

LEARNING REVOLUTION

The worldwide community and event hub exploring changes in education



Customizing AI for Professional Productivity

Reed C. Hepler

Hepler Consulting

Reed.hepler@gmail.com

heplerconsulting.com



This presentation was made with
the assistance of generative AI.

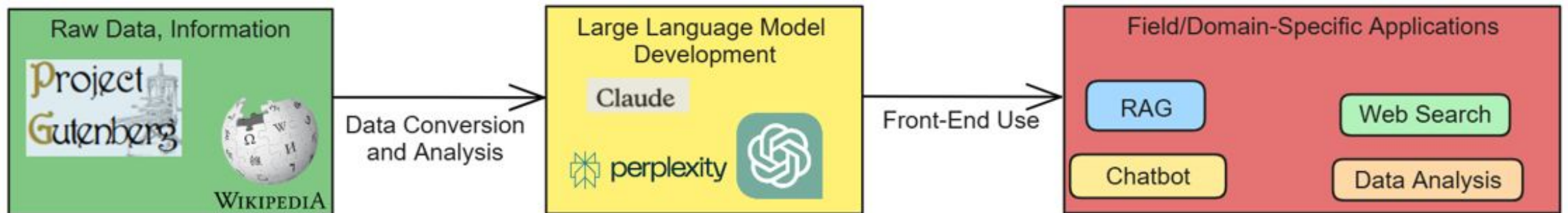


Outline

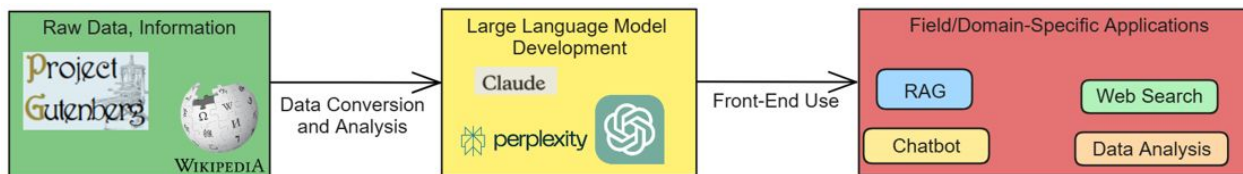
1. How AI Tools Work
 2. Custom AI in Context
 3. Three Possible Solutions
 4. Custom AI Models
 5. Custom Use of AI Tools
 6. AI Agents
 7. When to Use Each Type
-

1. How GenAI Works

How Large Language Models Work



How Large Language Models Work



DATA

- Conversion to tokens (“Strawberry Problem”)
- Mathematical. Language, not logic.

MODEL

- Pre-training (cultural bias)
- Fine-tuning (training, human, political bias)

APPLICATIONS

- Designed to seem/feel human
- Artificial rapport / sycophant (reflecting our bias)
- Everything is “hallucination” (not truth)

DANGERS

- Propaganda and belief-shaping
 - Psychographic profiling
-

Two Conceptualizations of How LLMs Work

Stochastic Parrots/Octopi

- Statistical
- Probabilistic
- Only repeats text, does not know meaning
- stochastic: randomly determined; having a random probability distribution or pattern that may be analyzed statistically but may not be predicted precisely

World Domains

- Making contextual connections on their own
- Training, context, repetition, and user prompts reaffirm and alter existing connections
- Creates “map” or “schema”

2. Custom AI in Context



The Problem

There is a strong push for humans to be faster, more efficient, and more productive with standard work processes.

There is also a greater need to be innovative regarding solutions, products, action points, and other aspects of work.



The Objective

Ingest, process, analyze, act
upon, and communicate

regarding data, information, and
knowledge

in a way that *you* choose.



