaches are underutilized?
- What interdisciplinary connections could be explored?

### **Propose 3 original research questions** that:

- a) Address gaps specific to **[Insert Interested Research Areas]** literature;
- b) Combine at least two disciplines
- c) Have clear feasibility for academic investigation

**Format:** Use bold headings and bullet points. Prioritize trends with high alignment to your stated interests.

## **2. Systematic Literature Review Protocol**

### **2.1 Keyword Development & Search Strategy**

#### **2.1.1 Generate preliminary keywords (using Perplexity-Deepseek; Quinn & Wu, 2024; Sanderson, 2003)**

- Example Prompt:

Analyze this research question using terminology from **[Insert related research area here]** literature: **[Insert research question here]**

Identify and name **X** core concepts with at least **10** literature-derived synonyms each. Prioritize terms from peer-reviewed sources.

Format output as:

Core Concept 1 (synonyms: term1, term2, term3, ..., term10);

Core Concept 2 (synonyms: term1, term2, term3, ..., term10);

...

Create a Web of Science search syntax using TS= tags, combining concepts with Boolean logic.

Format as:

TS=((Core Concept 1 OR term1 OR term2 OR...)

AND (Core Concept 2 OR term1 OR term2 OR...))...

### **2.2 Literature Database Construction**

#### **2.2.1 Conduct primary search (using Web of Science)**

- IV/DV logic chains (e.g., "IV1 AND DV1", "IV2 AND DV1")
- Individual variable terms (e.g., "DV1", "DV2")

#### **2.2.2 Establish inclusion/exclusion criteria**

- Q1/Q2 journals in your discipline

- Publication date range
- Methodological relevance

- Example Prompt:

TS=((concept1 OR synonym1 OR ...) AND (concept2 OR synonym2 OR ...) ...) AND

SO=("journal1" OR "journal2"... ) AND PY=(YYYY-YYYY)

### 2.2.3 Build literature database (using Zotero)

- Set up Zotero connector: <https://www.zotero.org/download/connectors>
- Export bibliography list
- Summarize key findings, theories, and variables per paper

- Example Prompt:

For each paper in the attached bibliography list:

1. Shorten titles to 5 initial words
2. Create a 6-column table containing:
  - a. Number
  - b. Paper Title
  - c. Key Findings (3-5 bullet points)
  - d. Main Theories (foundational frameworks used)
  - e. Hypotheses (explicitly tested predictions)
  - f. Primary Variables (measured/manipulated factors)

Formatting rules:

1. Start each cell with hyphen bullets
2. Maintain vertical alignment like this example:

| Number | Paper Title       | Key Findings               | Main Theories          | Hypotheses             | Primary Variables       |
|--------|-------------------|----------------------------|------------------------|------------------------|-------------------------|
| 1      | Climate Change... | - Rising CO2 correlates... | - Greenhouse effect... | - Higher emissions...  | - Temperature...        |
| 2      | Urban Planning..  | - Walkable cities...       | - New Urbanism...      | - Pedestrian access... | - Population density... |

Guidelines:

1. Omit columns if information is unavailable (write 'Not specified')
  2. Keep bullets parallel in tense/structure
  3. Prioritize quantitative claims in Findings/Variables
  4. Link Theories to Hypotheses explicitly where possible
- Condense reading list to core studies (<20)

## 2.3 Critical Literature Analysis

### 2.3.1 Through Paper Analysis

### 2.3.2 Identify & Compare Key Theoretical Frameworks (using Perplexity-Deepseek)

- Example Prompt:

Input:

- Your bibliography list (upload files)
- Key study topics: [List variables]
- Core question: [State plainly]

Tasks:

## 1. Extract Explicit Theories

- Scan for: "use \* theory," "applying \* framework," "based on \* model"
- List each theory verbatim with:
  - Source (Author, Year, Page)
  - Your topics it addresses (with direct quotes)
  - Any noted limitations ("fails to...", "not suitable for...")

## 2. Map Connections

Build table:

| Your Topic | Theory       | Sources          | Key Quote               |
|------------|--------------|------------------|-------------------------|
| [Variable] | [Exact name] | (Smith 2020 p.5) | "Explains X through..." |

Flag:

- Topics with  $\geq 2$  competing theories
- Theories used inconsistently across papers
- Direct critiques ("Theory Y overlooks...")

## 1. Recommend Theories

Prioritize options with:

- $\geq 2$  sources applying to your topics
- No unresolved major critiques
- Direct quotes aligning with your research question

Hard Rules:

⚠ Reject theories not explicitly named in text



⚠ Require page-numbered evidence for all claims

⚠ Label "Needs verification" for ambiguous links

Output Example:

1. **\*\*Social Learning Theory\*\***

- Your Topics: Teamwork, Skill development
- Evidence: Lee (2021 p.8), Costa (2023 p.12)
- Strength: Widely applied (4 studies)
- Caution: 1 paper notes online limitation

2. **\*\*Flow Theory\*\***

- Your Topics: Focus, Motivation
- Evidence: Kim (2020 p.15)
- Issue: Single-study application

**2.3.3 Select your favorite theoretical framework (using your brilliant mind)**

**2.4 Drafting Process**

**2.4.1 First draft: Content completeness**

**2.4.1.1 Theoretical Framework & Key Variables Section (using Perplexity-Deepseek)**

- Example Prompt:

Compose a 1,300-word Theoretical Framework section about [Selected Theoretical Framework]

using my attached bibliography, structured as follows:

1. Definition (200 words)
  - Synthesize a working definition from foundational works by [Key Author 1] (Year) and [Key Author 2] (Year), focusing on core components identified in [Seminal Work] (Year)

- Explain the framework's academic relevance using evidence from [Disciplinary Analysis Study] (Year), particularly its applications in [specific research contexts]
1. Theoretical Elaboration (500 words)
    - Analyze three core components identified in [Framework Analysis Paper] (Year):
      1. [Component 1] as described by [Author A] (Year)
      2. [Component 2] per [Author B] & [Author C] (Year)
      3. [Component 3] from [Comparative Study] (Year)
    - Discuss relationships between components using models from [Integrative Review] (Year)
    - Address theoretical limitations noted in [Critical Analysis] (Year)
  1. Empirical Evidence Analysis (600 words)
    - A) Confirmatory Studies:
      - Summarize methodology and findings from [Study 1] (Year), [Study 2] (Year), and [Meta-Analysis] (Year) showing framework validation
      - Identify consistent patterns across [Geographical Context] studies (Author et al., Year) and [Population] research (Author et al., Year)
    - B) Conflicting Evidence:
      - Analyze contradictory results from [Study X] (Year) and [Study Y] (Year)
      - Compare methodological differences using criteria from [Validation Paper] (Year)
      - Discuss contextual factors in [Cultural Context] research (Author et al., Year)
    - C) Evidence Interaction:
      - Map knowledge gaps using framework from [Synthesis Paper] (Year)
      - Propose integration strategies from [Cross-Disciplinary Study] (Year)

## 1. References

- **Include complete references for all cited works**

Formatting Requirements:

- Use APA 7th edition citations throughout
- Reference at least 15 sources from attached bibliography
- Maintain objective tone with critical analysis
- Highlight both supporting/challenging evidence equally
- Use clear subsection headings
- Include transitional phrases between evidence categories

### 2.4.1.2 Hypotheses Section (using Perplexity-Deepseek)

- Example Prompt:

Construct a hypothesis section examining X's influence on Y using the [provided theoretical framework]. Structure your analysis as:

#### 1. Mechanistic Explanation

- Detail 2 causal pathways from the theoretical framework explaining  $X \rightarrow Y$  relationships
- Cite foundational papers establishing these mechanisms

#### 2. Empirical Validation

- Analyze 4-5 recent studies (2020-2024) from my bibliography using this pattern:  
*[Author]'s (Year) [methodology] demonstrated [key finding] ( $\beta=$ ,  $p=$ ), though constrained by [limitation]*

#### 3. Evidence Synthesis

- Compare study designs/methods across cited works

- Resolve contradictions using framework-guided analysis

#### **4. APA Requirements**

- Parenthetical citations for all claims (Author, Year)
- Full references with DOIs at conclusion

#### **Output Specifications:**

- 1,000-word cohesive narrative
- 3-4 evidence-driven paragraphs
- Academic tone with concise phrasing
- Integrated examples from attached bibliography
- Final reference list (APA 7th ed)

#### **Example Structure:**

'The [Framework] posits X influences Y through [Mechanism 1] (Core Author, 2020). Lee's (2023) longitudinal analysis of [population] found a 0.35 SD increase in Y per X-unit ( $p < .01$ ), aligning with this pathway. However, Chen's (2022) experimental study showed null effects when controlling for [variable], suggesting boundary conditions.'

Focus on framework-aligned analysis using provided sources, avoiding tangential discussions.

#### **2.4.2 Second draft: Argument coherence**

##### **Revise it to the style of specific journal**

Refer to section 7 for guidance on proofreading and editing

#### **2.4.3 Final draft: Synthesis originality**

### **3. Research Design**

#### **3.1 Experiment Material Preparation**

- Example Prompt: *"As a research assistant, help me design an **experiment protocol** to test the impact of receptiveness training on persuasiveness.. Include **step-by-step instructions, materials needed, and ethical considerations**. Use a **professional tone** suitable for an academic audience."*

### 3.2 Survey Design

- Example Prompt: *"Generate a **3-question Likert-scale survey** to measure employee engagement in prosocial behavior in workplace. Ensure the questions are **clear and unbiased**. Use a **neutral tone** suitable for a corporate audience."*

### 3.3 Interview or Focus Group Questions

- Example Prompt: *"Create a list of **10 open-ended questions** for a focus group on barriers to innovation in startups. Ensure the questions are **thought-provoking, non-leading, and aligned with the research objectives**. Use a **conversational tone** suitable for participants from diverse backgrounds."*

## 4. Data Collection

### 4.1 Data Cleaning and Preprocessing

- Example Prompt: *"Provide **step-by-step instructions** for cleaning a dataset with missing values and outliers. Include **specific techniques** (e.g., imputation, normalization) and **tools** (e.g., Python, R) to use. Use a **technical tone** suitable for data scientists."*

### 4.2 Data Annotation or Coding

- Example Prompt: *"Suggest a **coding framework** for qualitative data on customer satisfaction in the retail industry. Include **categories, subcategories, and examples** of how to apply the framework. Use a **structured format** and a **formal tone**."*

## 5. Data Analysis

### 5.1 Quantitative Analysis

- Example Prompt: *"Explain how to perform a **multiple regression analysis** to assess the relationship between leadership styles and team performance. Include **key assumptions, steps, and interpretation of results**. Use a **technical tone** suitable for researchers with intermediate statistical knowledge."*

### 5.2 Qualitative Analysis

- Example Prompt: *"Help me identify **recurring themes** in interview transcripts about workplace diversity. Provide a **summary of themes, example quotes, and suggestions for visualization**. Use a **formal tone** suitable for an academic paper."*

### 5.3 Visualization

- Example Prompt: *"Suggest the **best types of charts** to visualize trends in annual sales data over five years. Include **rationale for each chart type and examples of how to interpret them**. Use a **practical tone** suitable for a business audience."*

## 6. Writing and Structuring the Paper

### 6.1 Drafting Sections

- Example Prompt: *"Write a **draft introduction** for a paper on the impact of AI on job displacement in the manufacturing sector. Ensure it includes a **clear research question, contextual background, and significance of the study**. Use a **formal academic tone**."*

### 6.2 Structuring Arguments

- Example Prompt: *"Help me outline the **discussion section** for a study on the effectiveness of remote learning in higher education. Include **key points to address**,*

such as *implications for practice, limitations, and future research directions*. Use a *structured format and a formal tone*."

