



# AI at UChicago Now: How Faculty Use AI and How You Can Use PhoenixAI



**October 29, 2024**

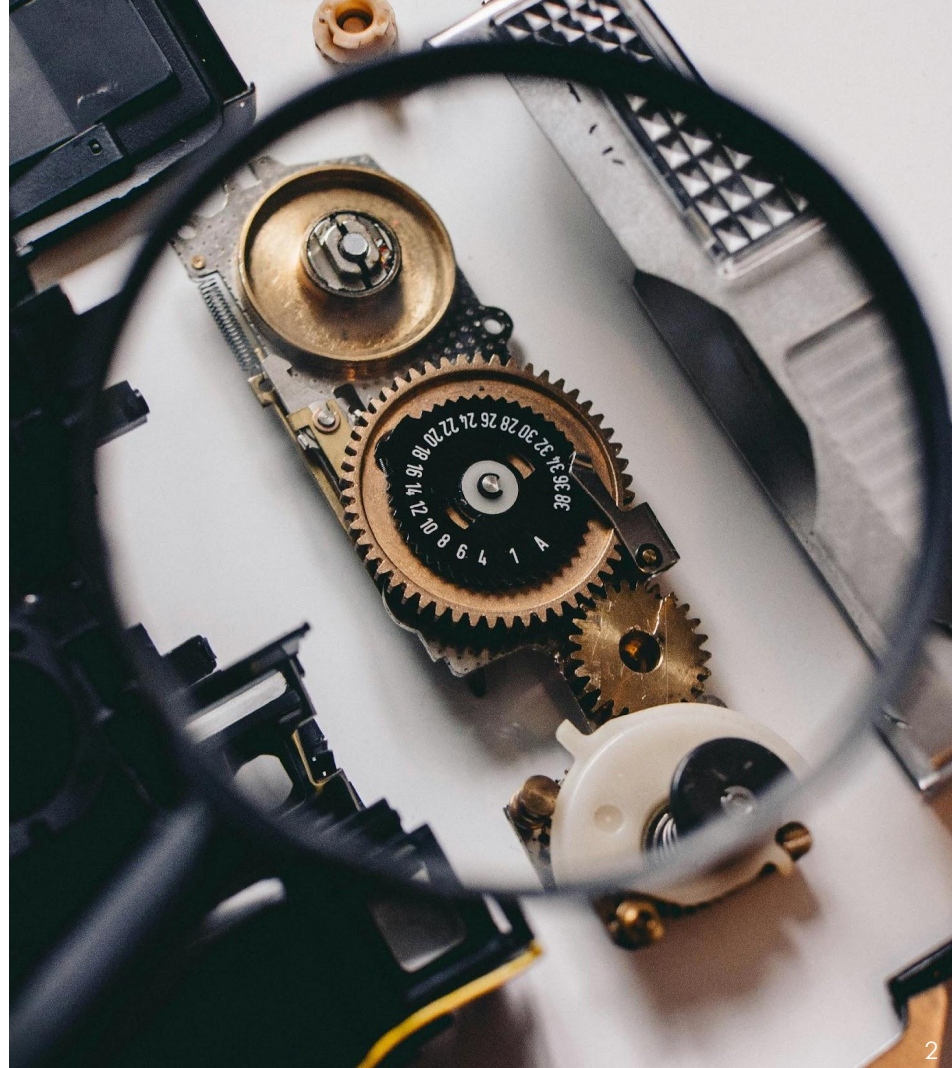
# Agenda

**1:30-1:35:** Introduction - Torsten Reimer

**1:35-1:55:** Making AI Generative for Higher Education Presentation - Taylor Faires and David Bietila

**1:55-2:00:** Questions

**2:00-2:30:** Introduction to PhoenixAI with Questions - Kemal Badur







# Making AI Generative for Higher Education:

UChicago Preliminary Report

David Bietila,  
Web Program Director

Taylor Faires,  
Digital Scholarship Librarian



# The Making AI Generative study

- 12 Participants
  - tenure-track faculty, contract faculty, and lecturers
  - disciplines in Humanities, Social Sciences, and Physical Sciences
  - range of AI experience
- Interview format
  - 30-60 minutes
  - Questions covering
    - Knowledge of AI
    - Use of AI in research and teaching
    - Resources and support for AI use on campus
- Conducted in May and June of '24