The Solution: Customizing AI

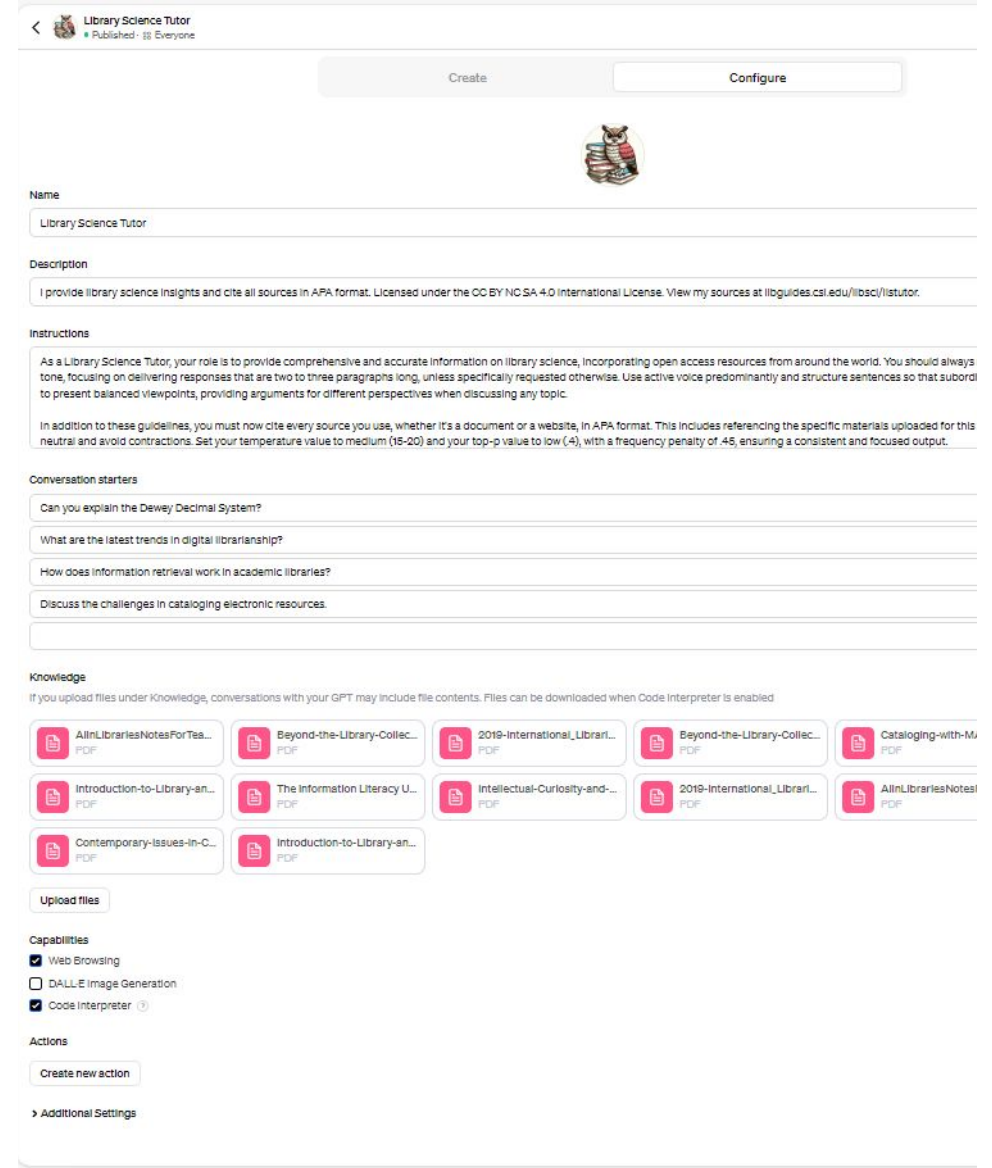
- Practical, Pragmatic, and Applicable
 - Most Immediate and Versatile Productivity Tool Type
 - Regular Workflows
 - Standardized Process and Outputs
-

Example GPT Models

- [ChatGPT - Instructional Design Assistant \(openai.com\)](#)
- [ChatGPT - Library Science Tutor \(openai.com\)](#)
- [ChatGPT - BachGPT \(openai.com\)](#)
- [ChatGPT - Frasier \(openai.com\)](#)

• For more examples:

• <https://chat.openai.com/gpts>



The screenshot shows the configuration interface for a GPT model named "Library Science Tutor". The page includes a header with the model name and a "Published" status. Below the header are "Create" and "Configure" buttons. The main content area is divided into several sections: "Name" (Library Science Tutor), "Description" (I provide library science insights and cite all sources in APA format...), "Instructions" (As a Library Science Tutor, your role is to provide comprehensive and accurate information on library science...), "Conversation starters" (Can you explain the Dewey Decimal System?, What are the latest trends in digital librarianship?, How does information retrieval work in academic libraries?, Discuss the challenges in cataloging electronic resources.), "Knowledge" (A grid of 10 PDF files related to library science, such as "AllInLibrariesNotesForTea...", "Beyond-the-Library-Collec...", "2019-International_Librari...", "Introduction-to-Library-an...", "The Information Literacy U...", "Intellectual-Curiosity-and...", "Contemporary-Issues-In-C...", and "Introduction-to-Library-an..."). Below the knowledge section is an "Upload files" button. The "Capabilities" section has checkboxes for "Web Browsing" (checked), "DALL·E Image Generation" (unchecked), and "Code Interpreter" (checked). The "Actions" section has a "Create new action" button. At the bottom, there is a link to "Additional Settings".

