

- Artificial Intelligence (AI)



ChatGPT masterclass

Make AI work for you

Want to get more from the best-known AI service on the planet? Barry Collins shows you how to make AI work for you

ChatGPT is a splendid time sink, letting you plot out horror movies starring Michael Stipe and Liz Truss, or practically anything else you can dream up. But it's a lot more than a plaything to pass a tea break with. OpenAI's chatbot has a series of formidable features, most of them hidden from those who don't subscribe to ChatGPT Plus. It's worth doing, even if only for a month, so you can evaluate the sheer power that lurks here and work out if it could make a difference to your life.

ChatGPT Plus can perform hugely sophisticated data analysis, saving you from having to spend time learning how to do it yourself in applications such as Excel. It can tidy up your computer code, your emails or your PowerPoint presentations. It can hook into third-party services to plan holidays, book restaurants or scour for facts on your behalf.

And that's before we get to ChatGPT Plus' most impressive feature: GPTs. These are mini-chatbots, personalised to a specific task that you define. They can help you to cook dinner, organise a marketing plan, create graphics for social media or learn CSS. At the risk of tipping into hyperbole, there are virtually limitless applications for GPTs, and you can create and train them without having to bash out a single line of code. They're made with plain English commands and can be trained on your own data, so that they're highly personalised to you or your business.

In this feature, we'll guide you through how to master ChatGPT and GPTs, unlocking the potential of the AI assistant, with practical hands-on tips and advice.

MASTERING CHATGPT

There can't be a *PC Pro* reader out there who hasn't spent at least ten minutes noodling with ChatGPT – or one of its many derivatives, such as the Bing Copilot.

While there's plenty of AI power and much to explore with the free version of ChatGPT, the real power is unlocked when you subscribe to ChatGPT Plus. Not only does that (largely) ensure you can get access to the chatbot during the regular periods of peak demand where the free version is switched off, it also opens up extra features such as plugins and advanced data analysis. Let's look into those two features in greater detail.

Plugins

Plugins allow you to combine the intelligence of ChatGPT with third-party sites or services, such as Wikipedia, WolframAlpha or OpenTable. For example, you

with the US site, but it's good for generating ideas and rough budgets.

Irritatingly, you can only enable three plugins at a time and the Plugin Store is poorly presented and erratic. Often plugins don't install at the first time of asking, for example. It's a work in progress, but one that holds tremendous promise if it can be made to work more smoothly.

Advanced data analysis

This is arguably the best feature of ChatGPT Plus, although you may still need to dive into Settings | Beta features and switch it on first. Advanced data analysis lets you upload spreadsheets and other files and get the AI to do the hard graft that you might normally do in Excel.

For example, we fed ChatGPT Plus raw survey data from the *PC Pro* awards in an Excel workbook. Each tab represented a different awards category, and the AI automatically figured this out, but

are much more reliable than they are with general chats. There are no hallucinations (at least none that we've seen), and it will tell you if it can't perform a particular request or needs more guidance on what you're looking for.

ChatGPT prompt engineering tips

Although AI services such as ChatGPT are growing ever more intelligent and are remarkably capable at determining intent, there are techniques you can apply to guarantee faster, more accurate results. This so-called prompt engineering is often sneered at in tech circles, but knowing how to get the best results from AI tools is a skill – one that can pay handsomely, too, if you check the job ads.

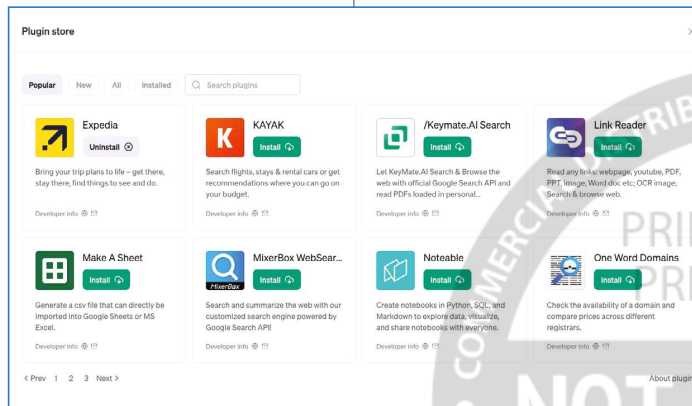
We've only got space to cover the raw basics here, but even these tips should help improve your hit rate with services such as ChatGPT.

