SMU | Centre for Teaching Excellence

Getting Started with Customised Chatbots

Introduction

This guide provides a practical starting point for implementing customised chatbots for your courses. It offers a quick, accessible introduction to selecting, designing, and deploying chatbots for student use that support learning and engagement.

AI tools and capabilities continue to evolve at a rapid pace. For the most current guidance on prohibited uses or recommended practices, or if you need assistance, please contact CTE (cte@smu.edu.sg).

Contents

Choosing a platform 2
Setup Guides 3
ChatGPT 3
Perplexity 5
Gemini 7
Guidelines for Writing Instructions 9
Pedagogy-driven Chatbot Instruction 9
Other Tips 10
Guiding Principles for Implementing Custom Chatbots 11
Useful links 11

Choosing a platform

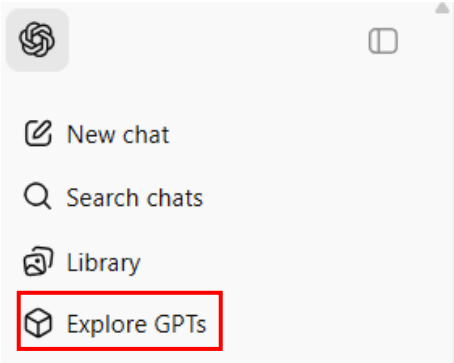
Platform	ChatGPT	Perplexity	Gemini
Choose if…	You require a high-performing general purpose chatbot	You require the chatbot's responses to be strongly grounded in the provided sources	You would like to run some quick and easy experiments
Noteworthy features	Most function controls (e.g., enabling / disabling web search, image generation)	Specify online sources with URLs; cites sources used when generating responses.	Built-in connection to your Google workspace; Ability to use live documents as knowledge sources
Paid subscription required to create custom chatbots?	Yes	No *(Free: Up to 5 knowledge files per chatbot.* *Pro: Up to 50 knowledge files per chatbot.)*	No
Free account usage limits (for students) **Always assume that students will only have free-tier subscriptions to these platforms*	10 messages / 5h 3 file uploads / day	Unlimited basic search messages 3 file uploads / day No access to image generation or advanced models. Free account users cannot select the models used. (*source*)	Usage limits change daily (*source*)

Setup Guides

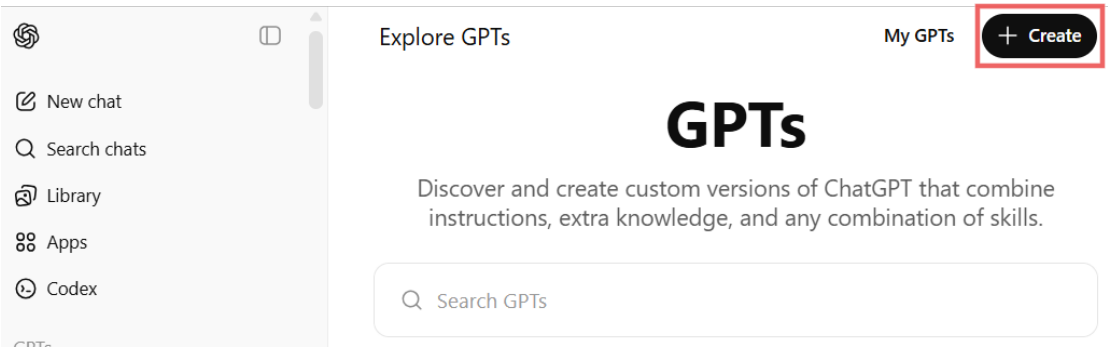
ChatGPT

(i) Login to ChatGPT using an account with a paid subscription.

(ii) From the left panel in the home page, select "**Explore GPTs**".