### 6.3 Citation and Referencing

- Example Prompt: "Format these 15 references in **APA style** for a manuscript on sustainable supply chain management. Ensure the formatting is **consistent and accurate**. Use a **technical tone** suitable for academic writing."

## 7. Proofreading and Editing

### 7.1 Grammar and Clarity

- Example Prompt: "Proofread this paragraph for **grammar, clarity, and conciseness**, ensuring it aligns with **academic writing standards**. Provide **specific suggestions for improvement**. Use a **formal tone**."

### 7.2 Tone and Style

- Example Prompt: "Adjust the tone of this manuscript to match the style of the **Harvard Business Review—professional, engaging, and practitioner-focused**. Ensure the language is **clear and accessible** to a business audience."

### 7.3 Plagiarism Check

- Example Prompt: "Suggest ways to **rephrase these sentences** to avoid plagiarism while retaining the **original meaning**. Provide **alternative phrasings** for each sentence. Use a **formal tone**."

## 8. Submission and Peer Review

### 8.1 Journal Selection

- Example Prompt: "Suggest **top journals** in the field of organizational behavior that accept empirical studies on team dynamics. Provide a **brief rationale** for each

*recommendation, considering factors like **impact factor** and **audience fit**. Use a **formal tone**."*

## 8.2 Responding to Reviewer Comments

- Example Prompt: *"Help me draft a **response to reviewer comments** on my paper about the impact of digital transformation on SMEs. Ensure the tone is **respectful and professional**, and address each comment **clearly and thoroughly**."*

## 8.3 Cover Letter Preparation

- Example Prompt: *"Write a **cover letter** for submitting my manuscript to the Journal of Applied Psychology. Highlight its **key contributions, relevance to the journal**, and **compliance with submission guidelines**. Use a **professional tone**."*



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## Appendix A: Summary of Interviews on the Use of AI

### Professor 1

#### Use of AI in Research

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Conceptualization & Critical Thinking**

I avoid using AI for idea generation, conceptualization, or tasks requiring critical thinking. In my experience, AI tends to produce generic or unoriginal outputs, which lack the nuance needed for innovative, competitive research.

- **Literature Review**

I use AI after manually reviewing papers:

- To summarize key sections I've highlighted across multiple studies.
- To proofread early drafts of literature reviews, improving readability and flagging logical gaps.

AI isn't involved in sourcing papers or synthesizing ideas—this remains a human-driven process.

- **Data Analysis**

My use of AI here is twofold:

- **Research Focus:** I study LLMs as subjects (e.g., comparing their survey responses to human data to critique their misuse as human proxies in social sciences).

- **Computational Tools:** For text corpora, I apply topic modeling or sentiment analysis—but never input raw data into chatbots like ChatGPT.
- **Writing**  
I rely heavily on AI for polishing text—proofreading, enhancing flow, and refining language. However, all core arguments and content remain my own, with AI acting strictly as an editorial tool.

### **Key Perspectives on AI's Role**

- **Limitations in Creativity:** LLMs excel at “averaging” existing knowledge but struggle to generate novel, critical, or disruptive ideas.
- **Ethical Boundaries:** I strongly oppose using LLMs as human proxies due to biases and oversimplification risks, a stance supported by my research.
- **Strategic Balance:** I deploy AI for mechanical tasks (editing, computational analysis) while reserving intellectual rigor and originality for human effort.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc. (depends on what they share in Q1)?

- **Custom Chatbot for Writing Style Replication**

I create personalized chatbots using my previous papers as a knowledge base to mimic my writing style, logic, and argument structure. This helps me maintain consistency in new work by cross-referencing drafts with the AI-generated "voice."

- **Data Quantity Depends on Use Case**

For style/logic emulation, 10 papers often suffice. However, domain-specific expertise requires more data (e.g., textbooks or extensive research). Flexibility in input volume ensures tailored results for different goals.

- **Targeted Literature Review Workflow**

Instead of uploading full papers, I manually highlight key passages and feed those to AI for summarization. I also write initial drafts myself, then use AI to refine language and clarity while preserving original meaning.

### **Elaboration**

1. **Custom Chatbot:** By training AI on my own work, I ensure alignment with my academic voice. The bot acts as a style guide, verifying tone and reasoning patterns in new writing without altering core ideas.
2. **Data Strategy:** Smaller datasets work for stylistic consistency, but depth in niche topics demands broader input. This balance avoids overloading systems while maintaining relevance.
3. **Literature Review Efficiency:** Curating critical excerpts streamlines analysis, and AI-driven edits enhance readability without compromising my interpretations. This hybrid approach keeps me in control of content while leveraging AI for polish.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

- **Preference for Claude due to flexibility and fewer restrictions**

I find Claude more effective than ChatGPT because it imposes fewer content blocks and allows broader applications. When attempting to simulate responses from specific populations (e.g., "average Chinese or American person"), newer GPT versions refused,

forcing me to use older, less restricted iterations. Claude’s adaptability makes it better suited for experimental research tasks.

- **Comparable writing quality with a personal preference for Claude’s interface**

While both Claude and GPT produce similar writing quality, I gravitate toward Claude for its user experience, which feels more intuitive and enjoyable—akin to preferring an iPhone over Android. This subjective ease of interaction enhances my workflow efficiency.

- **Coding use case: Cross-verification between models**

I employ both models for coding, often using Claude to generate initial code and GPT to refine or optimize it. This “second opinion” approach mitigates errors and leverages each model’s strengths, though I don’t perceive significant performance differences between them.

- **Professional context as an AI researcher**

As someone who studies and works with AI daily, my reliance on these tools is both practical and research-driven. My evaluations are shaped by hands-on experimentation, particularly in tasks involving language model behavior and human-AI interaction simulations.

4. How often do you use AI tools in research? (5)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (1)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 - Reliable
- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (3)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 - Appropriate
- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, impact on student learning, data privacy issues).

- **Proliferation of Low-Quality "Garbage Research"**

I predict a surge in poorly constructed, AI-generated research due to institutional pressure to prioritize publication quantity over quality. Weak analysis, incoherent arguments, and thoughtless automation will dilute academic rigor. However, AI could free skilled researchers from repetitive tasks, allowing deeper exploration of meaningful work.

- **Ethical and Privacy Concerns Will Be Ignored**

Current lack of AI regulation and enforcement mechanisms makes data privacy and ethics a secondary concern. Governments and corporations are too invested in AI development to prioritize these issues. Without legal frameworks, ethical debates remain theoretical, with little actionable progress.

- **AI-Assisted Writing ≠ Plagiarism**

Labeling AI-generated text as plagiarism is counterproductive, akin to calling calculator-assisted math "cheating." The responsibility lies with researchers to verify originality and add critical thinking. I teach students to use AI as a drafting tool but penalize mindless copy-pasting.

- **Mandating Transparency Through AI Interaction Logs**

To ensure accountability, I require students to submit screenshots of their AI interactions. This traces how they refine ideas, proving effort and originality. While labor-intensive, it combats plagiarism and incentivizes thoughtful engagement with AI tools.

- **Speed vs. Originality in Modern Research**

AI accelerates publishing but risks homogenizing output. Researchers face a trade-off: fast, generic work for job security versus time-intensive, groundbreaking projects.

Systemic pressures (e.g., "publish or perish") discourage long-term, creative endeavors, even if they're more valuable.

## **Elaboration**

### **1. Low-Quality Research**

The interviewee argues that universities' emphasis on output volume will incentivize AI-generated "garbage" papers with shallow analysis. However, they acknowledge AI's potential to

automate tedious tasks (e.g., data sorting), freeing researchers to focus on high-impact work. The key challenge lies in balancing efficiency with intellectual rigor.

## **2. Neglected Ethics and Privacy**

Pessimism dominates here: the interviewee believes profit-driven AI adoption will overshadow privacy and ethical risks. Without enforceable laws, misuse (e.g., biased algorithms, data exploitation) will persist. They stress that ethical discussions lack teeth until regulatory frameworks emerge.

## **3. Redefining Plagiarism**

The interviewee rejects equating AI use with academic dishonesty. They compare AI to a calculator—a tool enhancing productivity, not replacing intellect. Their teaching approach rewards students who critically engage with AI to refine ideas, while penalizing passive copying.

## **4. Screenshots as a Stopgap Solution**

By requiring interaction logs, the interviewee verifies students' critical thinking and deters lazy AI reliance. Though impractical at scale, this method highlights the need for better transparency tools. They admit it's a temporary fix but effective for fostering accountability.

## **5. Systemic Pressures Over Innovation**

The academic system's demand for rapid publication discourages originality. The interviewee laments that researchers often prioritize speed (to retain jobs) over groundbreaking work. AI exacerbates this by enabling faster but less innovative output, creating a tension between survival and meaningful contribution.

## **Use of AI in Teaching**

1. Thinking about the different stages of teaching, such as lesson planning, assessment, or feedback, could you describe how you have used AI tools in these different teaching stages?