There are different types of prompt, the most basic of which is known as zero-shot prompt. This is basically where you give the AI a task without any clues as to the type of output you're seeking. For example:

Tell me the sentiment of the following social media post: the latest issue of *PC Pro* was one of the best in years

When we entered that into ChatGPT, it correctly identified it as positive. Of course you don't need an AI assistant to tell you that, but now imagine that you're pasting 3,000 of these social media sentiments into a spreadsheet and want to tell how many are positive – that's a job AI will perform far more quickly than any human.

To help improve the accuracy of results, you could give the AI clearer instructions of the output you're



LEFT Plugins allow you to combine ChatGPT with third-party services

BELOW ChatGPT helped us produce the results for the *PC Pro* awards

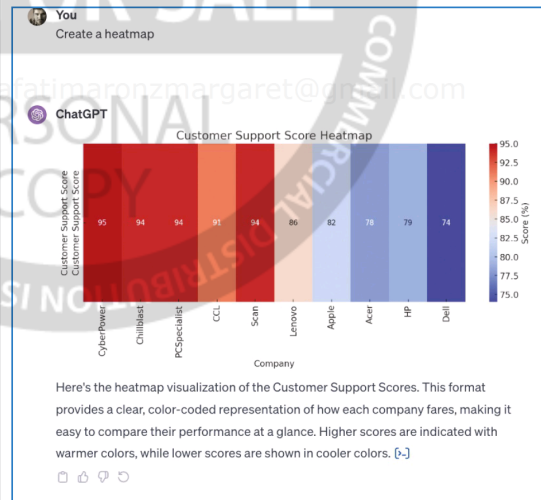
could ask the AI to create a summary of a long article you've found on Wikipedia or use it to research facts. And it goes further. Ask ChatGPT to "give me the release dates of the past five versions of Windows from Wikipedia" and it will even dig out the correct answers from the online encyclopedia, without you having to wade through different articles yourself.

With the Expedia plugin, on the other hand, you can ask the AI to do things such as create a three-day trip to Oslo for you, and it will come back with hotel and flight recommendations that suit your budget. It's not perfect: it sometimes gets trip dates wrong when you click through to book flights, for instance, and it only deals

checked this with us to ensure it was making the correct assumption.

Once it had worked out the format, we could ask it to produce graphs showing each company's performance in different categories or to tell us how company A fared against company B in different categories. We could also use it to calculate different weightings for each category, for example giving "very satisfied" responses a +2 weighting, but mere "satisfied" a +1, to see what effect that had on the overall results.

All of this could be done in Excel, but only if you have the skills with pivot tables or can apply the relevant formulae. Advanced data analysis lets you do all this with plain English commands, and the results



Here's the heatmap visualization of the Customer Support Scores. This format provides a clear, color-coded representation of how each company fares, making it easy to compare their performance at a glance. Higher scores are indicated with warmer colors, while lower scores are shown in cooler colors. [-]



looking for and provide examples. This is called a few-shot prompt. So, to elaborate on the example above, we might enter the following few-shot prompt:

Tell me the sentiment of the following social media post and categorise it as either positive, neutral or negative. Here are some examples:

The latest issue of PC Pro was one of the best in years.

Answer: positive

Barry Collins couldn't write a bus ticket.

Answer: negative

The Labs was good, but I didn't get much from features.