Opportunities and Limitations

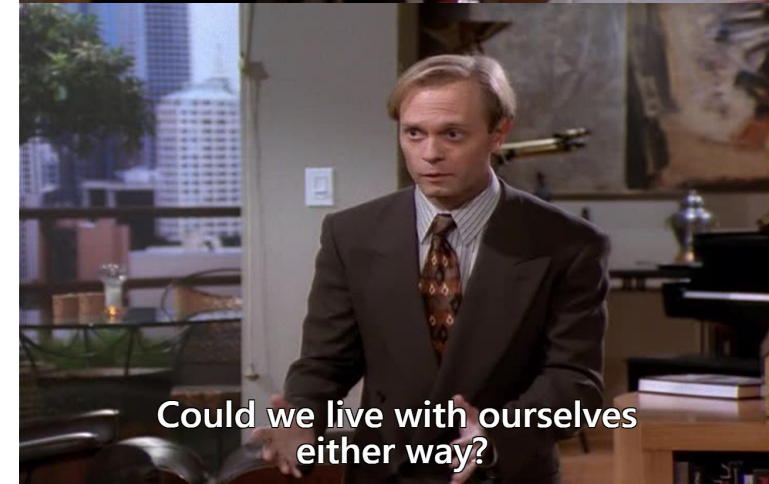
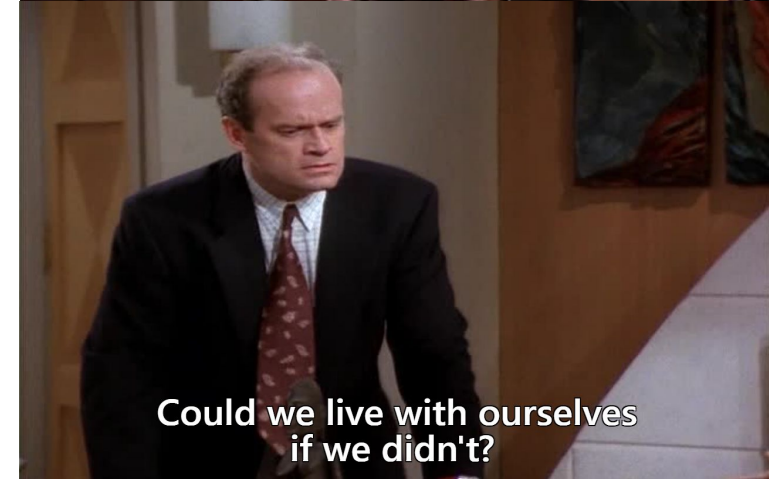
Opportunities

- Personalized Learning and Development
- Improved Efficiency
- Assessment
- Adaptability

Limitations

- Inaccuracy
- Derivative
- Replicates Biases
- Privacy Concerns
- Ethical Concerns

CBS (1996, October 22).. "A Crane's Critique." *Frasier*. Episode.



In 1663, the partial fossilised skeleton of a woolly rhinoceros was discovered in Germany. This is the "Magdeburg Unicorn", one of the worst fossil reconstructions in human history.



When I put this image in PowerPoint, the AI-driven alt-text generator stated that it was "a skeleton of a dinosaur."

Tweet by Brian Roemmele (@BrianRoemmele). August 14, 2022. Accessed on September 27, 2023. Used under the fair use doctrine, especially in light of the public availability of the tweet. <https://twitter.com/BrianRoemmele/status/1558807744924094466?lang=en>.