If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Limited AI use for interactive classroom engagement**

I occasionally employ AI tools (like large language models) during student presentations or discussions to generate questions, provide summaries, or pose challenges to students. This is done to add an element of novelty and engagement in my AI-focused courses, but it's purely supplemental and never impacts grades.

1. **Context:** The AI acts as a "participant" to stimulate discussion or reflection, such as summarizing a topic and generating follow-up questions.
2. **Purpose:** This approach makes lessons more dynamic and models real-world AI interactions for students.
3. **Limitation:** The tool is used sparingly and playfully, avoiding integration into formal assessment structures.

- **Avoidance of AI for grading or critical feedback**

I refuse to use AI for assessing student work, particularly essays, due to concerns about fairness, reliability, and transparency.

1. **Key Concerns:** AI systems lack the nuance to evaluate complex writing, and their decisions are opaque. If a student challenged a grade, I couldn't justify an AI's reasoning.
2. **Ethical Stance:** Outsourcing grading feels impersonal and disrespectful to students' efforts.
3. **Exception:** A tentative idea to compare AI-generated grades with my TA's assessments as an experiment, though skepticism remains.

- **Openness to experimentation in non-critical areas**

While I avoid AI for high-stakes tasks, I acknowledge its potential for low-risk applications, such as collaborative experiments (e.g., AI vs. TA grading comparisons).

1. **Boundaries:** Any experimentation would occur outside formal grading systems to preserve fairness.
  2. **Teaching Philosophy:** My priority is maintaining trust and clarity with students, which AI cannot yet replicate in subjective assessments.
  3. **Future Consideration:** Exploring AI as a supplementary tool—not a decision-maker—if transparency and control are ensured.
2. Do you have any recommended AI prompts for teaching? (depends on what they share in Q1)?
3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?
4. How often do you use AI tools in teaching? (3)
- 1 = Never
  - 2 = Rarely
  - 3 = Occasionally
  - 4 = Frequently
  - 5 = Very Frequently
5. How would you rate the general reliability of AI tools in teaching? (3)
- 1 - Very Unreliable
  - 2 - Unreliable
  - 3 - Neutral

- 4 - Reliable

- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for teaching? (2)

- 1 - Very Inappropriate

- 2 - Inappropriate

- 3 - Neutral

- 4 - Appropriate

- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of teaching, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, impact on student learning, data privacy issues).

- **AI as a tool for engagement and creativity**

I use AI to inject humor and spontaneity into classes, like asking it questions mid-discussion to generate surprising or silly answers that spark laughter and lively debates.

It's not a core teaching tool but a way to make lessons more dynamic. For structured tasks, AI helps refine lecture flow or course design when used strategically, though I still prioritize human input for grading and feedback.

- **Ethics are subjective and context-dependent**

Ethical standards for AI use aren't universal—what's acceptable to one person might conflict with another's values. I believe professors should have autonomy in deciding how to integrate AI, but universities need clear policies to ensure students retain control over how their work is assessed (e.g., opting out of AI-generated feedback).

- **Risks of overreliance and diminished critical thinking**

If professors uncritically adopt AI for tasks like grading or essay feedback, students lose the human insight they deserve. For example, blindly copying AI-written essays earns a zero, but using AI to refine arguments or explore ideas creatively could enhance learning. The key is balancing automation with human judgment.

- **Potential for hybrid grading systems**

I foresee a future where grading is split between professors and AI, with each contributing 50% to evaluations. This would require rigorous testing across disciplines to ensure fairness. For now, policies must discourage misuse while rewarding innovative applications (e.g., AI-assisted brainstorming).

- **AI bias and the need for critical engagement**

AI isn't infallible—it's like a "not-very-smart friend" whose biases or errors require scrutiny. Students and educators should treat its outputs as suggestions, not gospel. Encouraging skepticism (e.g., fact-checking AI claims) builds resilience against misinformation and fosters independent thinking.

8. Any other comments?

- **Final Thoughts**

AI's value hinges on *how* it's used, not *whether* it's used. Creativity, policy safeguards, and human oversight are crucial to maximizing benefits (engagement, efficiency) while minimizing risks (laziness, bias). The future likely involves hybrid systems, but critical thinking must remain central to education.

**Professor 2**

## **Use of AI in Research & Teaching**

1a. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

1b. Thinking about the different stages of teaching, such as lesson planning, assessment, or feedback, could you describe how you have used AI tools in these different teaching stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **AI-Driven Music/Video Production:**

I use AI tools like Demucs to separate vocals/instrumentals, generative AI for music creation, and mastering tools for audio balancing. Students apply these to create covers, original tracks, and polished mixes.

- **AI for Course Material Development:**

I leverage AI (e.g., Microsoft Spell Checker, generative tools) to refine course proposals, summarize content, and articulate complex ideas. For example, I input bullet points into AI to generate clear explanations for syllabi adjustments.

- **Curated Tutorials for AI Tool Adoption:**

I create 5–10 minute tutorials (e.g., Demucs for music separation) to help students start projects faster. These act as “travel agent” guides, streamlining workflows without overwhelming learners.

- **Peer/Audience Evaluation Over AI Grading:**

I avoid AI in assessing music videos, opting for live peer feedback and audience voting (similar to *America's Got Talent*). However, I see potential for AI to analyze technical aspects like pacing or audio balance in the future.

## **Elaborations**

### **1. AI-Driven Music/Video Production:**

In our course, students work on creative projects requiring vocal/instrumental separation, AI-generated music, and audio mastering. Tools like Demucs split tracks for remixes, while generative AI helps produce original melodies or lyrics. For example, a student might isolate a song's drums using Demucs, compose new vocals via ChatGPT, and use mastering AI to balance levels—all integrated into their final video.

### **2. AI for Course Material Development:**

When designing the course, I use AI to refine language and structure. For instance, I'll draft key points about project goals, then ask AI to expand them into cohesive paragraphs for administrative approval. This ensures clarity without sacrificing the course's unique, hands-on "master class" approach.

### **3. Curated Tutorials for AI Tool Adoption:**

My tutorials focus on efficiency: short demos that highlight a tool's core function (e.g., "How to Isolate Vocals in 5 Minutes"). This minimizes the learning curve, letting students experiment independently. By pre-testing tools like Demucs, I ensure they're reliable and relevant to assignments.

### **4. Peer/Audience Evaluation Over AI Grading:**

While AI isn't used for grading, our live feedback sessions create a dynamic, collaborative environment. Students present work, receive critiques, and vote on "audience choice" awards. That said, AI could eventually analyze technical metrics (e.g., sync between visuals/audio) to complement human judgment.

2a. Do you have any recommended AI prompts for literature review, data analysis, or writing etc. (depends on what they share in Q1)?

2b. Do you have any recommended AI prompts for teaching? (depends on what they share in Q1)?

### **1. Strategic Context Framing**

*"I begin by establishing my professional role and specific objectives to ground the AI's output in relevant parameters."*

When revising course outlines, I specify: *"I'm a professor updating a music video creativity course - focus suggestions on artistic innovation, not AI ethics."* This prevents generic suggestions like multi-lecture ethics modules that create student hesitancy, particularly among Hong Kong learners who might over-censor creative exploration due to ethical ambiguity<sup>12</sup>.

### **2. Bias Mitigation Through Constraints**

*"I explicitly limit discussions of sensitive topics to practical, context-specific applications using bullet-point boundaries."*

For copyright guidance, I prompt: *"Explain parody rights in 3 sentences: 1) Educational/non-commercial use exemptions 2) Commercialization complexities 3) Standard cover song licensing."* This contains ethics discussions to actionable essentials while avoiding theoretical detours that could consume 3 lectures<sup>23</sup>.

### **3. Adaptive Stylistic Hybridization**

*"I combine CNN's accessible writing style with discipline-specific conventions through layered prompts."*

When refining technical papers, I use:

- "Rewrite this methodology section in CNN science article style"

- "Now adapt it to ACM Multimedia formatting conventions"

This achieves both broad accessibility and field-specific rigor. The CNN foundation eliminates the grammatical issues common in dissertation-style writing from non-native English databases, while subsequent academic framing ensures proper jargon and structure<sup>13</sup>.

#### 4. Audience-Specific Calibration

*"I strategically blend universal clarity with targeted conventions when crossing disciplinary boundaries."*

For HCI conference submissions:

"Act as a CNN editor explaining this music technology research to general readers, then adapt it using Human-Computer Interaction conference terminology and results presentation standards."

This dual approach maintains narrative flow while incorporating field-specific:

- Acronyms
- Results visualization norms
- Citation practices

without sacrificing comprehensibility<sup>3</sup>.

The throughline remains **precision engineering of AI outputs** - whether containing ethical scope, hybridizing writing styles, or bridging disciplinary communication gaps. This transforms generative AI from a generic tool into a targeted collaborator that respects both creative freedom and academic rigor.

3ab. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?



- **Poe Assistant as my primary tool for academic writing and student recommendations**

I consistently choose Poe Assistant over other models like ChatGPT because it excels at contextualizing student achievements. When drafting recommendation letters, I input bullet points about a student's work (e.g., automated music mashups), and Poe elaborates on their significance, connecting technical skills to broader impacts like creativity or curriculum development. This helps me articulate why a student's niche expertise matters for specific roles, such as faculty positions or industry jobs—details I might otherwise gloss over due to familiarity with their projects.

- **Streamlining course design and conference paper reviews**

For conference reviews, I copy-paste submission criteria from web forms into Poe to generate evaluations that mirror the conference's grading structure. It identifies gaps I might rush past, like a paper's thin methodology, and drafts comprehensive feedback (e.g., "The authors should expand on dataset validation"). However, I manually adjust its ratings—often downgrading "accept" to "borderline" or "weak reject"—to reflect stricter academic competitiveness. This balances Poe's efficiency with my nuanced understanding of conference standards.

- **Collaborative refinement with cautious trust**

While Poe provides a robust starting point for reviews, I treat its output as a draft rather than a final assessment. For example, it might praise a paper's theoretical framework but overlook its lack of real-world application. I refine its feedback by adding context like, "While the analysis is novel, the absence of case studies limits practical relevance."

Similarly, in grading, I use Poe’s detailed critiques to inform my evaluations but scale back its generosity to ensure differentiation between high-quality and mediocre work.