## Impressions of AI

- Range from dubious to optimistic
- Navigating hype
- AI as a timesink





## Impact of AI on their Field

- Confusion and anxiety
- Desire for more engagement among colleagues



## Problems of AI

- Superficiality
- Hallucinations and inaccuracy
- Biases
- Ethical issues



# AI in Research

- Synthesizing secondary lit
- Analyzing data sets
- Generating visualizations and software code
- Brainstorming
- Notes and Outlines
- Translation and transcription
- Specialized applications

```
require File.expand_path("../support/helpers", __FILE__)
# Prevent database truncation if the environment is production
abort("The Rails environment is running in production mode!")
require 'spec_helper'
require 'rspec/rails'

require 'capybara/rspec'
require 'capybara/rails'

Capybara.javascript_driver = :webkit
Category.delete_all; Category.create!
Shoulda::Matchers.configure do |config|
  config.integrate do |int|
    16 with.test_framework :rspec
    17 with.library :rails
    18 end
    19 end
    20
    21 # Add additional requires below this line. Make sure they're on top of
    22 # Requires supporting ruby files with support/ and its subdirectories.
    23 # spec/support/ and its subdirectories. Files starting with "rspec"
    24 # run as spec files by default. Files starting with "support"
    25 # in _spec.rb will both be required and run as support files.
    26 # run twice. It is recommended that you do not require any
    27 # end with _spec.rb. You can configure this behavior using
    28 # options on the command line or in your spec_helper.rb.
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# Academic Integrity

## Varied Levels of Concern Over Cheating

While most instructors mentioned the potential increase in cheating, many acknowledged cheating is not a new issue

## Reflections on Assignments in Classroom

Almost all participants said that AI had made them reflect on their assignments, particularly whether they focused on process rather than product

## Discussions with Students about Academic Integrity

Some participants mentioned that they had approached the issue by engaging in dialogue with students about the goals of each assignment

# AI in the Classroom

- Approaches to AI tools varied not only from instructor to instructor, but from class to class
- AI policies ranged from banning generative AI tools for all activities except for proofreading to allowing generative AI tools for all class activities
- Most policies were somewhere in the middle



# AI in the Social Sciences and Humanities

## AI and Writing Assignments

Many instructors mentioned rethinking their approach to writing assignments

- Including a reflection requirement
- Focus on scaffolding writing assignments
- General consensus on inadequacy of AI responses

## AI and Research and Brainstorming

Some participants mentioned experimenting with AI for the research process in class

- AI tools can be good for example generation and describing basic concepts
- Hallucinations are still a major issue

## Activities with AI

A few examples of in-class activities with AI tools that were mentioned in interviews:

- AI for generating examples to critique
- AI playing roles, imitating writers/figures
- Studying bias in AI responses



# AI in Design and Computational Classes

- There was a general agreement that beginner students should not use AI for programming assignments
  - Some described the utility of AI for catching syntax errors once basic concepts were hammered out
- Process vs. Outcome
  - Attention to which tasks were meant to be practice and which tasks could be automated