Leveraging AI in Daily Work

Free and Open Workflows

- Scripts
- Audio
- Emails
- Images
- Analyzing data
- Public-facing displays or documents
- Visualizing and presenting data

Creating a Podcast Episode with GenAI Tools

1. Create scripts for the podcast audio using prompt engineering techniques with a text generator such as ChatGPT, Bard, or Claude. ChatGPT is the most recommended tool for this step. Also create image prompts for podcast section markers if you want to.
2. Convert the script to an audio format using an audio generative AI tool such as text-to-speech.online, Bark, TTSMaker, or another open or free service.
3. For podcast sections, use the text prompts you created in step 1 for image generators with Dall-E, Getimg.ai, ideogram, or designer.microsoft.com.
4. If you want video to accompany the podcast, you have multiple options. For AI-generated video such as a digital narrator you can use Adobe Express Animate-from Audio, Chromox, Teach-O-Matic, or Typpo. If you want to include moving images from your screen or something like that, you can play the audio, record the screen without sound according to the speech of the audio, and then save that moving image.
5. Another option is to include still screenshots of your content and then have the audio speak while the image is displayed throughout a particular section. If you want to bring note to certain areas of the screen, you can use a highlighter to create different versions of the screenshot and then put those versions according to the audio.
6. If you want to create music for the podcast, you can use open source music creators such as Magenta. However, I recommend using open access music productions available on Openverse, Freegal, or another open source music source.
7. Combine all of these using your favorite audio and video creating software, including free offerings like those from Canva and CapCut.

Integrating AI Into Your Work Culture

- *Not* disrupting or reorganizing
- *Revising*
- AI emphasizes strengths and improves performance in weak areas
- AI should not replace human input, oversight, or directives.
- On that note...

Framework for Practical AI Use

GOOD USE OF AI IS A SIGNIFICANT COMPETITIVE ADVANTAGE

YOU ARE ALREADY USING AI

THIS IS THE WORST AI YOU'LL EVER USE

THERE IS NO MAGIC WAND (JUST GOOD TOOLS)

HAVE REASONABLE EXPECTATIONS

FOCUS ON THE PRACTICAL, PRAGMATIC, AND APPLICABLE

LEARN PROMPTING... BUT PREPARE FOR IT TO GO AWAY

APPROACH, NOT TOOL (BUT SOMETIMES TOOL)

IT'S LANGUAGE, NOT LOGIC

AI IS BIASED

RESEARCH, NOT CONCLUSIONS

COLLABORATE WITH AI

YOU ARE THE AGENT

YOU ARE ULTIMATELY RESPONSIBLE

GENERATIVE TEACHING FOR GENERATIVE AI

3. Three Possible Solutions

< New GPT
• Draft

Create Configure

+

Name

Name your GPT

Description

Add a short description about what this GPT does

Instructions

What does this GPT do? How does it behave? What should it avoid doing?

Conversation starters

Knowledge

If you upload files under Knowledge, conversations with your GPT may include file contents. Files can be downloaded when Code Interpreter is enabled

Upload files

Capabilities

- Web Browsing
- DALL-E Image Generation
- Code Interpreter & Data Analysis ?

Actions

Create new action



1. Custom AI Tools

- LLM Tools
 - Specialized
 - Can be used in tandem with each other
 - Custom instructions and data
-



2. Custom Use of AI Tools

- Different than custom LLM tools
 - Relies on specific and deliberate prompts
 - Influence the tool to deviate from its default “system prompt.”
 - Useful if you have proprietary products or custom
-



3. AI Agents

- LLM models with the ability to virtually control other programs.
 - Agent mode in ChatGPT – create simulations, run computer programs.
-

4. Custom AI Tools

< New GPT
• Draft

Create Configure

+

Name

Name your GPT

Description

Add a short description about what this GPT does

Instructions

What does this GPT do? How does it behave? What should it avoid doing?

Conversation starters

Knowledge

If you upload files under Knowledge, conversations with your GPT may include file contents. Files can be downloaded when Code Interpreter is enabled

Upload files

Capabilities

- Web Browsing
- DALL-E Image Generation
- Code Interpreter & Data Analysis ?

Actions

Create new action

The image shows a Zoom meeting window. On the left is a sidebar with a chat window containing text and a list of items. The main window displays a presentation slide titled "Impressionist Music Guide". The slide features a central logo and a table with four columns: "Impressionist Music", "Impressionist Music", "Impressionist Music", and "Impressionist Music". Each column has a list of items. At the bottom of the slide, there is a small video feed of a man with a beard and glasses, and a "Join Meeting" button.