- **Balancing automation with academic rigor**

Poe’s tendency toward leniency (e.g., frequently recommending “accept”) has taught me to pair its automation with deliberate scrutiny. For borderline submissions, I prompt it to “adopt a more critical tone” or manually adjust scores to emphasize weaknesses. This workflow lets me harness its efficiency in generating thorough, criteria-aligned feedback while upholding the precision required for rigorous peer review and student assessments.

- **Automated conference review formatting with adjustable criticality**

When evaluating conference submissions, I directly paste the review web form’s criteria (e.g., significance, clarity, relevance) into Poe Assistant to generate structured feedback.

While it efficiently populates the form with detailed justifications—like pinpointing where a paper’s experiments were underdeveloped—I often lower its overly optimistic ratings (e.g., changing “accept” to “borderline”) to align with stricter academic standards.

This hybrid approach lets me retain Poe’s thorough analysis while applying my own judgment to maintain competitive rigor.

4a. How often do you use AI tools in research? (5)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

4b. How often do you use AI tools in teaching? (5)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5a. How would you rate the general reliability of AI tools in research? (4)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 - Reliable
- 5 - Very Reliable

5b. How would you rate the general reliability of AI tools in teaching? (4)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 - Reliable
- 5 - Very Reliable

6a. How appropriate do you feel it is to use AI tools for research? (5)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 - Appropriate
- 5 - Very Appropriate

6b. How appropriate do you feel it is to use AI tools for teaching? (5)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 - Appropriate
- 5 - Very Appropriate

7ab. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, impact on student learning, data privacy issues).

### **1. Limited effectiveness in identifying novel research gaps**

- *"AI currently struggles to pinpoint truly unexplored areas because it relies on existing data. When I asked it to suggest research gaps, 90% of the ideas were already studied. It's better at compiling known information than synthesizing groundbreaking directions."*
- The interviewee acknowledges AI's tendency to surface "haystack" content rather than the "needle" of originality. While AI can aggregate suggestions from existing literature (e.g., "future research" sections of papers), its proposals often lack novelty. Fine-tuning AI to focus on "gray areas" between disciplines might improve its utility for gap identification.

### **2. Strengths lie in refining and organizing existing work**

- *"AI streamlines my workflow by helping refine drafts, structure sections, and consolidate known ideas. For instance, my students use it iteratively—section by section—to maintain focus and accuracy."*

- The interviewee emphasizes AI's value in polishing and logically organizing research, comparing it to creating a "smooth-flowing pudding" from raw materials. Targeted, small-scale applications (e.g., literature review summaries) reduce hallucination risks and align with AI's current capabilities.

### **3. Hallucination risks persist but are improving**

- *"We haven't encountered fake papers in our music therapy research, but my students still verify every AI-generated claim. Developers seem to be reducing hallucinations, which is encouraging."*
- While acknowledging progress in minimizing factual errors, the interviewee stresses the need for human oversight. Their team uses a "trust but verify" approach, treating AI as a collaborative tool rather than an autonomous authority.

### **4. Domain expertise remains critical**

- *"AI can't replace my judgment in assessing feasibility or relevance. For example, it suggested impractical experiments that I immediately dismissed. Contextual knowledge filters its output."*
- The interviewee highlights that AI's suggestions require expert vetting to separate plausible ideas from noise. Human intuition guides how AI-generated content is prioritized or discarded, especially in niche fields.

### **5. Cautious optimism about future potential**

- *"I'm hopeful that continued experimentation—like training AI on 'unknowns'—could unlock more creative applications. For now, it's a supplementary tool, not a breakthrough generator."*

- The interviewee sees promise in evolving AI systems to better handle ambiguity but stresses that innovation still hinges on human curiosity and interdisciplinary thinking.

Professor 3:

### **Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Literature Review:** AI tools face challenges in literature review due to paywalls and database restrictions.
- **Research Methodology:** AI has been transformative for interactive studies and generating research questions.
- **Data Analysis:** AI is helpful for exploratory text analysis and labeling datasets but unreliable for formal statistical tasks.
- **Writing:** AI tools assist in revising tone, phrasing, and clarity, especially for responding to reviewers.
- **Ethical Concerns:** The use of AI raises issues like data privacy, fabricated research, and transparency.

### **Elaboration:**

#### **1. Literature Review:**

I've tried using AI for literature reviews, but its effectiveness is limited by paywalls and database monitoring systems that block bots or automated tools from extracting information. For instance, when I used a reference management tool during graduate school, it worked briefly before being flagged and blocked by the system. While there are

ways to bypass these restrictions (e.g., using authentication keys), they are not widely adopted due to ethical and technical concerns.

## **2. Research Methodology:**

AI has been a game-changer for interactive studies. Tools like ChatGPT allow researchers to simulate participant interactions at a fraction of the cost of traditional methods, making such studies more accessible even to institutions with limited funding. For example, I've used ChatGPT to create scenarios where participants interact with bots, which is more engaging than static scenarios and opens up new possibilities for research methodologies.

## **3. Data Analysis:**

While I haven't extensively used AI for formal coding or statistical tasks, I see its potential in exploratory text analysis and labeling large datasets. For instance, neural networks can label instances in datasets quickly. However, I wouldn't rely on AI for straightforward statistical tests like t-tests because its numerical accuracy is still questionable.

## **4. Writing:**

In my experience, AI tools like Gemini have been invaluable for revising manuscripts and responding to reviewers. For example, when drafting responses to reviewer comments, I often write an initial version that captures my points but may come across as frustrated or impolite. Using Gemini, I can refine the tone to be professional and respectful while retaining the key arguments.

## **5. Ethical Concerns:**

The increasing use of AI raises significant ethical concerns such as data privacy breaches

and fabricated research. For example, there have been cases where proprietary data was accidentally incorporated into AI systems (e.g., Samsung developers using ChatGPT).

Additionally, the opaque nature of neural networks makes it easier for fabricated research to go undetected, emphasizing the need for transparency and monitoring.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc. (depends on what they share in Q1)?

- **Prompts for Writing Assistance:** Focus on clarity, tone improvement, and maintaining citations.
- **Prompts for Literature Review:** Summarize findings or identify gaps in existing research.
- **Prompts for Data Analysis:** Use exploratory prompts to identify patterns or themes in datasets.

**Elaboration:**

**1. Prompts for Writing Assistance:**

I've found prompts like "Make this response more compelling while maintaining accuracy and retaining in-text citations" very effective when revising manuscripts or responding to reviewers. Gemini is particularly good at improving tone and conciseness while ensuring that citations remain intact during revisions.

**2. Prompts for Literature Review:**

While I haven't extensively used AI for literature reviews due to database restrictions, useful prompts include "Summarize the main findings of this article while retaining citations" or "Identify gaps in the literature based on these abstracts." These can help streamline the review process if articles are accessible.



### 3. Prompts for Data Analysis:

For exploratory tasks in data analysis, prompts like “Label instances in this dataset based on [specific criteria]” or “Perform an exploratory text analysis to identify recurring themes” can be helpful. These prompts are particularly useful when deciding whether further manual coding or analysis is warranted.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

- ChatGPT is widely used and integrated into many platforms, making it a versatile tool for initial tasks.
- Gemini excels in handling numbers and revising writing, offering more consistent results than ChatGPT.
- Gemini may have an advantage in linguistic analysis due to its larger training dataset from Google's extensive resources.
- The effectiveness of each model depends on the specific task, with Gemini being better for numeric consistency and ChatGPT being more broadly applicable.

#### **Elaboration:**

1. **ChatGPT is widely used and integrated into many platforms, making it a versatile tool for initial tasks.**

I’ve primarily used ChatGPT because it was one of the first large language models on the market and has been integrated into many platforms. It’s a powerful tool for general tasks like coding or creating study scenarios. For example, I’ve found it helpful for generating

initial drafts or frameworks for research projects. However, its limitations become apparent when dealing with numbers or more specialized tasks.

**2. Gemini excels in handling numbers and revising writing, offering more consistent results than ChatGPT.**

In my experience, Gemini is better at tasks that involve numeric consistency or revising written content. For instance, when double-checking grading or working with numerical data, Gemini provides more reliable results compared to ChatGPT, which sometimes generates random numbers. Additionally, Gemini is particularly effective at refining writing by improving tone and clarity without losing key points.

**3. Gemini may have an advantage in linguistic analysis due to its larger training dataset from Google's extensive resources.**

I suspect that Gemini has a larger dataset for linguistic analysis because it benefits from Google's 25+ years of data from Gmail, Android, and other services. This extensive training set likely gives Gemini an edge over ChatGPT in tasks requiring deep linguistic understanding or coding related to language patterns.

**4. The effectiveness of each model depends on the specific task, with Gemini being better for numeric consistency and ChatGPT being more broadly applicable.**

While ChatGPT is versatile and widely used across different tasks, Gemini stands out for specific use cases like handling numbers or performing detailed revisions. For coding tasks, I think Gemini might also be slightly better due to its ability to assign numeric values accurately, though I'm not entirely certain about this conclusion.

4. How often do you use AI tools in research? (5)

- 1 = Never

- 2 = Rarely

- 3 = Occasionally

- 4 = Frequently

- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (3)

- 1 - Very Unreliable

- 2 - Unreliable

- 3 – Neutral

- 4 - Reliable

- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (5)

- 1 - Very Inappropriate

- 2 - Inappropriate

- 3 - Neutral

- 4 - Appropriate

- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, impact on student learning, data privacy issues).

- AI can democratize research by reducing resource constraints and enabling broader participation.

- AI poses risks of fabricated research and a lack of transparency due to the opaqueness of neural networks.
- AI could improve research quality by detecting patterns, identifying fabricated data, and aiding in idea generation.
- Data privacy issues are a major ethical concern as AI tools may inadvertently misuse sensitive information.
- AI will not replace human creativity and novelty in research but will complement it by working with historical data.

**Elaboration:**

**1. AI can democratize research by reducing resource constraints and enabling broader participation.**

I believe AI has the potential to make research more accessible to institutions with fewer resources. By acting as a confederate or research assistant, AI can help researchers perform tasks that were previously limited to well-funded universities. This could lead to a more equitable academic landscape where more people can contribute to meaningful research without being constrained by financial or logistical barriers.