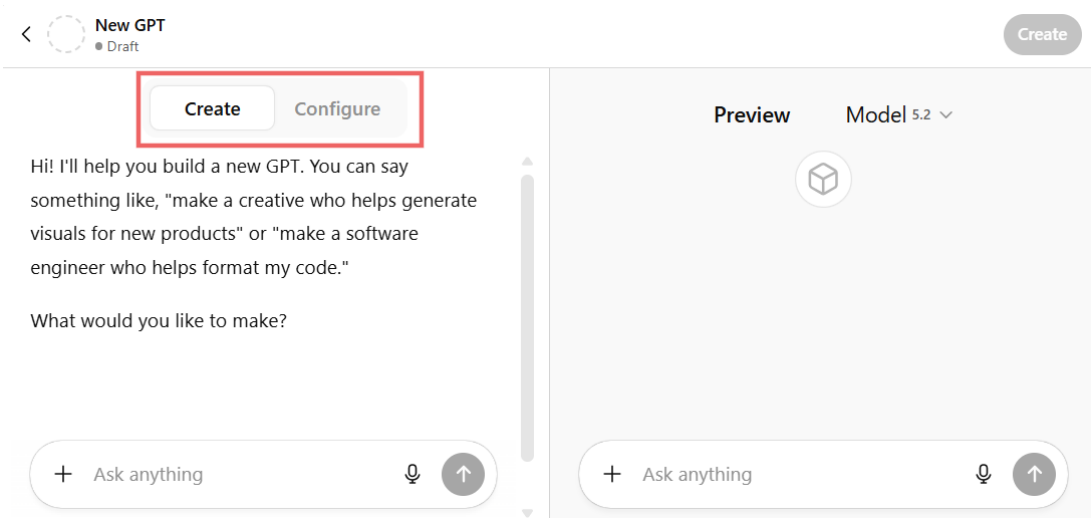


(iii) From the GPTs page, select "**Create**".



(iv) You should now find yourself at the GPT creation interface. You may choose to:

a. Describe the customised chatbot with natural language in "Create" mode, or
b. Edit the name, description, and instructions and settings directly in "Configure" mode (*see guidelines for writing instructions*).

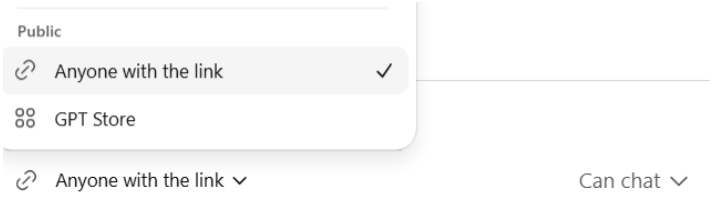


The "Preview" pane on the right allows you to test out your customised chatbot immediately.

(v) You can add conversation starters and knowledge files under the configure tab. You can also enable/disable the web search, canvas, and image generation features here. We recommend disabling unneeded features to prevent unexpected behaviour.

(vi) Once you are ready, click the "**Create**" button to save the custom GPT.

(vii) To share the chatbot with students, click the "**Share**" button and update the access to allow "**Anyone with the link**". Click "**Copy link**" and share the link with your students to allow them access to your chatbot.

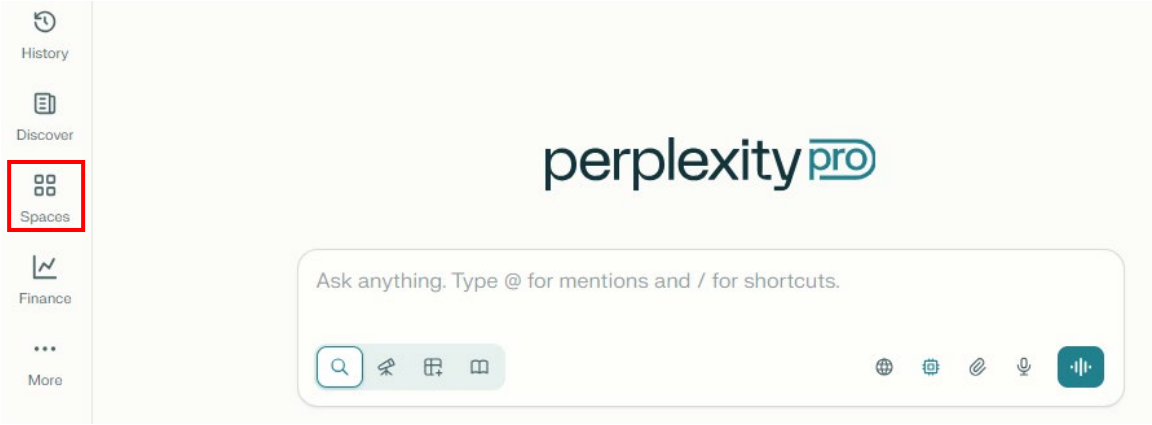


(viii) You can continue to make changes to a live chatbot by modifying its configurations and clicking on the "**Update**" button to save your changes.