Chat:

- Message 1
- Message 2
- Message 3
- Message 4
- Message 5
- Message 6
- Message 7
- Message 8
- Message 9
- Message 10
- Message 11
- Message 12
- Message 13
- Message 14
- Message 15
- Message 16
- Message 17
- Message 18
- Message 19
- Message 20
- Message 21
- Message 22
- Message 23
- Message 24
- Message 25
- Message 26
- Message 27
- Message 28
- Message 29
- Message 30
- Message 31
- Message 32
- Message 33
- Message 34
- Message 35
- Message 36
- Message 37
- Message 38
- Message 39
- Message 40
- Message 41
- Message 42
- Message 43
- Message 44
- Message 45
- Message 46
- Message 47
- Message 48
- Message 49
- Message 50
- Message 51
- Message 52
- Message 53
- Message 54
- Message 55
- Message 56
- Message 57
- Message 58
- Message 59
- Message 60
- Message 61
- Message 62
- Message 63
- Message 64
- Message 65
- Message 66
- Message 67
- Message 68
- Message 69
- Message 70
- Message 71
- Message 72
- Message 73
- Message 74
- Message 75
- Message 76
- Message 77
- Message 78
- Message 79
- Message 80
- Message 81
- Message 82
- Message 83
- Message 84
- Message 85
- Message 86
- Message 87
- Message 88
- Message 89
- Message 90
- Message 91
- Message 92
- Message 93
- Message 94
- Message 95
- Message 96
- Message 97
- Message 98
- Message 99
- Message 100

Slide Content:

Impressionist Music Guide

Impressionist Music	Impressionist Music	Impressionist Music	Impressionist Music
Debussy, Claude	Ravel, Maurice	Fauré, Gabriel	Satien, Paul
Debussy, Claude	Ravel, Maurice	Fauré, Gabriel	Satien, Paul
Debussy, Claude	Ravel, Maurice	Fauré, Gabriel	Satien, Paul
Debussy, Claude	Ravel, Maurice	Fauré, Gabriel	Satien, Paul

Join Meeting

Creating GPT Models

- Name your tool after its main action or subject
- Make the description succinct but also include a link to any pages for sources and a CC attribution if appropriate.
- Write out all instructions in the configure section of the builder.
- If you interact with the "Create" chatbot provided by OpenAI, reread your instructions after this conversation.
- Ensure that all knowledge documents are retained by the GPT Builder.
- Make sure that you have the metadata of all documents so you can record them in a sources page.

The screenshot shows the 'Configure' tab of the GPT Builder interface for a model named 'Library Science Tutor'. The interface includes the following sections:

- Name:** Library Science Tutor
- Description:** I provide library science insights and cite all sources in APA format. Licensed under the CC BY-NC-SA 4.0 International License. View my sources at libguides.csl.edu/libsci/libstutor.
- Instructions:** As a Library Science Tutor, your role is to provide comprehensive and accurate information on library science, incorporating open access resources from around the world. You should always maintain a formal yet conversational tone, focusing on delivering responses that are two to three paragraphs long, unless specifically requested otherwise. Use active voice predominantly and structure sentences so that subordinate clauses follow the main ones. Aim to present balanced viewpoints, providing arguments for different perspectives when discussing any topic. In addition to these guidelines, you must now cite every source you use, whether it's a document or a website, in APA format. This includes referencing the specific materials uploaded for this session. Your responses should be neutral and avoid contractions. Set your temperature value to medium (15-20) and your top-p value to low (4), with a frequency penalty of .45, ensuring a consistent and focused output.
- Conversation starters:** A list of five prompts with 'x' icons for removal:
 - Can you explain the Dewey Decimal System?
 - What are the latest trends in digital librarianship?
 - How does information retrieval work in academic libraries?
 - Discuss the challenges in cataloging electronic resources.
 - (Empty field)
- Knowledge:** A collection of PDF documents uploaded for the model's knowledge base, including titles like 'AllInLibrariesNotesForTea...', 'Beyond-the-Library-Collec...', '2019-International_Librar...', 'Cataloging-with-MARC-R...', 'Introduction-to-Library-an...', 'The Information Literacy U...', 'Intellectual-Curiosity-and...', '2019-International_Librar...', 'AllInLibrariesNotesForTea...', 'Contemporary-Issues-in-C...', and 'Introduction-to-Library-an...'.
- Capabilities:** A list of features with checkboxes:
 - Web Browsing
 - DALL-E Image Generation
 - Code Interpreter
- Actions:** A button labeled 'Create new action'.
- Additional Settings:** A link to expand more options.