**2. AI poses risks of fabricated research and a lack of transparency due to the opaqueness of neural networks.**

A significant downside of AI is its inherent opaqueness, which makes it difficult to fully understand or verify its outputs. I've already seen instances where fabricated research has been exposed in the field of AI studies, and I worry this problem will grow as people exploit these tools in an academic system that often lacks strict monitoring. While I hope

for more groundbreaking contributions than fraudulent ones, I anticipate an increase in low-quality or deceptive work due to these incentives.

**3. AI could improve research quality by detecting patterns, identifying fabricated data, and aiding in idea generation.**

On the positive side, AI might eventually be able to detect patterns in data that humans cannot see, helping identify fabricated or plagiarized work and ensuring research novelty. For example, AI's ability to synthesize vast datasets could help researchers determine whether their work is truly original or redundant. Additionally, AI could assist in generating new ideas during early stages of research, though it would still rely on human input for novelty.

**4. Data privacy issues are a major ethical concern as AI tools may inadvertently misuse sensitive information.**

Data privacy is another critical issue with AI tools. For instance, there have already been cases like Samsung developers using ChatGPT, which led to proprietary code being incorporated into the tool's training dataset. I suspect we'll see more instances like this as people unknowingly share sensitive information with these platforms. Personally, I prefer tools like Gemini because Google has a stronger track record of protecting user data compared to newer platforms.

**5. AI will not replace human creativity and novelty in research but will complement it by working with historical data.**

While AI is great at recognizing patterns in historical data, it cannot generate truly novel ideas because it lacks the ability to form impressions on things that don't already exist in its training set. This means researchers will still play a crucial role in pushing boundaries

and creating original insights while using AI as a supportive tool for analysis and synthesis.

### **Use of AI in Teaching**

1. Thinking about the different stages of teaching, such as lesson planning, assessment, or feedback, could you describe how you have used AI tools in these different teaching stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Lesson Planning:** AI is used for generating engaging visuals and checking slide summaries, though it's not yet adept at creating concise versions of lengthy presentations.
- **Teaching Methodologies:** AI is incorporated through simulations and dedicated courses to teach students how to use AI effectively and understand its potential applications and ethical implications.
- **Feedback and Assessment:** AI is used to double-check grading for missed issues and maintain student privacy, but AI feedback isn't consistently reliable and shouldn't replace human feedback.
- **Grading Concerns:** Grading consistency is paramount when grading and this isn't something AI seems to capture well.

### **Elaboration:**

#### **1. Lesson Planning:**

I've been using AI to enhance lesson planning by generating better photos and visuals to update my presentations. It's a concrete way to make slides more engaging. I also use AI to check my slide summaries, looking for ways to condense information. However, I've found that AI isn't yet capable of creating shorter versions of lengthy slide decks effectively.

## 2. Teaching Methodologies:

I integrate AI into my teaching methodologies by running simulations where students learn how to use AI in negotiations. I also teach a course on AI research and its applications. This approach helps students use AI and discuss ethical considerations, and the iterative process has led to new research projects, creating a feedback loop between teaching and research.

## 3. Feedback and Assessment:

I use AI to double-check grading and ensure I haven't missed any issues, but I've found AI isn't always reliable. In grading final papers, there were instances where AI suggested a grade that was clearly off. Therefore, I believe it's essential to do the initial grading myself and use AI only as a double-check. There were cases where it was definitely far off, so it is only used for double checking and not a replacement for original work.

## 4. Grading Concerns:

Grading consistency is a major concern when using AI for assessment. AI struggles to evaluate each assignment relative to others, which can lead to grading inconsistencies. For example, it might not account for effort or write length, potentially undermining validity. These inconsistencies make me wary of relying too heavily on AI feedback, but it doesn't mean AI can't be used at all.

2. Do you have any recommended AI prompts for teaching? (depends on what they share in Q1)?

- **Grading and Rubric Review:** AI can assist in grading tasks by uploading grading criteria and student papers, but should be carefully reviewed.
- **Visual Generation:** Prompts can create images for lessons but may require adjustments for diversity.

- **Negotiation Skills Training:** AI can assist in training for negotiations, but these prompts may be for specific use-cases.
- **Condensing Lecture Material:** AI is not yet effective at condensing lecture materials due to a lack of course context and understanding of teaching goals.

### **Elaboration:**

#### **1. Grading and Rubric Review:**

I recommend using prompts to upload grading criteria and student papers, asking AI to grade them according to the rubric. This can help double-check for any missed issues. For instance, I've used prompts like: "Please review this rubric" and "Grade these papers according to that rubric." However, I found that I still need to carefully review AI's suggestions because it can make mistakes or miss nuances, and I am still responsible for grades, in the end.

#### **2. Visual Generation:**

Generating images with prompts can enhance lesson visuals. For example, "generate a photo of two people negotiating." But these tools often default to certain demographics, so I may need to specify, "please make them Asian" or "please make it more diverse" to ensure representation in the learning materials.

#### **3. Negotiation Skills Training:**

I use specific prompts to train students in negotiation skills, such as helping them create payoff matrices. An example is "creating a payoff matrix for a negotiation". However, these prompts are highly specialized to the specific negotiation framework being taught and will likely be dependent on this.



#### 4. Condensing Lecture Material:

AI is currently ineffective at condensing lecture materials, because it doesn't understand the course's overall context and teaching goals. I've tried prompts to shorten lengthy slide decks, but AI's summaries often miss key points or emphasize less important details. For the older style slides, I may just go through them for 40 minutes that people do not have the attention span for that anymore. Thus, for the condensing of lectures, AI has not been a great help.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

- **ChatGPT:** I mainly use ChatGPT more for initial tasks and embedding in studies because it came out earlier and has more integrations.
- **Gemini:** For other purposes, I use Gemini because I trust its data privacy more and I find it even better for writing tasks.
- **Claude:** I haven't used Claude as much.

#### Elaboration:

1. **ChatGPT:** I tend to lean on ChatGPT more for experiments because it was one of the first available and is easier to embed in research studies.
2. **Gemini:** On the other hand, I trust its data privacy more than ChatGPT. In addition, I find it even better for writing-related tasks, which is why I turn to Gemini for these purposes.
3. **Claude:** I haven't explored Claude as much, which might be a mistake on my part since it could be awesome.

3.1 How do you perceive and currently utilize AI for grading, including concerns about consistency, potential improvements, and ethical considerations?

- **Grading Consistency:** It's unclear if clearing history helps with AI's grading consistency. It might be missing objectives or accurate weighting.
- **Current Grading Use:** Right now, I use it more as a "back of the envelope" check for extreme deviations to see if there's an issue, rather than a precise scoring tool.
- **Potential Refinement:** With more grading data, refining the prompts could lead to higher correlation with human grading.

**Elaboration:**

1. **Grading Consistency:** It's unclear if clearing the AI's history in grading helps with consistency. Another consideration is that the AI might be missing the objectives. It's also not weighting them accurately based on what I am prioritizing in the rubric.
2. **Current Grading Use:** So right now, instead of seeing the AI as a precise scoring tool, I use it more as a "back of the envelope" check for extreme deviations. If it catches an odd score, then it's a signal to me to further examine the paper in order to find out if there is something wrong with it.
3. **Potential Refinement:** It's possible that a better use case for this is to go back through previous assignments to help create prompts that more closely match the scoring system, but this will take a lot of time.

4. How often do you use AI tools in teaching? (3)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally

- 4 = Frequently

- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in teaching? (3)

- 1 - Very Unreliable

- 2 - Unreliable

- 3 - Neutral

- 4 - Reliable

- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for teaching? (4)

- 1 - Very Inappropriate

- 2 - Inappropriate

- 3 - Neutral

- 4 - Appropriate

- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of teaching, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, impact on student learning, data privacy issues).

- **Material Improvement:** AI tools like Copilot and Gemini will help improve teaching materials.
- **Task-Specific Acceptance:** AI grading might be more accepted in black-and-white areas like math compared to subjective essay grading.
- **Human Preference:** Despite AI's potential, students still value face-to-face interaction and personalized guidance.

- **Personal Feedback:** It is important for AI to give appropriate feedback.

**Elaboration:**

1. **Material Improvement:** I think that it will help us improve our learning materials. The AI tools such as Copilot and Gemini get, so will it become easier for students to learn.
2. **Task-Specific Acceptance:** I'm sure there are assignments that people are okay being evaluated on using. For example, it is used something that's more black and white, like math, i imagine people aren't as upset about that. But we haven't checked yet. So I'm sure there's gonna be places like that will be helpful. We're already seeing like backlash if before graded by a is of humans, but I do think that will just be self correcting all the time.
3. **Human Preference:** Despite the potential of AI to revolutionize learning, people still value face-to-face interactions and personalized guidance from instructors. I think it will help reach more students on the flip side. People really like the face to face and having someone tell them what to do.
4. **Personal Feedback:** Personal feedback needs to be appropriate for the students. This is an important consideration to make when incorporating AI tools.

8. Any Comments?

**PhD 1:**

**Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Brainstorming Research Ideas:** I use AI to explore phenomena and hypothetical scenarios through conversational exchanges, though feedback quality varies.
- **Data Collection Support:** AI helps craft and refine polite participant invitations, overcoming my challenges in creating effective outreach messages.
- **Data Processing & Translation:** AI transcribes interviews (voice-to-text), translates Korean to English while preserving colloquial tone, and corrects transcription errors.
- **Analysis Validation:** I compare my analytical frameworks with AI-generated ones and test hypothetical mechanisms by cross-checking logic with raw data.
- **Writing & Editing:** AI improves drafts paragraph-by-paragraph, enhancing flow, engagement, and academic tone through iterative prompts and revisions.

## **Elaboration**

### **1. Brainstorming Research Ideas**

I initiate AI-driven conversations to spark ideas for research questions or phenomena. For example, discussing a social trend with AI helps identify angles worth exploring. However, outputs can be overly generic ("super complying") or unoriginal, requiring me to sift through responses critically.

### **2. Data Collection Support**

When recruiting participants, I input basic drafts into AI to generate persuasive, polite messages. Iterative refinements—like adjusting tone or structure—ensure clarity and professionalism, which I struggle to achieve independently. This reduces stress and improves response rates.

### **3. Data Processing & Translation**

For Korean interview data, AI tools transcribe recordings and translate text while retaining conversational nuances (e.g., slang, jargon). Unlike Google Translate, AI adapts to context, such

as live-streaming terminology. It also corrects transcription errors, saving time on manual cleanup.