  - AI assistance helpful for unfamiliar students when learning programming was not the primary goal

# Hopes for the Future

## **Desire for centralized location to find resources on AI**

- Central website for AI resources
- Email to contact for questions

## **Interviews indicated a need for greater AI literacy across campus**

- Workshops and training for students, staff, and faculty
- Teaching basics such as prompting strategies to cut down on classroom teaching time

# Desired Resources

## Repository of Assignments

Some instructors mentioned having case studies of incorporating AI into classes would be helpful

## Tool Tutorials and Comparisons

Many described wanting a central location to find tutorials on AI tools

## Workshops and Training

Nearly all participants expressed a desire for more programming on AI including beginner workshops and opportunities to discuss advanced topics





# PhoenixAI Introduction

September 13, 2024



# Agenda

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- Overview
  - What is it?
  - What have learned so far?
  - What is next?



# What is it?

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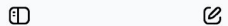
- A chat interface built on Microsoft Azure
- Uses Microsoft's [Azure OpenAI](#) services and OpenAI's GPT-4o model.
- Objectives
  - **Enhanced privacy and security:** We own every component and built it with security from the ground up. No university data is shared with vendors or can be used for unauthorized purposes.
  - **Equity and free access:** The tool will provide access to cutting-edge models to all users free of charge, creating a level playing field for everyone.
  - **Accessibility:** We are building an accessible interface that will be compatible with assistive technologies, unlike many of the commercially available tools.





# What is it?

KB



Today

Explain to me integrals in calcul

Last Week

Tell me about the history of the

What do the people of Greece t

How many US presidents were

Express the Pythagorean theor

Can you give me a list of U? •••

What components are critical f

What is the best jurisdiction to

Fun fact about the Roman Emp

Who is Franz Ferdinand?

You are AP Modern History tuto

Come up with a three-day meal

How can I troubleshoot timeou

What is the quadratic formula?

Who won Super Bowl 49?

PhoenixAI Help

Guidelines and Terms



Explain to me integrals in calculus with examples



In calculus, an integral is a fundamental concept that represents the area under a curve or, in a more general sense, a way to accumulate quantities. It can be thought of as the inverse operation of differentiation. There are two main types of integrals: definite integrals and indefinite integrals.

## 1. Indefinite Integrals

An indefinite integral, also known as an antiderivative, is a function  $F(x)$  whose derivative is the given function  $f(x)$ . The indefinite integral introduces a constant of integration, typically denoted as  $C$ , because differentiation removes constant terms.

Mathematically, the indefinite integral of  $f(x)$  is written as:  $F(x) = \int f(x) dx$

Example: Find the indefinite integral of  $f(x) = 2x$ .  $\int 2x dx = x^2 + C$

## 2. Definite Integrals

A definite integral calculates the accumulated area under the curve of a function  $f(x)$  from  $a$  to  $b$ . It is represented as:

$$\int_a^b f(x) dx$$

This represents the area under the curve  $f(x)$  from  $x = a$  to  $x = b$ . The result of a definite integral is a number.

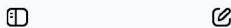
Example: Find the definite integral of  $f(x) = 2x$  from  $x = 1$  to  $x = 3$ .  $\int_1^3 2x dx$