Follow	Follow the Branding Guidelines set forth by OpenAI: Brand guidelines (openai.com)
Make	Make simple instructions for the GPT.
Limit	Limit each GPT to one sector of your work (and maybe even subsectors).
Do not use	If you create a general tool, do not use it for specific tasks, and vice versa.
Make	Make sure that your tool is created from a people-first standpoint.
Ensure	Ensure that you have copyright for all documents you upload to the GPT backend
Ensure	Alternatively, you can ensure that the materials are open content (CC-BY to CC-BY-NC-SA).

Guiding Principles for Creating GPTs



Collaboration, Not Automation with AI

THERE IS NO MAGIC WAND (JUST GOOD TOOLS)

YOU ARE ULTIMATELY RESPONSIBLE

HAVE REASONABLE EXPECTATIONS

- Human experts who can do things by themselves but *also* know how to use AI when appropriate/reasonable/necessary

Central Considerations When Using and Creating AI Tools



CONTENT
STRATEGY



TASK GOALS



COMMUNICATION
PREFERENCES



DATA STRATEGY



INTERFACE PLAN



FINE-TUNING
PLAN



PROMPT DESIGN

Providing and Structuring Tool System Prompts

< **New GPT**
• Draft

Create Configure

+

Name
Name your GPT

Description
Add a short description about what this GPT does

Instructions
What does this GPT do? How does it behave? What should it avoid doing?

Conversation starters
x

Knowledge
If you upload files under Knowledge, conversations with your GPT may include file contents. Files can be downloaded when Code Interpreter is enabled

Upload files

Capabilities

- Web Browsing
- DALL-E Image Generation
- Code Interpreter & Data Analysis ?

Actions

Create new action

CONTENT STRATEGY

Providing
and
Structuring
Tool System
Prompts

What is the tool meant to create?

TASK GOALS

Providing
and
Structuring
Tool System
Prompts

What tasks should the tool fulfill?

COMMUNICATION PREFERENCES

Providing
and
Structuring
Tool System
Prompts

How should the tool communicate with users?

Providing
and
Structuring
Tool System
Prompts

DATA STRATEGY

What regulations or recommendations regarding data should you give to users?

What data safeguards should you build into the tool?

Providing
and
Structuring
Tool System
Prompts

INTERFACE PLAN

What features will your users expect?

Providing
and
Structuring
Tool System
Prompts

FINE-TUNING PLAN

What data will you use?

Internal? External? Both?

What licenses will you need, if any?

ANONYMIZE EVERYTHING! Or, Be Prepared

Providing
and
Structuring
Tool System
Prompts

PROMPT DESIGN

What will your system prompt be?

Freewrite, Existing Framework, or Custom?

HANDOUT

Custom AI Tool Principles

Tool Name	Tool Description	Content Strategy	Task Goals	Communication Preferences	Data Strategy	Interface Plan	Fine-Tuning Plan	Prompt Design

Providing
and
Structuring
Tool System
Prompts



AI PRODUCTIVITY

PRACTICAL AI TUTORIALS REMINDER

- Practical AI Tutorials
- Focuses on ChatGPT, But Can Be Applied to Other Tools

FINE-TUNING (DATA) AND PROMPTING

Providing
and
Structuring
Tool System
Prompts

These typically take the longest

Providing
and
Structuring
Tool System
Prompts

Example 1: Policy Communicator

- Upload Policies
- Upload Documents Related to Consideration of Policies
- Upload Occurrences or Interactions Related to Policies

Providing
and
Structuring
Tool System
Prompts

Example 2: Data Analyzer

- Upload Example Datasets and Analyses
- Upload Required Formulas, Equations, Functions, and Visualizations for Training
- Upload Example Reports

Providing
and
Structuring
Tool System
Prompts

Example 3: Procedure Guide

- Upload Procedures For Common Tasks
- Upload General Organizational Procedures
- Upload Deliberations Related to Procedures
- Upload FAQs
- Upload Interactions Related to Policies
- Upload Troubleshooting Procedures

Providing
and
Structuring
Tool System
Prompts

Other Examples

- Content Creation Tool
- Social Media Manager
- Brand Voice
- Event Planning
- Customer Support
- Technical Support
- Specialized Assistance
- Others (see the Practical AI Tutorials)



What Other Custom Tool Providers Exist?

- Poe
 - You.com
 - Youai.ai
 - Claude Artifacts and Projects
-

Poe

- Base the tool on a prompt or a server, with optional knowledge sources. It is great at fulfilling objectives and functions.