Answer: neutral

Here we not only define what output we're seeking (positive, neutral or negative), but we give the AI something to go on with supplied examples. These are, of course, very basic examples that any AI model should be able to determine on its own, but you can apply the same technique to far more complex, nuanced scenarios where the answer might not be as clear-cut to help improve your results.

In the example above, ChatGPT rightly identified the third example as neutral – it contained good and bad feedback. So now you could let it loose on a spreadsheet of many thousands of lines of feedback via advanced data analysis and let it work out the sentiment expressed in each, giving you quantitative results from qualitative data that would normally require human grunt work. (In other words, how many of these social media comments on the latest issue of *PC Pro* are positive?)

Chain of thought prompting is another technique that can help avoid errors. Here you're asking the AI to think through its answers step-by-step, to show its working, if you like. For example, you might ask:

I've been offered two loans, each for £100,000, repayable over three years.

The loan from Barclays has a 4.5% APR and an arrangement fee of £500.

The loan from Santander has a 4.9% APR and an arrangement fee of £600.

Which has the cheapest overall cost? Think step-by-step and show your working.

When we first entered this into ChatGPT Plus, it gave us a long set of workings, but that revealed its

answer was based on annual payments, and not the monthly payment terms that most loans are based on. To confirm, we asked:

Are you assuming payments are made monthly?

It then went off and calculated the correct figures, answering that the Barclays loan would be around £800 cheaper over the three-year term (it provided more detailed answers than this).

There are a few key lessons, then:

1 Be as precise as possible with your initial prompt (for example, using "APR" rather than just "interest rate").

2 Get the AI to show its working, so that you've got a better chance of spotting mistakes, misassumptions or hallucinations (stuff it's made up).

3 Challenge the AI on its methodology, so that you can be as sure as possible that the answers you're getting are correct.

WHAT ARE GPTs?

OpenAI, ChatGPT, GPT-4, GPT... you almost need an AI assistant to stay on top of the many confusing terms that the AI industry generates.

Just to clear things up:

OpenAI is the company that created ChatGPT, the infamous chatbot that's generated more column inches than Elon Musk over the past year. (Heck, it's probably written a fair few of those column inches itself.) ChatGPT is partly based on the GPT-4 large language model (LLM), which OpenAI released in 2023. And a GPT is effectively a mini-version of ChatGPT, dedicated to a specific task, such as helping you plan a gap year or how to use a piece of software (see our step-by-step guide on p30).

You don't need any coding skills to create a GPT. They can be created using plain English commands given to ChatGPT. That doesn't mean there aren't particular skills and techniques you can apply to getting the best out of them or training them better, as we reveal in our step-by-step guide.

The key with GPTs is thinking of a very specific task that could benefit

from AI assistance. It might be helping you to formulate your company's annual report or buffing your Python 3.12 skills, but the more specific the better.

It's also worth noting that you can upload files or documents to GPTs to help with their training. Let's say, for example, you've treated yourself to a Canon EOS R50 camera and want to learn how to better use its numerous features and functions. You can upload the PDF of the camera's official manual to a GPT and then use your AI assistant to guide you when you want to find out how to change the flash settings or activate the self-timer. That means the AI is less reliant on the unreliable information it might otherwise source online.

At a more advanced level, you can even connect a GPT to a third-party service such as Zapier and use it to query other services, such as your Google Calendar. We haven't got space to go into setting up these quite advanced features here, but it's something we may return to in a future issue. Zapier has advice on how to set these up at zapier.com/blog/gpt-assistant.



RIGHT Meet the new boss, same as the old boss: Sam Altman, OpenAI CEO

6 different things you can do with GPTs

1 Follow a brand guide

If your company has a brand guide that must be applied to all of your internal and external comms, you can upload the guide to a GPT and then paste in documents, assets and suchlike before they're published to check that they comply with the brand guide. The AI can even rewrite the copy for you, although proceed with caution here.