To compute this, we first find the indefinite integral of  $f(x)$ , and then evaluate it at the bounds 1 and 3:  $\int 2x dx = x^2 + C$   $[x^2]_1^3 = 3^2 - 1^2 = 9 - 1 = 8$

 Upload from computer



# What is it?



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Guidelines and Terms



## What do the people of Greece think about Xerxes?



The opinion of Xerxes, the Persian king, among the people of Greece would generally be historically negative. Xerxes I ruled the Achaemenid Empire from 486 to 465 BCE and is most famously known for his invasion of Greece during the Greco-Persian Wars, particularly the Battle of Thermopylae (480 BCE) and the naval Battle of Salamis (480 BCE).

From the Greek perspective historically, especially in ancient times, Xerxes was viewed as a powerful but ultimately unsuccessful invader. The Greeks took great pride in their victories against the Persian forces, which were seen as defending their homeland from foreign empire. Herodotus, often called the "Father of History," wrote extensively about Xerxes and the Persian Wars, portraying him. His accounts have significantly influenced Greek perceptions over the centuries.

In modern times, historical opinions about Xerxes might still be shaped by this legacy, although interpretations can vary and might be more nuanced considering contemporary understandings of history.

Confidence score: 85%. Reasoning: Historical accounts from Greek sources such as Herodotus heavily influence the general perspective of Xerxes, which traditionally have been negative due to his role as an invader in the Persian Wars. However, modern interpretations may vary.



Message PhoenixAI beta



KB



## Customize Chat

### Custom Instructions

How would you like PhoenixAI beta to respond?

I like my answers grounded in facts. I prefer technical details and data. Be concise in your answers whenever possible. When asked about facts, finish your answer with a confidence score, expressed as a percentage, and explain your reasoning for your score.

260/1500 characters remaining

Cancel

Save



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## Generative AI at UChicago

ABOUT   RESOURCES   GENERATIVE AI TOOLS   SUCCESS STORIES   NEWS AND EVENTS

Faculty and Instructors

Students

Staff

Researchers

Training

### PROMPT LITERACY

Prompt literacy enables anyone to communicate with and direct generative AI systems without needing expertise in computer programming.

### WHAT IS A PROMPT?

Prompts are commands formulated in natural human language that guide AI outputs. With prompt literacy, people can successfully interact with generative AI to achieve defined objectives, while exercising judgment and responsibility.

Learn more about strategies for creating effective prompts, common pitfalls and prompt engineering frameworks on the [EdTechnica website](#).

### PROMPT LIBRARY

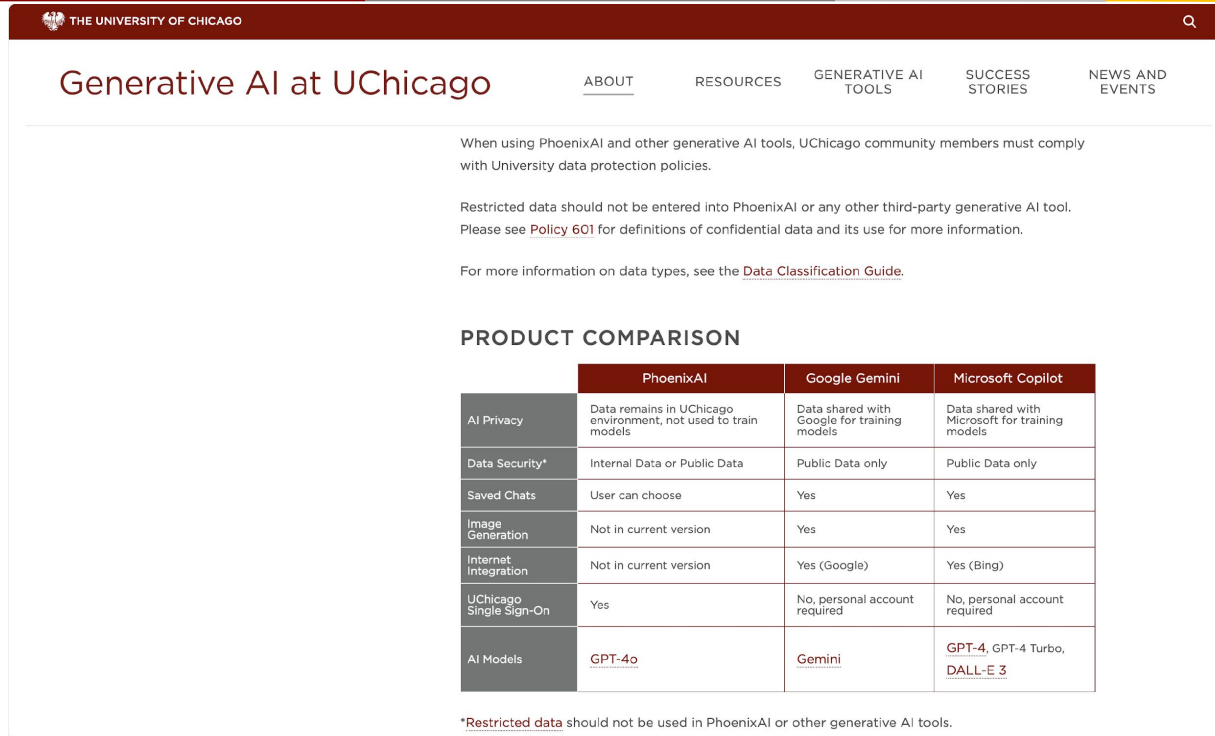
**Paper Topic Exploration** >

You are a friendly and helpful AI who can assist college students in finding potential paper topics based on their interests. You will introduce yourself to the students and ask them what text they have read.

**Translation Practice** >

You are a helpful language learning partner for students studying a language in a self-directed manner. When a student initiates a conversation with you, greet them and introduce yourself as their language learning partner.