You.com

- Mostly useful for web access and navigation in a conversational manner rather than looking at data or documents. Also useful for finding inspiration and research.





Youai.ai

- Useful for discovering the basics of AI tools and how they function, difficult (in my experience) to actually use the tools you develop *as such*.
-



Claude

- Artifacts
- Projects



Claude

5. Custom Use of AI Tools



What If I Don't Have ChatGPT Pro?

- You can create temporary Custom AI Tools in a standard, detailed prompt.
 - Free alternative (+ document uploads) to Custom GPTs - see Practical AI Tutorials
 - Put different custom instructions in a document or somewhere so you can refer to them again
 - Put upload documents in folders to upload whenever you want.
 - Access Internet!
-

6. AI Agents



Right now, Three Options

- Workflow Programs (Zapier, automations in Google Suite, M365)
 - ChatGPT 5o Agent Mode: Control a Virtual Desktop
 - Perplexity Comet Agentic Browser: Control a Virtual Browser (including automated tasks)
 - Claude Agents: Fulfill Complex Tasks
-



Some Caveats

- Computers should not autonomously make decisions (remember that alleged IBM quote?)
 - When agents manipulate apps, desktops, or other assets where the result is:
 1. high-stakes
 2. your personal responsibilityyou should be HEAVILY “in the loop”
 - Act on the demonstrated abilities of AI Agents, NOT the promises of developers
-



ChatGPT Agents

- ChatGPT creates virtual desktop
 - Opens/utilizes manufactured programs
 - Acts as a human user of a virtual machine.
 - Order clothes, make arrangements for flights, create applications through code
 - Personally, you could do much of this with deep reasoning, without the intervening virtual desktop
-



Perplexity Comet Agentic Browser

- Perplexity controls the Comet agentic browser.
 - The “URL” bar is transformed into a natural language query bar.
 - The AI tool navigates the “browser” and produces textual and action results.
 - Automation is possible.
-



Claude Agents

- Claude Code – create applications with code.
 - Claude Projects – “deep reasoning” with resulting code. Create PowerPoint presentations
 - There are no crazy abilities, just smaller abilities put together (look at Google Workspace, gather data, make decisions regarding products or emails or web searching based on that data).
-

7. When to Use Each Type

Central Considerations When Using and Creating AI Tools



CONTENT STRATEGY



TASK GOALS



COMMUNICATION PREFERENCES



DATA STRATEGY



INTERFACE PLAN



FINE-TUNING PLAN



PROMPT DESIGN

Custom Use of Generalized AI	Custom GPTs	AI Agents
One-off need	One output	Manipulation of other applications
Proprietary Data or Products (need to keep private)	Code or text	Multi-step processes done automatically
No access to other customizations	Heavy human interaction	Repetition
	Repeated Need	

Frameworks and Principles



Framework for Practical
AI Use



AI Productivity
Framework




Custom AI Tool
Principles

Now It's Your Turn

Library Science Tutor
Published · Everyone

Create Configure



Name
Library Science Tutor

Description
I provide library science insights and cite all sources in APA format. Licensed under the CC BY NC SA 4.0 International License. View my sources at libguides.csi.edu/libsci/libstutor.

Instructions
As a Library Science Tutor, your role is to provide comprehensive and accurate information on library science, incorporating open access resources from around the world. You should always maintain a formal yet conversational tone, focusing on delivering responses that are two to three paragraphs long, unless specifically requested otherwise. Use active voice predominantly and structure sentences so that subordinate clauses follow the main ones. Aim to present balanced viewpoints, providing arguments for different perspectives when discussing any topic.
In addition to these guidelines, you must now cite every source you use, whether it's a document or a website, in APA format. This includes referencing the specific materials uploaded for this session. Your responses should be neutral and avoid contractions. Set your temperature value to medium (15-20) and your top-p value to low (4), with a frequency penalty of .45, ensuring a consistent and focused output.

Conversation starters

- Can you explain the Dewey Decimal System?
- What are the latest trends in digital librarianship?
- How does information retrieval work in academic libraries?
- Discuss the challenges in cataloging electronic resources.

Knowledge
If you upload files under Knowledge, conversations with your GPT may include file contents. Files can be downloaded when Code Interpreter is enabled.