2 Help with homework

If you've long since forgotten the difference between an abstract noun and a concrete noun, or are a bit fuzzy

help you learn and strategise in a particular game. Previous answers are always stored, so you can use the GPT as a reference library.

5 Deliver new data insights

Finally that spreadsheet you've kept of your weather station readings for the past 12 years is going to come in useful! GPTs can be used to generate data insights and visualisations for specific projects. Tell the GPT what kind of analysis or graphical output you require, regularly feed it new data, and watch it do the leg work.



ABOVE Don't get mad with irate customers – use a GPT to get even

LEFT A GPT is likely to be more helpful with the kids' homework than you

BELOW GPTs can create stunning AI artwork using the DALLE 3 engine

6 Handle rude customers

If you've ever been on the receiving end of rude emails from stropy readers – sorry, I mean customers – then it can be hard to resist the temptation to fire a stream of invective back. However, you can let the AI do it for you. Train the GPT on the kind of conciliatory tone you want to set in professional replies, tell it what you want to say to the customer in bullet point form, and let the AI add the calming balm.



on the purpose of a coordinating conjunction, you might struggle to help the kids with their English homework. Instead, create a GPT, ask it to explain everything in terms a 12-year-old can grasp, and fire questions into your new AI assistant to overcome the homework hurdles.

3 Generate website images

Need some stock imagery for a website you're creating? GPTs can create AI art, too, using the DALLE 3 engine, which has come on in leaps and bounds recently. Tell the GPT what kind of website it is, the artistic style you prefer, what to avoid, and it should be much easier than trying to generate unique images every time with DALLE 3 alone.

4 Master complex games

It's easy to get lost in complex video games such as *Crusader Kings III* or *Civilization VI*, not really understanding what's going on. On a less techie bent, maybe you've always fancied learning bridge or chess, but can't make head nor tail of those symbols they publish in the newspaper puzzles. A GPT can



Finally that spreadsheet you've kept of your weather station readings for the past 12 years is going to come in useful!



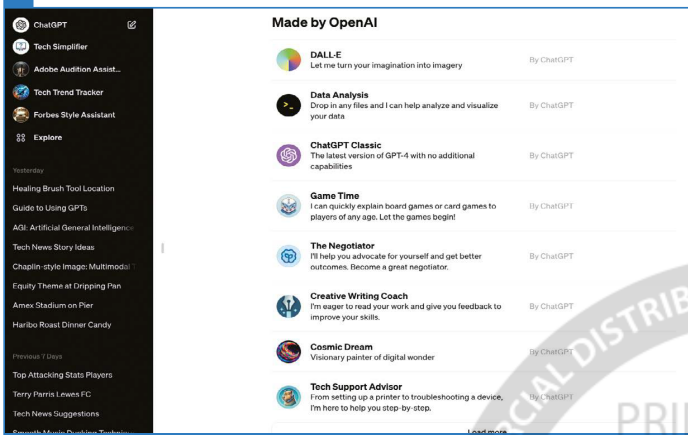
CREATE A GPT: Step by step

Here we're going to show you how to create a GPT that acts as a virtual assistant for Adobe Photoshop, providing step-by-step instructions on how to perform complicated tasks. It's just one of many different types of GPT you can create, and the guide below is not intended to be

definitive - you'll need to mould your own GPTs to your particular needs. However, our guide will give you tips on how to create GPTs, how to test they're working properly, how to provide feedback when they're not, and how to tweak their performance as you go along.