#### **4. Analysis Validation**

During qualitative analysis, I ask AI to generate alternative frameworks for coding data, then compare them to my own. While results aren't always directly usable, they act as a "side helper" to challenge assumptions. Testing hypotheses with raw data ensures my logic aligns with evidence.

#### **5. Writing & Editing**

AI transforms my rough drafts into polished academic text. I specify goals like "punchy but formal" and iterate prompts to avoid overly creative deviations. Paragraph-level edits improve clarity and engagement, though constant feedback loops are needed to maintain rigor. Without AI, completing my dissertation would've been far more arduous.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc. (depends on what they share in Q1)?

- **Paper Summarization & Critical Analysis**

I upload lengthy papers and prompt AI to extract key findings, research questions, methodological choices, and hypothesis outcomes in bullet points. I also ask about the study's theoretical foundations, literature gaps, limitations, and how it relates to my own research questions.

- **Research Question Development**

When refining my research, I ask AI to critique a paper's limitations and speculate how its authors might respond to my new research question. This helps me position my work within existing scholarship.

- **Writing & Editing Support**

I command AI to improve clarity, fix grammar, and enhance transitions in my drafts while preserving my voice. For example: *“Improve this paragraph to sound punchy yet professional. Highlight edits in bold.”* I also ask it to revise specific sentences within a larger context.

- **Emotional & Functional Engagement**

I use playful or stern language (e.g., *“Answer concisely—just yes/no”* or *“This reply is terrible, try again”*) to streamline interactions and vent frustration. For tasks like job applications, I ask AI to cross-check details (e.g., *“Does this school have undergrad programs?”*) to avoid manual searches.

## **Elaboration**

1. **Paper Summarization** saves time by distilling 30-page papers into actionable insights. By asking *“Why this method?”* or *“What’s the theoretical vision?”*, I quickly assess a paper’s relevance to my work without reading every line.
2. **Research Question Development** benefits from AI’s “outsider perspective.” Querying *“How would this paper’s authors view my research question?”* helps me anticipate critiques and strengthen my arguments.
3. **Writing & Editing** prompts ensure professionalism without losing my style. Bolded edits let me track changes efficiently, while targeted questions (*“Improve the last sentence”*) keep revisions focused.
4. **Emotional Commands** like *“No need to reply if correct”* or humorous threats (*“I’ll unsubscribe!”*) make interactions faster and more relatable, balancing productivity with personal quirks.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

4. How often do you use AI tools in research?

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research?

- 1 - Very Unreliable
- 2 - Unreliable
- 3 - Neutral
- 4 - Reliable
- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research?

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 - Appropriate
- 5 - Very Appropriate



7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, data privacy issues).

- **Exclusive personal use of Copilot for location-based tasks**

I primarily use Copilot (likely referring to Microsoft's product) for personal navigation needs like finding websites and GPS locations, but don't utilize it for academic purposes.

- **Abandonment of ChatGPT due to restrictive limitations**

I completely stopped using ChatGPT after encountering frequent unhelpful responses like "Sorry, I cannot assist with that." This pattern of refusal became particularly frustrating when seeking simple proofs or academic support, leading me to perceive it as unnecessarily restrictive.

- **Migration to Claude 3.5 Sonnet for logical rigor**

I now primarily use Claude 3.5 Sonnet based on its reputation for strong logical reasoning capabilities and writing proficiency. The model's balance of analytical depth and practical utility better aligns with my academic needs compared to other options I've tried.

**PhD 2:**

**Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

**1. Literature Review Assistance**

I use AI to generate initial theoretical frameworks and identify potential literature resources.

However, I always verify citations manually as AI sometimes suggests non-existent papers. When needing specific theoretical support (e.g., establishing why "best practices" matter), I might ask AI for reference suggestions, though it rarely provides perfectly targeted sources. The tools work better for brainstorming angles than precise citation retrieval.

## **2. Structural Design & Writing**

AI helps me organize paper sections (introduction, methodology, contributions) and adjust content proportions. After drafting core elements myself, I use it to refine language and improve flow. For methodology sections specifically, I generate AI versions to compare with my own understanding - this helps identify mismatches in emphasis and sometimes reveals new angles to incorporate.

## **3. Data Analysis & Coding**

I frequently collaborate with AI on coding tasks, particularly for:

- Generating initial code templates for specific analyses
- Troubleshooting data processing issues (e.g., unexpected results interpretation)
- Suggesting alternative methods when facing statistical constraints

Before implementation, I always research its suggestions through traditional channels to validate appropriateness. The tools prove most helpful for routine data cleaning tasks and problem-solving during technical roadblocks.

## **4. Theoretical Framework Development**

When connecting research questions to academic theories, I use AI to:

- Identify potential theoretical lenses from different disciplines
- Explore applicability of unfamiliar theories to my subject

- Bridge gaps between practical problems and academic discourse

This helps compensate for my limited theoretical knowledge in peripheral domains, though I ultimately assess feasibility through conventional academic review.

## 5. Abstract & Summary Generation

I create AI-generated abstracts/methodology summaries to:

- Cross-check my own emphasis priorities
- Surface alternative phrasing approaches
- Identify potential misunderstandings of my work

These outputs serve more as quality-control mirrors than direct usable content, helping refine communication clarity.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc.

(depends on what they share in Q1)?

- **Language Editing:** I use AI as a journal editor substitute to refine academic writing, explicitly instructing it to avoid verbosity, preserve core ideas, and maintain concise, precise language.
- **Framework Generation:** I request AI to create structured outlines for papers with multiple case studies, leveraging its ability to organize complex content logically before filling in details myself.
- **Code Assistance:** I delegate technical tasks like data visualization coding (e.g., matplotlib's `plt` syntax) to AI, as memorizing library-specific commands is challenging.
- **Paper Summarization:** I employ AI to extract key insights from lengthy research papers quickly, though results vary in quality depending on the paper's complexity.

## Elaboration

1. For **language editing**, I treat AI as a collaborative editor, giving directives like “Act as a distinguished journal editor” and specifying constraints: “Don’t alter my core ideas” or “Trim redundant phrases.” This ensures clarity while retaining academic rigor.
2. When building **frameworks**, I ask AI to draft section hierarchies (e.g., case study groupings, methodology flow) because it synthesizes structural patterns from high-quality papers effectively. I then expand these skeletons with domain-specific content.
3. For **coding**, I rely on AI to generate plotting scripts (e.g., “Help me create a boxplot using plt with custom labels”) to bypass memorizing niche syntax, accelerating visualization workflows.
4. In **paper summarization**, I use prompts like “Extract methodology, key findings, and limitations” to grasp papers faster, though I cross-check critical details manually, as AI sometimes misses nuanced arguments.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

- **Experience with GPT-4:** I’ve extensively used GPT-4 for its versatility and rich knowledge base, finding it ideal for academic writing and general tasks due to its balanced performance and comprehensive responses.
- **Claude’s structured approach:** While I tried Claude briefly (recommended for language editing), I preferred its concise, bullet-point style answers for clarity, though I found it less engaging overall.

- **Limited use of Gemini/Fou Mini:** I experimented with Gemini/Fou Mini but felt its non-English performance was weaker, and I struggled with its interface complexity and payment system frustrations.
- **Coding and niche tools:** For coding, both GPT-4 and Claude seem effective, though I haven't rigorously compared them. I've avoided image-generation tools due to their steep learning curves.
- **Preference for reliability:** I prioritize models with reliable outputs and straightforward interfaces, avoiding tools with confusing payment structures or inconsistent results.

**Elaboration:**

1. **GPT-4's versatility** makes it my go-to for academic writing and complex queries. Its responses are richly detailed yet coherent, covering diverse topics without excessive verbosity. I rely on it for synthesizing research ideas and drafting papers efficiently.
2. **Claude's structured responses** are useful for quick summaries, but I find its rigid formatting occasionally limits creative exploration. While it excels in brevity, I default to GPT-4 for deeper analytical tasks.
3. **Gemini/Fou Mini** felt underwhelming, particularly for Chinese-language tasks, and its interface design made routine workflows cumbersome. Payment models involving "credits" added unnecessary friction, deterring further use.
4. **Coding tools:** Both GPT-4 and Claude handle code snippets competently, though I lean on GPT-4 for debugging due to its clearer explanations. For now, coding isn't my primary use case, so I haven't prioritized comparisons.

5. **Interface and reliability** are critical—I avoid tools that prioritize flashy features over usability. GPT-4’s consistent performance and minimal setup keep it central to my workflow, despite newer models emerging.

4. How often do you use AI tools in research? (5)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (4)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 - Neutral
- 4 – Reliable
- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (5)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 - Appropriate
- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, impact on student learning, data privacy issues).

### **Positive Impacts**

- **Enhanced Writing and Efficiency:** AI streamlines academic writing, provides structural frameworks, and reduces repetitive tasks like literature searches.

I find AI tools particularly helpful for drafting papers and organizing ideas, saving time on tedious tasks. The interactive nature allows continuous questioning, unlike static resources like Wikipedia, making complex concepts easier to grasp through contextual explanations.

- **Interdisciplinary Accessibility:** AI lowers barriers between fields by offering quick, reliable cross-disciplinary insights.

As a researcher, I appreciate how AI helps me navigate unfamiliar domains without needing deep prior knowledge. It aggregates verified information, reducing the risk of misinformation compared to human sources—though critical verification remains essential.

- **Improved Communication Skills:** AI acts as a "second perspective," refining clarity and exposing gaps in reasoning.

Using AI to rephrase my work forces me to articulate ideas more precisely, which strengthens my communication skills. It's like having a collaborator who challenges assumptions and improves presentations or reports.

### **Negative Impacts**

- **Loss of Authorship and Style:** AI-generated content risks homogenizing academic writing, producing verbose, formulaic text.

I've noticed papers becoming longer and less original, with AI's "over-explaining" tendencies diluting personal voice. This could disadvantage early-career researchers who rely too heavily on AI templates.

- **Accuracy and Integrity Risks:** AI may introduce biased or incorrect information, especially if users skip verification.

In my own work, I've encountered AI misrepresenting sources or exaggerating claims. Without rigorous fact-checking, this could compromise research quality, particularly for those lacking academic integrity.

- **Privacy and Practical Limitations:** Concerns about data leaks, AI detection tools, and inconsistent outputs hinder trust.

I worry about submitting AI-assisted work to journals due to privacy risks and unclear ethical standards. Additionally, AI sometimes "forgets" prior instructions, requiring constant re-prompting, which can frustrate users.