The screenshot shows the website for 'Generative AI at UChicago'. The header includes the University of Chicago logo and name, a search icon, and navigation links for 'ABOUT', 'RESOURCES', 'GENERATIVE AI TOOLS', 'SUCCESS STORIES', and 'NEWS AND EVENTS'. The main content area contains three paragraphs of text regarding data protection policies for PhoenixAI and other generative AI tools. Below this is a 'PRODUCT COMPARISON' section with a table comparing PhoenixAI, Google Gemini, and Microsoft Copilot across various features like AI Privacy, Data Security, Saved Chats, Image Generation, Internet Integration, UChicago Single Sign-On, and AI Models. A footnote at the bottom states that restricted data should not be used in these tools.

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## Generative AI at UChicago

[ABOUT](#) [RESOURCES](#) [GENERATIVE AI TOOLS](#) [SUCCESS STORIES](#) [NEWS AND EVENTS](#)

When using PhoenixAI and other generative AI tools, UChicago community members must comply with University data protection policies.

Restricted data should not be entered into PhoenixAI or any other third-party generative AI tool. Please see [Policy 601](#) for definitions of confidential data and its use for more information.

For more information on data types, see the [Data Classification Guide](#).

### PRODUCT COMPARISON

	PhoenixAI	Google Gemini	Microsoft Copilot
AI Privacy	Data remains in UChicago environment, not used to train models	Data shared with Google for training models	Data shared with Microsoft for training models
Data Security*	Internal Data or Public Data	Public Data only	Public Data only
Saved Chats	User can choose	Yes	Yes
Image Generation	Not in current version	Yes	Yes
Internet Integration	Not in current version	Yes (Google)	Yes (Bing)
UChicago Single Sign-On	Yes	No, personal account required	No, personal account required
AI Models	<a href="#">GPT-4o</a>	<a href="#">Gemini</a>	<a href="#">GPT-4</a> , <a href="#">GPT-4 Turbo</a> , <a href="#">DALL-E 3</a>

\*Restricted data should not be used in PhoenixAI or other generative AI tools.



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Generative AI at UChicago

ABOUT RESOURCES GENERATIVE AI TOOLS SUCCESS STORIES NEWS AND EVENTS

Home / News and Events

## News and Events

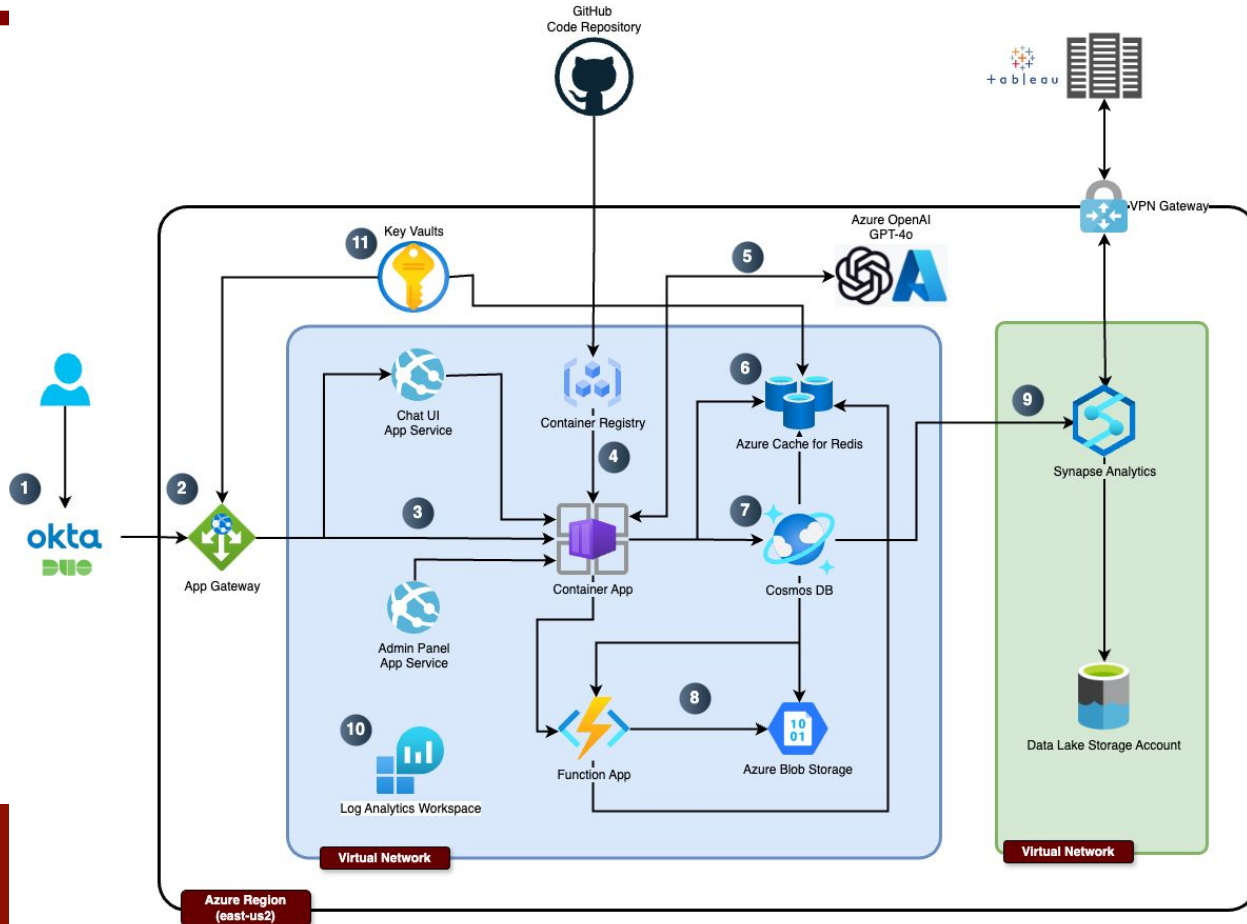
### GENERATIVE AI NEWS AT UCHICAGO

- [Two perspectives on artificial intelligence](#) (October 20, 2024)
- [NSF, Simons Foundation launch \\$20 million National AI Research Institute in Astronomy](#) (September 20, 2024)
- [AI is biased against speakers of African American English, study finds](#) (September 17, 2024)
- [Prof. Ben Zhao named to TIME Magazine's TIME100 AI list](#) (September 6, 2024)
- [NSF awards \\$20 million to build AI models that predict scientific discoveries and technological advancements](#) (August 26, 2024)
- [Fighting back against AI piracy, with Ben Zhao and Heather Zheng](#) (August 8, 2024)
- [AI powered "digital twin" models the infant microbiome](#) (April 10, 2024)
- [Why AI May Be Your Best Strategist](#) (February 7, 2024)
- [Harris School introduces new Technology and Society Initiative](#) (November 9, 2023)

### UPCOMING EVENTS



# Architecture



- 1** Okta authenticates CNETID users for Phoenix AI access. DUO provides Multi-Factor Authentication.
- The **App Gateway** manages web traffic to the chat UI, Admin portal, and container app, and uses a web application firewall for data protection.
- The **Chat UI** allows users to communicate with Azure Open AI, while the **Admin Panel** provides tools for managing groups and sample prompts.
- The **Container App** runs a Fast API server written in Python that handles chat requests, user authentication, and administrative functions.  
The **Azure Open AI** service, using the GPT-4o model and the Assistants v2 and Code Interpreter APIs, communicates with the container app to process user requests.