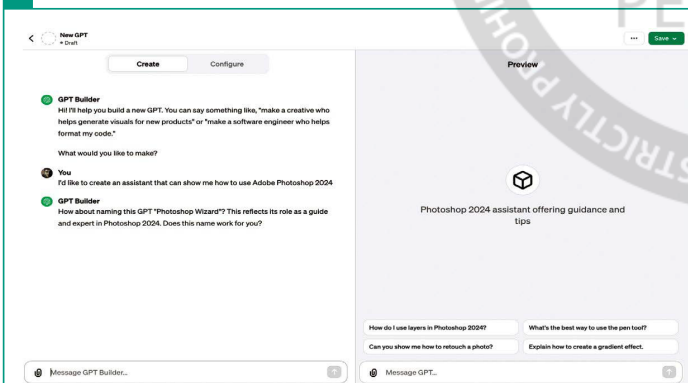
1 CREATE A NEW GPT

To create a GPT you'll need to be a GPT Plus subscriber (\$20 per month at the time of writing). Once you're in the ChatGPT Plus interface, hit the Explore button that should appear in the top left-hand corner of the screen and you should see a selection of GPTs already created by OpenAI to give you a flavour of the kind of tasks they can perform. To make your own, hit the Create a GPT button at the top of the screen.



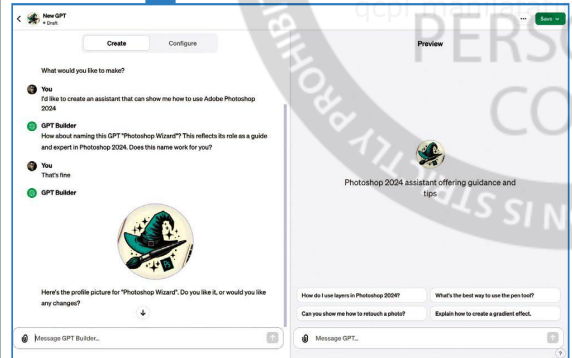
2 DEFINE THE GPT'S ROLE

When you create a GPT, you interact with the chatbot on the left, telling it what you want, while in the right-hand pane it builds a demo of your GPT that you can eventually test. First, ChatGPT will ask what you want the GPT to do and here it pays to be succinct but specific. For example, we tell ChatGPT that we want to build an assistant for "Adobe Photoshop 2024", not just "Photoshop", so it knows we want answers tailored to that version. We could have been even more specific and said for Windows rather than Mac, for example, so that keyboard shortcut instructions were issued correctly, but we'll show you how to make such changes later.



3 GIVE IT A NAME AND ICON

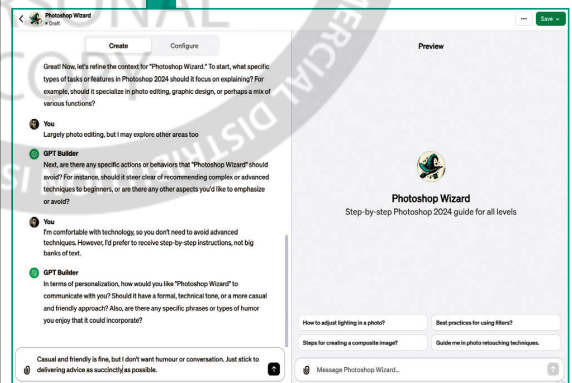
ChatGPT will automatically suggest a name for your new GPT and even use the DALL-E 3 image-generation engine to design an icon for it as well. If you don't like the name it suggests, you can simply write your own. If the icon's naff, you can ask it to have another go, or describe what you'd like the icon to contain.



4 GIVE YOUR GPT DIRECTION

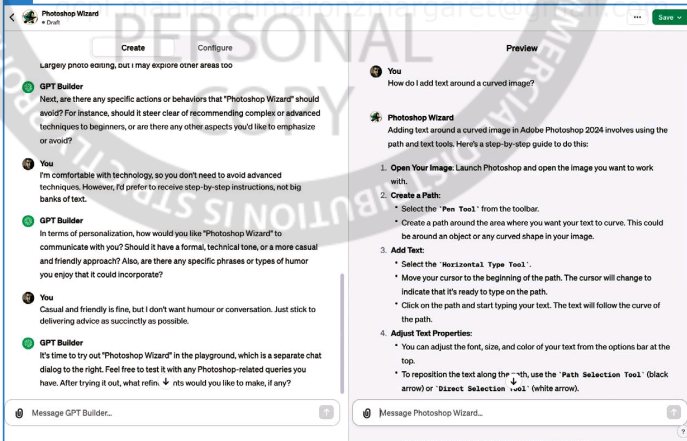
Now we begin to define how your GPT will act and respond. ChatGPT will ask you a series of questions about what you specifically want the GPT to do, how it should answer your questions and even which type of personality the chatbot should adopt. This is the time to start drilling down into specifics and being very clear about what you want the GPT to do and, just as importantly, not to do. Below, for example, it's asking for "the type" of humour we enjoy and we nip that in the bud quickly. We want instructions on how to use Photoshop, not a GPT-driven Michael McIntyre.