### **Neutral/Observed Trade-offs**

- **AI Detection Debates:** Tools to identify AI-generated text lack reliability, raising questions about future academic norms.

While AI detection is a hot topic, I doubt it'll become a fair standard—it's too easy to game. The focus should shift toward how we adapt, not penalize.

- **Ethical Gaps:** The interviewee acknowledges but sidelines deeper ethical issues like bias or access inequality.



I recognize ethical concerns exist but haven't personally grappled with them. For now, AI's practicality overshadows abstract dilemmas.

**PhD 3:**

**Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

**1. Initial Evidence Gathering**

- Used AI (e.g., ChatGPT) to identify real-world case studies and examples (e.g., "labor system changes in specific countries").
- Cross-verified AI-suggested examples to confirm authenticity, prioritizing factual accuracy over recency.
- Leveraged AI's ability to surface sources or contextual details to assess credibility during early-stage research scaffolding.

**2. Literature Review Comprehension**

- Inputted confusing academic passages into AI to compare my interpretation with its analysis.
- Avoided AI-generated writing, focusing instead on clarifying jargon, complex sentences, or ambiguous arguments.
- Treated AI as a "second reader" to resolve uncertainties before synthesizing literature.

**3. Technical Troubleshooting in Data Analysis**

- Relied on AI for R coding assistance, especially when unfamiliar with functions or debugging errors.
- Described desired outcomes to AI (e.g., "How to reshape this dataset?") and iteratively refined its code suggestions.
- Used AI to bridge knowledge gaps in statistical workflows, saving time on manual troubleshooting.

#### 4. Verification and Validation

- Systematically fact-checked AI outputs (e.g., case studies, historical claims) through external databases or academic sources.
- Valued AI's ability to flag potential sources, but always vetted them for relevance and reliability.
- Balanced AI efficiency with critical scrutiny, ensuring outputs aligned with research goals.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc.

(depends on what they share in Q1)?

- **Simplifying complex literature:** I use direct prompts to break down academic text into simpler terms, asking for summaries and plain-language explanations of specific paragraphs.
- **Academic writing refinement:** I instruct AI to act as a management researcher, focusing on improving grammar, sentence structure, and academic tone in my drafts.
- **Generating and troubleshooting code:** For R-based data tasks, I describe panel data variables and goals (e.g., creating lagged variables) to generate initial code, then troubleshoot errors by sharing code snippets for fixes.

- **Preference for GPT-3.5 over 4.0:** I avoid GPT-4 due to its over-sensitivity and occasional misinterpretations, finding GPT-3.5 more reliable for straightforward tasks with minimal fine-tuning.
- **Iterative verification of outputs:** I cross-check AI-generated results (e.g., code functionality or text edits) to ensure alignment with my intent, even if outputs initially appear successful.

## Elaboration

1. When tackling dense academic papers, I ask the AI to rephrase jargon-heavy sections into conversational language. This helps me grasp core ideas without getting lost in complex phrasing. For example, I'll paste a confusing paragraph and say, "Summarize this in simpler terms and highlight the main argument."
2. For writing, I specify roles like "Act as a management researcher to refine this passage for academic rigor" to ensure edits align with disciplinary standards. This prompts the AI to adjust syntax, replace informal phrases, and fix grammatical issues while preserving meaning.
3. In R coding tasks, I outline my dataset structure and desired outcome (e.g., "Generate code to flag companies without R&D in the prior year"). If errors arise, I share the faulty code and ask, "Explain why this failed and suggest a fix." For optimization, I request alternatives like, "Simplify this code using a more efficient package."
4. While GPT-4 occasionally misinterprets prompts or overcomplicates outputs, GPT-3.5 handles basic tasks reliably. I avoid vague instructions and stick to concise, step-by-step requests to minimize errors.

5. Despite AI's efficiency, I manually verify results. For instance, after generating code, I test subsets of data to confirm variables work as intended, guarding against "silent failures" where outputs seem correct but aren't.
3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?
- **Primary use of ChatGPT for R code modification and verified information searches:**  
I primarily rely on ChatGPT (especially GPT-4) for refining R code and retrieving information requiring credible sourcing. Tools like Gemini were tested over a year ago but abandoned due to similarities with ChatGPT's output and no added value.
  - **GPT-4's superiority in accuracy over GPT-3.5:** When working with R, GPT-4 consistently avoids generating non-existent or flawed code—a frequent issue with GPT-3.5. Its deeper contextual understanding reduces errors in technical tasks.
  - **Timeliness vs. accuracy trade-off:** While GPT-4 lacks post-2021 data, I prioritize its reliability over newer models for most tasks. For time-sensitive queries, I occasionally use other tools but remain cautious about their factual consistency.
  - **Skepticism toward LLMs' creative and academic reliability:** I avoid relying on these models for literature reviews or content creation due to their tendency to fabricate sources. They serve as summarization aids, not authoritative producers of original ideas.
  - **LLMs as supplemental tools requiring human validation:** Even for R code adjustments, I cross-verify outputs manually. Their role is assistive, not foundational, in my workflow—a time-saving layer rather than a standalone solution.

## Elaboration

My experience centers on **GPT-4** for its precision in technical tasks like R programming, where hallucinated code from GPT-3.5 proved disruptive. While alternatives like Gemini were explored, their outputs felt redundant compared to ChatGPT's ecosystem. I consciously tolerate GPT-4's knowledge cutoff because its structured reasoning outweighs the need for real-time data in most scenarios.

However, **trust barriers persist**. Whether synthesizing academic references or generating creative content, I've observed LLMs prioritize plausibility over accuracy, necessitating rigorous fact-checking. This limitation confines their utility to supporting roles—accelerating drafts or troubleshooting code—but never unsupervised execution.

Ultimately, my workflow treats LLMs as collaborators, not replacements. Their value lies in accelerating iterative processes, but final accountability rests on human oversight, especially in technical or research-driven contexts.

4. How often do you use AI tools in research? (5)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (3)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 – Reliable

- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (4)

- 1 - Very Inappropriate

- 2 - Inappropriate

- 3 - Neutral

- 4 – Appropriate

- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, data privacy issues).

- **Enhanced Efficiency in Academic Production:** AI drastically accelerates research processes, reducing tasks like data analysis from weeks/months to days.
- **Ethical Risks and Misinformation Spread:** AI enables unethical practices like data manipulation and fake citations, threatening academic integrity.
- **Reducing Language Barriers and Inequality:** AI democratizes access by bridging language gaps for non-native English speakers.
- **Homogenization of Academic Writing:** AI risks standardizing research papers into formulaic, impersonal templates.
- **Stifling Creativity and Exploration:** Overdependence on AI may limit curiosity-driven inquiry and boundary-pushing ideas.

**Elaboration:**

1. As a researcher, I've seen AI tools like R streamline workflows—generating complex code or analyses in days instead of weeks. This efficiency shortens research cycles,

enabling faster publication and iteration. However, while speed benefits progress, it risks prioritizing quantity over depth, potentially oversaturating fields with rapid but superficial outputs.

2. I worry about AI's potential misuse—altering statistical significance, generating fabricated references, or producing convincing but false conclusions. These actions could propagate misinformation if undetected, eroding trust in published work. Rigorous verification mechanisms are critical, but current peer-review systems may struggle to keep pace with AI-generated fraud.
3. As a Chinese researcher, AI helps me parse dense English texts and draft polished manuscripts, mitigating my linguistic disadvantages. This levels the playing field, allowing global scholars to contribute more equitably. Still, over-reliance on AI-generated language risks diluting cultural nuances in academic discourse.
4. I fear AI will erase unique writing styles, especially in qualitative fields like management studies, where narrative flair enhances clarity and engagement. While structured formats aid reproducibility, overly rigid templates could stifle creativity, making research feel sterile and detached from human insight.
5. AI's "knowledge boundaries" constrain its suggestions to existing data patterns. For many researchers, this creates a feedback loop where they only explore AI-endorsed ideas, discouraging unconventional hypotheses. While top scholars might transcend these limits, average researchers risk becoming complacent, slowing innovation in the long term.

**PhD 4:**

#### **Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Literature Review:** I generally don't use AI for literature reviews.
- **Idea Generation:** I mainly use AI, specifically Ark, to brainstorm and find practical examples for my research direction.
- **Writing Assistance:** Sometimes, I use AI to refine my writing, checking for grammatical errors or inappropriate word choices.

**Elaboration:**

1. **Literature Review:** I generally avoid using AI for literature reviews because it often generates fabricated references that cannot be found through traditional search methods.
2. **Idea Generation:** I primarily leverage AI tools like GPT during the idea-finding stage. My field requires identifying practical, real-world examples, and GPT helps me gather potential cases. However, you need to independently verify the information's authenticity.
3. **Writing Assistance:** At times, I turn to AI for writing refinement. I use it to help me to check for grammatical errors or inappropriate word choices to improve the quality and clarity of my work.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc.

(depends on what they share in Q1)?

- **General Writing Prompts:** For daily writing, I recommend prompts focused on clarity and logical structure.
- **Evidence Verification for Ideas:** I would ask AI to help find facts related to ideas.

**Elaboration:**



1. **General Writing Prompts:** Since I am not at the stage of paper writing yet, I am not totally sure. For the writing stage, if you want your writing to be logical and clear, you can tell the AI to "Make this more Clear logically."
2. **Evidence Verification for Ideas:** Since, as previously mentioned, AI is not helpful for literature review. I would instead now ask it to find evidence for the ideas. If I have come up with a potential thing I want to do with AI, I would ask "What evidence to you have that \$idea is accurate or useful"
3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?
  - **Indirect Knowledge:** From what I've *heard* from other researchers, Gemini's accuracy is improving.
  - **GPT Information:** They say that GPT excels at giving detailed information.
  - **Frustrations Reported:** I've also heard complaints about Gemini sometimes refusing to answer certain questions.

**Elaboration:**

1. **Indirect Knowledge:** I haven't had direct experience with Gemini, *but* from what I've *heard* from other researchers in the AI field, its accuracy has been improving lately. Some of them mention that it seems to "hallucinate" less than ChatGPT in certain situations, but it might not always give you the right details.
2. **GPT Information:** And as they've stated "I've heard GPT excels at giving detailed responses, especially if you want to talk about specific products.

