Prompt Engineering for EAP

Or: EAP for Prompt Engineering

Charles Lam – LC Forum

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UNIVERSITY OF LEEDS

Overview

1. What is Prompt Engineering and why you are already experts
2. Live Demonstration of AI and ‘Human-in-the-Loop’
    - Demo 1: Generating Textual Responses
    - Demo 2: Audio and Visual Materials
    - Demo 3: Image and Video Generation
3. Agentic AI
    - Demo 4: Configuring Your Own Agent and Helper
4. Further Resources

Prompt Engineering

Prompt: The input and instructions passed to agents

Completion: The output generated in response to prompts

Model: The underlying statistical engine trained on massive datasets to generate language by predicting the most likely next word (or ‘token’) based on patterns in the data.

Agent: In computer science, it refers to entities that acts, with or without volition.

Prompt Engineering

Somes definitions:

- '[Prompt engineering] focuses on **developing and optimizing prompts** to effectively utilize large language models (LLMs).' (Giray, 2023)
- 'The key to prompt engineering is **designing prompts** for downstream tasks, which guide the pre-trained model to perform the desired task.' (Wang et al., 2025)
- 'By offering a mechanism to fine-tune model outputs through carefully crafted instructions, **prompt engineering enables these models to excel across diverse tasks and domains**. This adaptability is different from traditional paradigms, where model retraining or extensive fine-tuning is often required for task-specific performance.' (Sahoo et al., 2024)
- Prompt engineering is the art and science of **designing and optimizing prompts to guide AI models**, particularly LLMs, towards generating the desired responses. (Google Cloud, 2026)

Leveraging EAP Knowledge

Google / Kaggle **Prompt Engineering** Whitepaper:
`https://www.kaggle.com/whitepaper-prompt-engineering`

See also Kaggle intensive course on GenAI:
`https://www.kaggle.com/learn-guide/5-day-genai`

Prompting Step	For AI	EAP Expertise
Task	Defining the Action	Genre knowledge
Context	Targeted Background	Needs and context analysis
References	Provide desired output	Selecting authentic exemplars
Evaluate	Analyzing AI's output	Critical evaluation of texts
Iterate	Refining the prompt continuously	Process writing; reflective editing

Additional Skills to Interact with Machines

Chain-of-Thought Prompting

Instruct AI to process step-by-step, while breaking down a complex problem into a logical sequence before providing the final answer.

- ‘Evaluate this paragraph by cohesion. First, identify the transition words and connectives. Second, explain how each one connects the ideas. Finally, suggest improvements for better flow.’
- ‘What do we call it when a text is more casual than it should be?’

  ...

  ‘Correct. Now give me an example.’

  ...

  ‘Good. Now give me another 15.’

Additional Skills to Interact with Machines

Metaprompting

Using an AI to design, refine, or debug its own prompts, i.e. ask AI to produce prompts, not the final product.

Particularly useful for more complex tasks that require longer prompts.

- Write a prompt for an AI agent that produces materials for English lessons. Instruct the agent to focus on logical relations between paragraphs in a text. Produce excecise on fallacy analysis. Make suggestions to include further information and sources. Be comprehensive in your prompt.

Edit and iterate the process!

Additional Skills to Interact with Machines

Using references

Provide the AI with one or more high-quality examples / exemplars to set a specific standard for tone, structure, or formatting.

- ‘Review my conference abstract following this sample. Provide critical feedback as a computational linguist. Use the same scoring system.’

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================================================================================
                                REVIEWER #2
================================================================================

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Reviewer's Scores
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                      Appropriateness (1-5): 4
       Originality / Innovativeness (1-5): 4
            Soundness / Correctness (1-5): 4
              Meaningful Comparison (1-5): 3
                     Recommendation (1-5): 3
                Reviewer Confidence (1-5): 3

Detailed Comments
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This paper presents an annotation and analysis of the rhetorical organization of
scientific paper introductions, here papers in various fields of biology (10 papers
in each of 5 sub-fields). This is seen as an empirical testing of the classical
CARS model which posits a certain number of argumentative steps in paper
introductions. The introduction is an interesting part of the paper as it is
considered difficult to write, and understanding of how they are written could be
beneficial for teaching.

The annotation consists in labeling each sentence of an introduction following CARS
categories ("moves" or "steps"), and the analysis describes the most frequent steps
and step-sequences.

This is an interesting and original study in the field of discourse analysis. The
parallel visualization of all introductions in the annex is nice as a synthesis.
This is only a preliminary study so it is understandable this is mainly
descriptive, and that there is no attempt to see if the categories could be
predicted automatically for instance (the corpus is rather small). Still, there
could have been an estimation of the difficulty of annotating the categories, with
a double annotation and some inter-annotator agreement measure for instance.
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Demo 1: Generating Textual Responses

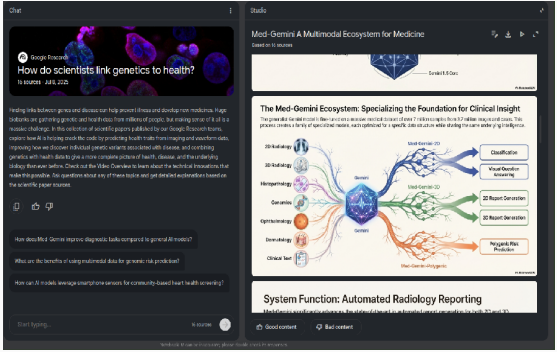
1. Suppose we're trying to create a proofreading task. First, try a lazy, single line prompt and see what you can get.
2. Start a new chat.
   Apply these skills to elicit better response, how would you do that?
   - Chain-of-Thought Prompting
   - Metaprompting
   - Using references
3. Compare the outputs.