This section can be quite confusing as the GPT often asks the next question before you've finished answering the previous one. Don't get flustered. Just keep answering them one at a time and feel free to add extra instructions beyond what it's asking for.



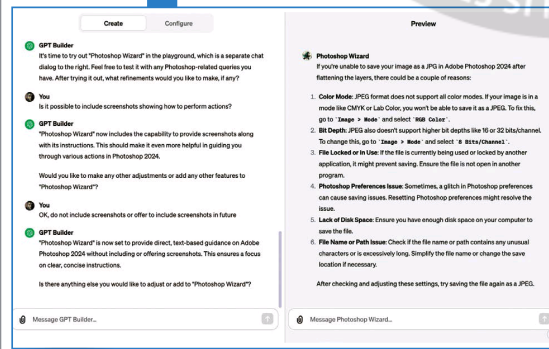
5 START TESTING

Once you've laid down the basic ground rules for your GPT, it's time to start testing in the "playground" pane on the right-hand side. Ask the GPT a question in that right-hand pane, not the left! It's helpful at this stage if it's something you already know the answer to, as it gives you a feel for whether the GPT is looking in the right sort of places for information or whether it needs more guidance. Answers should appear promptly, and if you don't like the tone of the answers, it's not explaining clearly enough, or it's dumbing down, provide feedback in the left-hand pane so that ChatGPT can make adjustments to your GPT's output.



7 ASK FOLLOW-UP QUESTIONS

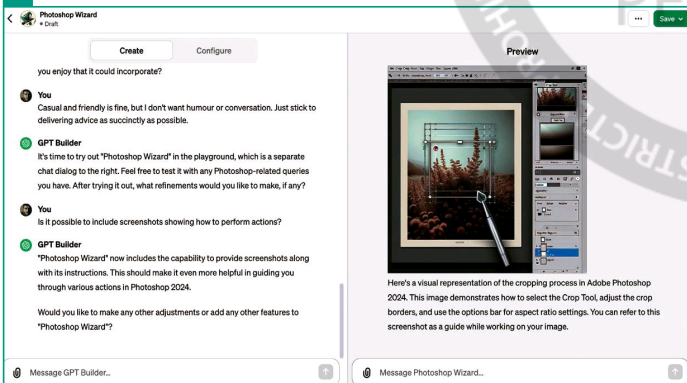
Don't just test your GPT with a series of one-off questions. Ask follow-ups to see how it reacts and, again, be prepared to issue corrections or advice if it veers off course. In this example, we'd followed our GPT's instructions on how to replace a sky in an image, but when we went to save the image it wouldn't let us save in the JPG format, even after flattening the layers (which is normally the cause of such problems). So we asked the GPT for follow-up advice and it delivered. The second suggestion on bit depth was actually the cause of the problem. Make sure you provide feedback in the left-hand pane, so the GPT knows when it's getting stuff right as well as when it's wrong.