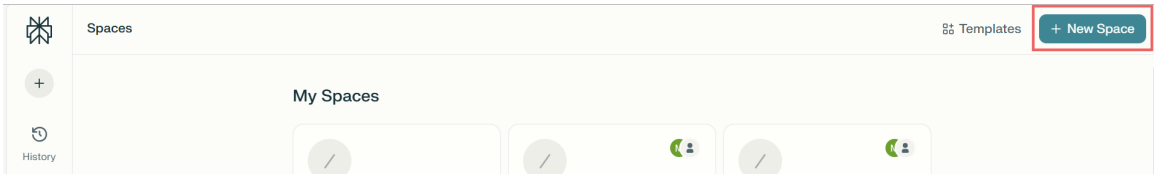
Perplexity

(i) Log in to Perplexity.ai

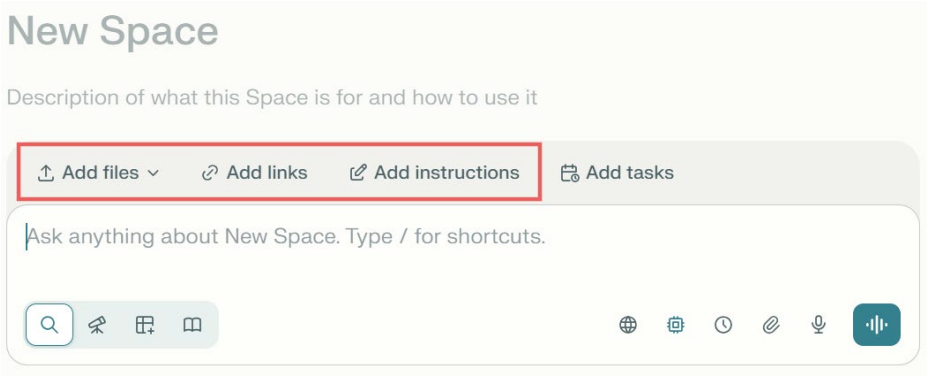
(ii) From the left panel in the home page, select "**Spaces**".



(iii) Select "**New Space**" in the top right-hand corner of the page.

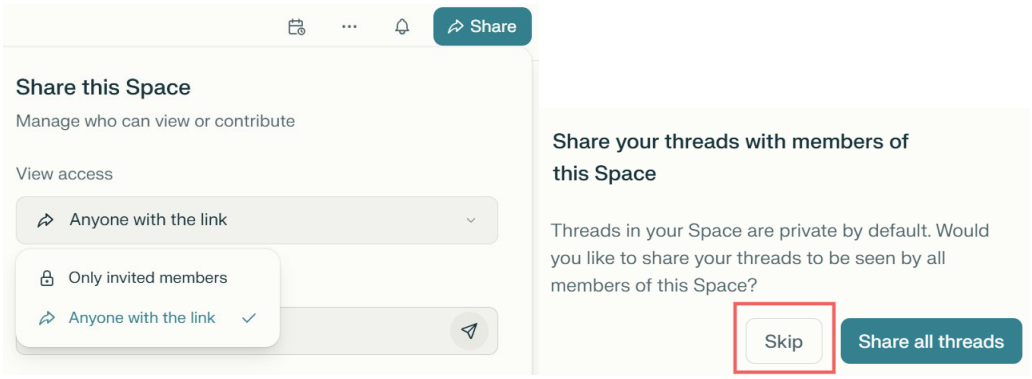


(iv) Name and add a description of your customised chatbot. Use "**Add instructions**" to define the chatbot's behaviour, and use "**Add files**" and "**Add links**" to define sources that the chatbot should refer to when responding to students. You can test the chatbot by simulating an interaction directly in the prompt box.