Demo 2: Audio and Visual Materials

Visit NotebookLM:

- `https://notebooklm.google.com/` to generate Podcast summaries or presentation-style audio / visual guides
- You will need a Google account.

The generation takes a while!



Demo 3: Image and Video Generation

Go to MS CoPilot

- ‘Create’ on the left
- ‘Create an image’ (or just play with the default functions)
- ‘Create a video’

An example form Notebook LM

Impact of feline AIM on the susceptibility of cats to renal disease

Renal failure is one of the most important social problems for its incurability and high costs for patients' health care. Through clarification of the underlying mechanism for the high susceptibility of cats to renal disease, we here demonstrates that the effective dissociation of serum AIM protein from IgM is necessary for the recovery from acute kidney injury (AKI). In cats, the AIM-IgM binding affinity is 1000-fold higher than that in mice, which is caused by the unique positively-charged amino-acid cluster present in feline AIM. Hence, feline AIM does not dissociate from IgM during AKI, abolishing its translocation into urine. This results in inefficient clearance of lumen-obstructing necrotic cell debris at proximal tubules, thereby impairing AKI recovery. Our findings could be the basis of the development of novel AKI therapies targeting AIM-IgM dissociation, and may support renal function in cats and prolong their lives.

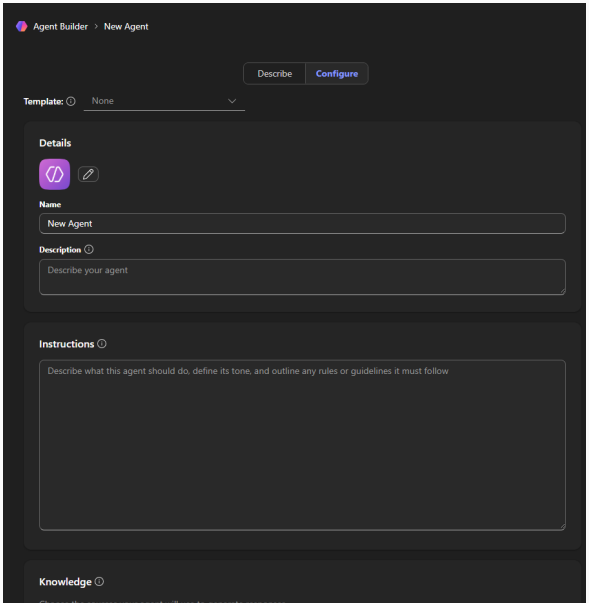
- Original paper: `https://www.nature.com/articles/srep35251`
- Generated podcast & video

Configuring Your Own Agent and Helper

- Go to MS CoPilot.
- `Agents` (on the left) → `New Agent`
- Provide examples ('reference' for the Agent in a `prompt-completion` pair)

Agent	System Instruction	EAP Skill
Hedging Detector	'Analyze the modality of the input. Identify 'bald' claims and suggest three levels of academic hedging (cautious, moderate, strong).'	**Pragmatic competence** (Understanding stance and authorial voice)
Move-Structure Analyzer	'Using Swales' CARS model as a reference, identify the 'moves' in this abstract. Highlight any missing steps (e.g., establishing a niche).'	**Genre analysis** (Applying structural frameworks to academic texts)
AWL Contextualizer	'Identify 5 words from the Academic Word List (AWL) in the text. Provide a disciplinary-specific definition and two new example sentences.'	**Lexical range** (Expanding vocabulary within specific academic contexts)

Configuring Your Own Agent and Helper



- `Describe` vs `Configure`
- `Configure` allows more technical instructions (e.g. top-P; temperature [lower temperature / 0 = more deterministic]) See the Prompt Engineering Whitepaper: `https://www.kaggle.com/whitepaper-prompt-engineering`
- Similar tools:
  - Google AI Studio
  - Vertex AI Studio
  - Huggingface Spaces

Curated Prompt Banks

- **GenAI academic prompt bank, University of Sheffield** https://sheffield.ac.uk/study-skills/digital/generative-ai/prompt-bank
- **Kent AI Propmt Bank** https://student.kent.ac.uk/studies/using-generative-ai-in-your-studies/prompt-bank.
- **OpenAI Prompt Packs** https://academy.openai.com/public/tags/prompt-packs-6849a0f98c613939acef841c

Other Productivity Tools

- Automatic weekly digest sent to email
- Building and maintaining private bibliography database (removing duplicates in database, adding missing information)
- Oral exam scheduler that handles restrictions and clashes

Closing: The Future of the EAP Practitioners

- AI doesn't change what 'good writing' is. After all, text generation (predicting the next words) is everything in 'writing'. It just makes our role in teaching it more essential than ever.
- Similarly, word processors and spellcheckers does change teachers' role, but they do not replace teachers.
- For academic research, even with elaborate AI-powered tools (e.g. AlphaFold), researchers still need to decide what makes useful / meaningful research for our purpose.

References

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