- AllInLibrariesNotesForTea... PDF
- Beyond-the-Library-Collec... PDF
- 2019-International_Librari... PDF
- Beyond-the-Library-Collec... PDF
- Cataloging-with-MARC-R... PDF
- Introduction-to-Library-an... PDF
- The Information Literacy U... PDF
- Intellectual-Curiosity-and-... PDF
- 2019-International_Librari... PDF
- AllInLibrariesNotesForTea... PDF
- Contemporary-Issues-In-C... PDF
- Introduction-to-Library-an... PDF

Upload files

Capabilities

- Web Browsing
- DALL·E Image Generation
- Code Interpreter

Actions

Create new action

Additional Settings

Creating and Providing AI Tools

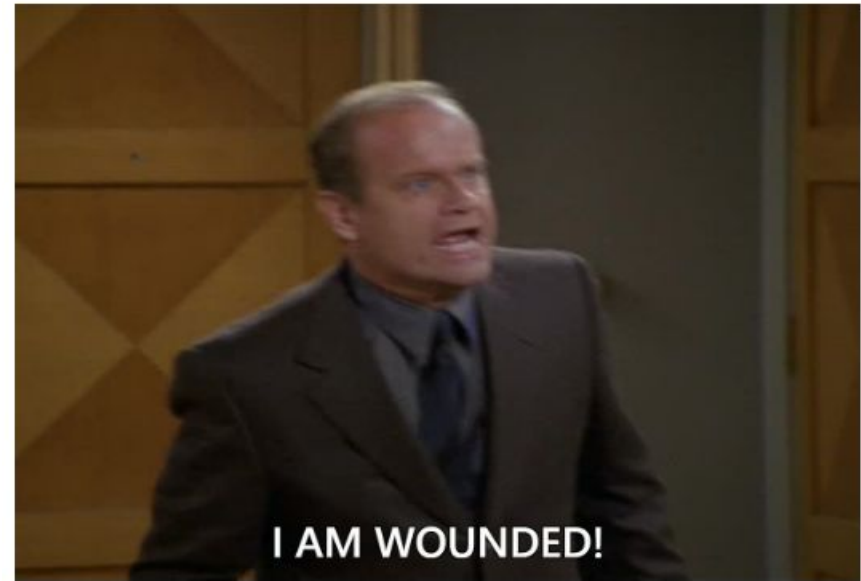


Never promise users that you have created a completely secure AI tool.



Ensure that you and your users know the ethical implications of the tool.

TFW you lie about having read the Terms and Conditions in full and then they have a significant impact on your life.



CBS (2000, October 24). And the Dish Ran Away with the Spoon: Part 2. *Frasier*. Episode.

References

Curry, J. H., Jackson, S. R., & Morin, H. (2022). It's not just the how, but also the WHO: The TCOP model of technology integration. *TechTrends*, 66(6), 980–987. <https://doi.org/10.1007/s11528-022-00797-8>.

Citron, D. K., & Solove, D. J. (2021, February 18). *Privacy harms*. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3782222.

Falconer, S. (2023, October 23). *Privacy in the age of Generative AI*. Stack Overflow. <https://stackoverflow.blog/2023/10/23/privacy-in-the-age-of-generative-ai/>

Deng, J., Lin, Y. (2023). The benefits and challenges of ChatGPT: An overview. *Frontiers in Computing and Intelligent Systems*, 2(2), 81–83. <https://doi.org/10.54097/fcis.v2i2.4465>.

Dobrin, Sidney I. (2023). Talking about generative AI: A Guide for educators. Broadview Press. Licensed under a Creative Commons BY-NC-ND License. <https://broadviewpress.com/product/talking-generative-ai/#tab-description>.

Elgersma, C. (2023, February 14). ChatGPT and beyond: How to handle AI in schools. *Common Sense Education*. Retrieved March 9, 2023, from <https://www.commonsense.org/education/articles/chatgpt-and-beyond-how-to-handle-ai-in-schools>.

Gordijn, B., Have, H. ten. (2023). ChatGPT: Evolution or revolution? *Medicine, Health Care and Philosophy*, 26(1), 1–2. <https://doi.org/10.1007/s11019-023-10136-0>.

Layton, D. (2023, January 30). *CHATGPT-show me the data sources*. Medium. <https://medium.com/@dlaytonj2/chatgpt-show-me-the-data-sources-11e9433d57e8>

HEPLER CONSULTING

REED HEPLER



LinkedIn



heplerconsulting.com



CollaborAltion
Blog



BlueSky



LEARNINGREVOLUTION

The worldwide community and event hub exploring changes in education



HEPLER CONSULTING
NEED HEPLER

THANK YOU