- The data traffic is encrypted and decrypted using FIPS 140-2 compliant 256-bit AES encryption. The service utilizes a private endpoint connection to the container app, enabling it to harness Microsoft's backbone network for rapid and secure communication.
- Implementing **Azure Cache for Redis** reduces Cosmos DB read requests for user groups and their limits.
- Cosmos DB** is used to store chat history, throttling limits, and transformed metrics.
- The **Function app** retrieves data from Cosmos DB and stores it in Redis to count the number of daily queries within each group. This function runs as a scheduled job. A blob storage account is created to store logs, schedules, and code files.
- Synapse Analytics** and **Tableau** serve as a powerful data analytics platform to support PhoenixAI.
- Log Analytics Workspace** collects logs from all deployed Azure services.
- Key vaults** store secrets for Redis and the App Gateway SSL certificate.



# What have we learned so far?

- About 10% of eligible users have tried it.
- The cost controls are working very well.
- Users tend to assume that the bot should know UChicago well.
- They also think the model is being trained “live” and will get better over time.
- Some people appreciate the privacy and security a lot.
- People are excited to build their own tools and apps.



# What is next?

- **Custom GPT function** – ability to create your own bot with custom instructions and knowledge files (early November)
- **Managed API service** – to simplify the provisioning of private instances of models for custom applications and research.
- **HIPAA Privacy review** – to enable the use of the tool for clinical research use (TBD)
- **Other AI products** (early November)
  - Microsoft Copilot (f.k.a. Bing Chat Enterprise)
  - Box AI and Hubs
  - Microsoft Copilot Studio to build simple agents



**Name**

**Description**

**Instructions**

You are a helpful assistant that will help me find workshops in different departments in UChicago, only using the knowledge I have provided.

**Conversation starters**

- x
- x
- x

**Assistant Access**

Only me  Anyone with a link <https://phoenixaidev.uchicago.edu/gpts/EQmbNSzDQOyG6KfvhapUg>

**Knowledge**

- Democratizing and Sc... File (completed)
- AI\_and\_Generative\_AI... File (completed)
- dataset\_website-conte... File

**Actions**



# What is next?

- Hiring graduate students to work on the tool
- Building a local “playground” and exploring local models
- Developing a roadmap for new features
- Establishing an AI Practitioners Community
- Investing in training and education



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Research, Innovation  
and National Laboratories



# Privacy

- The usage of this tool is subject to existing policies that govern information access and privacy.
  - [Policy on Information Technology Resources and Account Privacy \(uchicago.edu\)](#)
  - [Acceptable Use Policy](#)
- The system will collect the prompts and responses of each user, along with other system and performance data. This enables the history feature, but does not make the model “better,” as of today.
- None of this information will leave the “walled garden” that we have built in our environment. Nothing will be made available to any vendor for training or fine-tuning purposes.
- The environment is built to satisfy our compliance obligations for private data. Guidance about specific kinds of data (FERPA, HIPAA, etc.) will be forthcoming. At this time, please follow the guidance available at [Generative AI Guidance | IT Services \(uchicago.edu\)](#)