(v) Once you are ready to share the chatbot, click on the "**Share**" button and change the view access to "**Anyone with the link**". You may be prompted to share your threads with

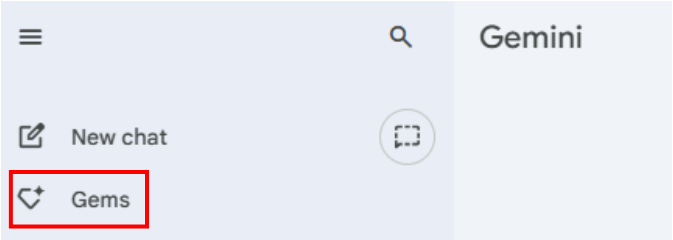
members of the space – you can skip this. Click the "**Copy link**" button and share this with your students for them to access your chatbot.



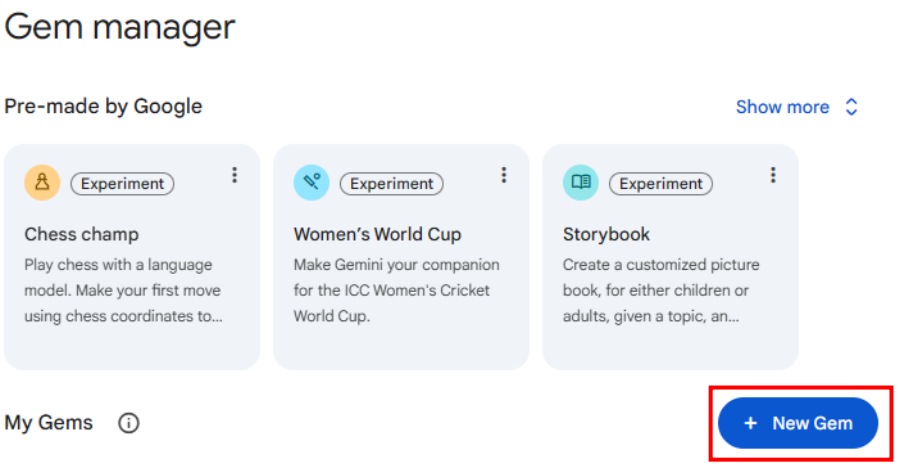
Gemini

(i) Login to Gemini with your SMU email account (via Google sign in).

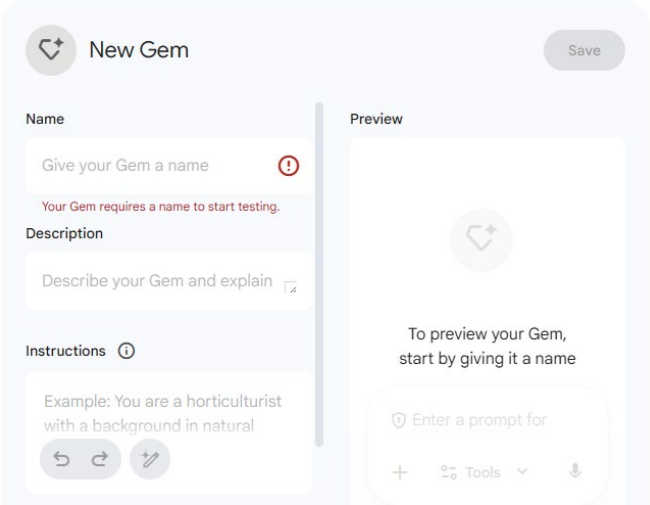
(ii) From the left pane in the home page, select "**Gems**".



(iii) From the Gem manager page, select "**New Gem**".



(iv) Name and add a description of your customised chatbot. Set instructions to define the chatbot's behaviour and add files to "Knowledge" as sources the chatbot should refer to when generating a response (Note: Users must be granted viewing permissions in Google Drive for files added as knowledge sources).