3. **Frustrations Reported:** On the downside, I've heard some people complaining about Gemini's reluctance to answer questions, and others mention not always being able to use a different function as an advantage.

4. How often do you use AI tools in research? (3)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (4)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 – Reliable
- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (4)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 – Appropriate
- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, data privacy issues).

- **Positive Impact:** I believe AI's increasing use will positively impact research.
- **Efficiency Gains:** AI can make the research process more efficient for me.
- **Critical Evaluation:** I will need to carefully evaluate the information it provides.

**Elaboration:**

1. **Positive Impact:** Overall, I see the rise of AI in research as a positive development. I'm excited about the possibilities it unlocks.
2. **Efficiency Gains:** The main reason for my optimism is the potential for increased efficiency. I think AI can help me to streamline various aspects of my research workflow, saving time and effort.
3. **Critical Evaluation:** However, I'm also aware of the potential downsides and the importance of exercising caution. It's crucial to remember that AI is a tool, and like any tool, it can be misused. Specifically, I recognize that I need to critically evaluate the information it provides and need to double-check its accuracy before relying on it. I wouldn't rely on AI to just use information that I don't understand or have not verified myself.

**PhD 5:**

**Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?

If not, (are there any areas where you see potential for AI tools to be beneficial?)

- **Literature Review:** AI is used to extract important ideas and keywords.
- **Coding:** GPT is used to generate initial code, followed by debugging.
- **Writing:** AI is used for grammar checking and sentence revision.

**Elaboration:**

- **Literature Review:** When I'm dealing with a lot of literature, I find it helpful to upload the text to AI and have it extract the key ideas and keywords. Then I can configure and copy/paste the content to use.
- **Coding:** In my computer science work, I start by telling GPT my ideas and what I want the code to do. The AI then generates some initial code, which I use as a starting point. From there, I carefully debug the code to get it working correctly.
- **Writing:** For writing, I mostly rely on AI to refine my work. I find it particularly useful for checking my grammar and helping me rephrase sentences that I'm struggling to articulate clearly. I might be able to express it to the AI better so that it can help me.

2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc.

(depends on what they share in Q1)?

- **Literature Review:** No specific prompts recommended.
- **Data Analysis (Coding):** Clear problem statement, copy/paste errors, user judgment.
- **Writing:** Emphasize clarity and cumulative memory of prompts.

**Elaboration:**

1. **Literature Review:** I'm not comfortable giving prompts for literature review due to AI's unreliability in generating accurate references; therefore, I don't have specific prompts to recommend in this area.

2. **Data Analysis (Coding):** While I use GPT for coding, I don't have specific prompt recommendations beyond clearly stating my ideas and what I want the code to accomplish. When I use AI to debug, I usually rely on error messages reported by the coding system itself. I copy and paste the error information directly into the AI platform. I also recommend using your best judgments during debugging, as "It's just that his (AI's) coding habits are different from your own."
3. **Writing:** I think it would be helpful to emphasize the importance of clarity in prompts, as well as ensuring that it retains cumulative memory. Also, to require consistency in the writing part, so it doesn't change every time you give it a prompt.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

- **ChatGPT:** Good for talking and writing, but not always correct.
- **Gemini:** Great with Google stuff, works with pictures and sounds.
- **Claude:** Really smart, good for coding and hard questions.

Elaboration:

1. **ChatGPT:** You know, ChatGPT is good for just talking, writing stories and stuff. It can sound like a real person, which is kind of cool. But you can't always trust what it says! You might need to ask it a few times to get it right, because it's not 100% correct.
2. **Gemini:** Gemini is good if you use Google a lot, since it just works with those services. It is said to also work well with real-time information retrieval and tasks requiring text with visual data which sounds useful.

3. **Claude:** Claude, I have also read, is really smart, if I were to guess, I would say it might be the best for coding. It does better than ChatGPT on tests, and that it is more safer to use which sounds beneficial.

4. How often do you use AI tools in research? (4)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally
- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (3)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 – Reliable
- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (3)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 – Appropriate
- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, data privacy issues).

- **Easier Start:** AI helps with generating initial drafts and quick summaries.
- **Faster Learning:** AI explains concepts quickly, saving time.
- **Potential Downsides:** Less independent thinking, over-reliance.

**Elaboration:**

1. **Easier Start:** I think the biggest thing for young scholars is that AI is like a cheat code at the beginning. Like, if they're stuck on writing a paper, they can get AI to generate a draft, or get a quick summary. The beginning is the hardest, so at least it can give a foundation for the young scholars.
2. **Faster Learning:** When studying, lots of resources are mostly easier white courses. They just need to learn it. So it would save a lot of time for young scholars.
3. **Potential Downsides:** I am worried that the young scholars may be less independent to think. Also when doing teamwork with other students, they may rely too much on AI and don't learn anything. So don't depend on AI too much so that you don't need to understand and deduce yourself.

**PhD 6 & 7:**

**Use of AI in Research**

1. Thinking about the different stages of research, such as literature review, data analysis, or writing, could you describe how you have used AI tools in these different research stages?  
If not, (are there any areas where you see potential for AI tools to be beneficial?)

1. **Literature Review:** I use AI to summarize articles and extract key points, making the process more efficient.
2. **Data Analysis:** AI is particularly helpful in quantitative research, especially for coding in R when provided with clear logic and variable names.
3. **Writing:** I rely on AI for grammar checks and revising my ideas to improve clarity and expression.

**Elaboration:**

1. **Literature Review:** When conducting a literature review, I often feel overwhelmed by the sheer volume of papers. To manage this, I upload PDFs to an AI platform, which summarizes the main points and highlights keywords. This approach saves me time and helps me quickly identify relevant information without reading every paper in detail.
  2. **Data Analysis:** Although my research primarily focuses on organizational behavior, I recognize the potential of AI in quantitative research. For example, when working with R, AI can perform coding tasks effectively if I provide clear instructions about the logic and variable names. This has been a valuable tool for streamlining my data analysis process.
  3. **Writing:** Writing is the stage where I use AI the most. I frequently rely on AI tools to check my grammar and refine my ideas. When I struggle to articulate my thoughts, I ask AI to revise my sentences, which often results in clearer and more polished writing. However, I always double-check the edits, as AI isn't always accurate.
2. Do you have any recommended AI prompts for literature review, data analysis, or writing etc. (depends on what they share in Q1)?



- **Literature Review Prompts:** I recommend asking AI to "summarize the key findings" or "highlight the main arguments" for efficient literature review.
- **Data Analysis Prompts:** For quantitative research, I suggest providing AI with clear instructions about the calculating logic and variable names, especially when working with tools like R.
- **Writing Prompts:** When using AI for writing, I suggest double-checking grammar edits, as AI isn't always accurate.

### **Elaboration:**

1. **Literature Review Prompts:** For literature reviews, I find it helpful to be specific with AI prompts. I usually ask the AI to "summarize the key findings" or "highlight the main arguments" from the articles. This approach ensures that I get concise and relevant information without having to read through entire papers, which saves me a lot of time.
2. **Data Analysis Prompts:** Although my research primarily focuses on organizational behavior, I recognize the potential of AI in quantitative research. For example, when working with R, I provide AI with clear instructions about the calculating logic and variable names. This allows AI to perform coding tasks effectively, which has been a valuable tool for streamlining my data analysis process.
3. **Writing Prompts:** When using AI for writing, I often ask it to revise my sentences for clarity and grammar. However, I always double-check the edits because AI isn't always accurate. For example, if I'm unsure how to phrase an idea, I'll ask AI to reword it, but I make sure to review the suggestions to ensure they align with my intended meaning. This process helps me improve my writing while maintaining control over the final output.

3. Of the major large language models currently available, such as ChatGPT, Gemini, and Claude, do you have any experience working with them? If so, could you share which model you find most effective and explain your reasoning?

1. **Preferred Models:** I have experience using ChatGPT and Gemini.
2. **GPT Strengths:** I find GPT better for coding tasks.
3. **Gemini Advanced Strengths:** Gemini excels in creative writing and provides more human-like, intelligent conversations, though it makes more mistakes than GPT.

**Elaboration:**

1. **Preferred Models:** Among the major large language models, I have worked with ChatGPT and Gemini. These tools have been integral to my research process, each offering unique strengths depending on the task.
2. **GPT-4-Turbo Strengths:** For coding tasks, especially in quantitative research using tools like R, I find GPT more effective. It performs well when I provide clear instructions about the logic and variable names, making it a reliable tool for streamlining my data analysis process.
3. **Gemini Advanced Strengths:** Gemini stands out in creative writing and general conversations. It feels more human-like and intelligent, which helps me refine my writing and express ideas more clearly. However, I've noticed it tends to make more mistakes compared to GPT, so I always double-check its outputs for accuracy.

4. How often do you use AI tools in research? (5)

- 1 = Never
- 2 = Rarely
- 3 = Occasionally

- 4 = Frequently
- 5 = Very Frequently

5. How would you rate the general reliability of AI tools in research? (4)

- 1 - Very Unreliable
- 2 - Unreliable
- 3 – Neutral
- 4 – Reliable
- 5 - Very Reliable

6. How appropriate do you feel it is to use AI tools for research? (5)

- 1 - Very Inappropriate
- 2 - Inappropriate
- 3 - Neutral
- 4 – Appropriate
- 5 - Very Appropriate

7. How do you think the increasing use of AI will impact the future of research, both positively and negatively? (e.g., ethical considerations, accuracy of generated information, data privacy issues).

- **Positive Impact:** I believe AI will accelerate the research process, making tasks like summarization and grammar editing more efficient.
- **Negative Impact:** I worry about the reliability of AI-generated information and potential data privacy violations, especially in fields like organizational behavior involving sensitive interview data.

**Elaboration:**

1. **Positive Impact:** I think the increasing use of AI will significantly speed up the research process. For example, AI tools can quickly summarize articles, check grammar, and refine writing, which saves me a lot of time and effort. This efficiency allows researchers to focus more on critical thinking and analysis rather than tedious tasks.
2. **Negative Impact:** However, I also have concerns about the reliability of AI-generated information. For instance, AI sometimes hallucinates or produces inaccurate summaries, which can be misleading. Additionally, in fields like organizational behavior, where research often involves sensitive interview data, uploading such content to AI platforms raises serious privacy issues. I believe these ethical considerations need to be addressed to ensure responsible use of AI in research.