The “Preview” pane on the right allows you to test out your customised chatbot immediately.

(v) Once you have saved the Gem, you can share it by adding your students’ email addresses or by changing the access of the chatbot to “Singapore Management University”. You students will have to use their SMU-assigned email addresses to access the Gems.

Guidelines for Writing Instructions

- The following guidelines are intended to provide a starting point for writing instructions for custom chatbots.
- As use cases for custom chatbots vary widely, these guidelines are not prescriptive and should be applied selectively, based on your specific purpose.
- The inner workings of Large Language Models continue to be opaque, hence developing and tuning custom chatbots necessarily involves some measure of trial and error.

Pedagogy-driven Chatbot Instructions

1. **Assign a role.**
   This helps the custom chatbot interpret user prompts and respond accordingly. For instance, a "tutor" may be more likely to establish the user's level of understanding and provide step-by-step explanations.
   Examples: Computer science lecturer; Economics tutor; Undergraduate teaching assistant; Coach; Capstone supervisor

2. **Provide rules for the interaction.**
   Shape students' interaction with the chatbot by defining how it should behave. This helps to provide a consistent, predictable experience for all students.
   Examples: Always refer to your knowledge base in generating responses; Ask only one question at a time; Adjust the difficulty of the exercise according to the level of understanding the student has exhibited

3. **Define your objectives.**
   Clear objectives, especially learning objectives, help steer the chatbot interaction away from its default behaviour (helpfulness) and towards specific goals.
   Examples: Develop critical thinking and reasoning skills; Apply concepts and frameworks; Make persuasive arguments instead of just stating positions

4. **Break down your workflow into discrete steps.**
   List steps that the chatbot should follow in processing user inputs and in generating the output. You may wish to instruct the chatbot to display the result of each step, which typically increases the quality of the output (see chain-of-thought prompting).

5. **Describe the students' task.**
   These descriptions help the chatbot provide clear instructions and re-orient students who are confused or off task.
   Examples: Students should state at least three points of rebuttal; Identify a real-world example of this phenomenon; Solve the problem and show their workings

6. **Set guardrails.**
   Lay out rules that the chatbot should observe when generating responses. Note that the efficacy of guardrails may vary, e.g., "never hallucinate" is a rule that will not be successfully observed.
   Examples: Never provide the solution without first seeing an attempt from the student; Never answer on behalf of the student; Do not provide citations in any circumstance

7. **Define how generated responses should be formatted.**
   Specifying how the output should be structured can increase how consistently the customised chatbot carries out instructions, and the quality of the response.
   Examples: Your output should be in a table of three columns (business practice, description, real-world example); Organise your response into three sections, each containing a header, description, and up to five main points

Other Tips

- General chatbots can be used to help you draft and refine instructions.
  - Draft: Describe the goal(s) of the custom chatbot and its intended behaviour.
  - Refine: Share your instructions, issues with the current output / behaviour, and desired output / behaviour.
- Generated chatbot responses are probabilistic, not deterministic. Test your chatbot several times with a range of anticipated student responses before using them in your course.
  - Re-test your chatbots after making changes to their instructions to ensure that they continue to behave consistently.
  - In the final stages of fine tuning, where the output produced is very close to the desired behaviour, make incremental changes to the instructions and test frequently to ensure the chatbot continues to behave in the desired manner.

Guiding Principles for Implementing Custom Chatbots

- Instructors are ultimately responsible for AI outputs
    - Extend support for clarifications
    - Gather feedback from students
    - Provide alternative learning resources
- Be intentional with the implementation of these chatbots
    - Explain what students can gain from the interaction
    - Explain how students can gain the most out of the interaction for their learning
    - Encourage students to take ownership of their own learning
- Safeguard sensitive data
    - Ensure students' sensitive data is not used in knowledge files and instructions
    - Remind students not to input documents and prompts with their personal data

Useful links

SMU Libraries – Appropriate Use of Electronic Resources Policy

Centre for Teaching Excellence – SMU Framework for the Use of Generative AI Tools

IITS – AI Train (collection of resources on using AI – for SMU staff)