Make sure you provide feedback on the left, so the GPT knows when it's getting stuff right as well as when it's wrong

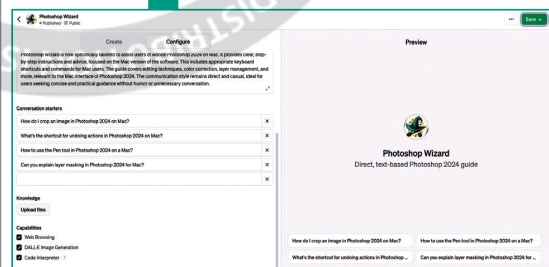
6 CORRECT BAD BEHAVIOUR

As we were building our Photoshop Wizard, we pushed our luck a bit and asked ChatGPT if it would be possible to include screenshots with its answers to help us find the right icons. This is where we ran into one of ChatGPT's (and AI in general's) big problems: it makes stuff up. Literally, in this case. Instead of supplying screenshots it supplied a DALL-E-generated image that showed a mangled Photoshop-like interface, which was about as much use as a thesaurus to a bricklayer. Make sure to put ChatGPT straight when it veers down the wrong path. In this case, we told it explicitly we don't want to see screenshots in any future solutions. Again, make sure these instructions are submitted in the left-hand pane, not the right, or your GPT won't learn.



8 ADD FILES TO HELP TRAINING

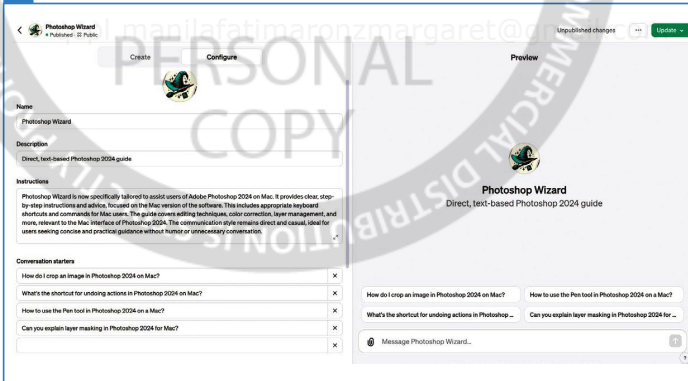
If you want to add your own data to train the GPT with, you can do so by clicking the Configure tab in the left-hand pane and selecting Upload Files. You can upload a variety of files including PDFs, Excel workbooks, Word documents, HTML files and more. If, for example, your company has brand guidelines, you could upload them here and create a GPT that ensured all of your marketing materials followed the rules. In our Photoshop Wizard example, we could upload a PDF software manual (if Adobe still produced such a thing) to help steer the GPT in the right direction. Back in the chat pane, you can also steer your GPT to particular websites if you think they're a good source of information for your needs. GPTs have live access to the web, so they fetch the latest updates.





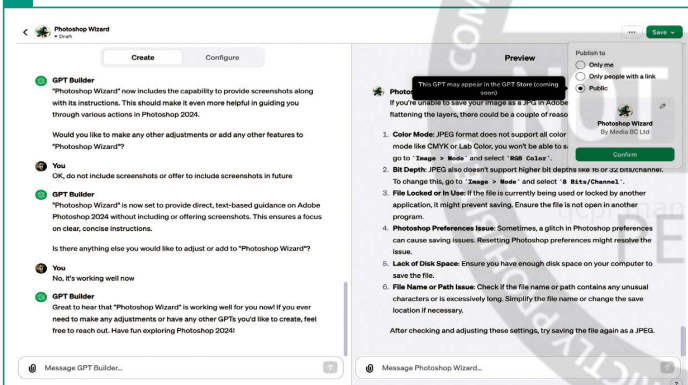
9 TWEAK YOUR STARTERS FOR TEN

Every GPT has four default questions available above the prompt bar, which you can edit from the Configure menu. This is a good place to enter a question you might ask repeatedly, saving you from having to type it afresh each time. For example, if you've created a GPT designed to scour news sites for mentions of your brand, you might have a default conversation starter that says: "Check the news sites for any new mentions of ABC Laptops today." Simply delete these Conversation Starters if they're never going to be of any use.



10 PUT THE GPT LIVE

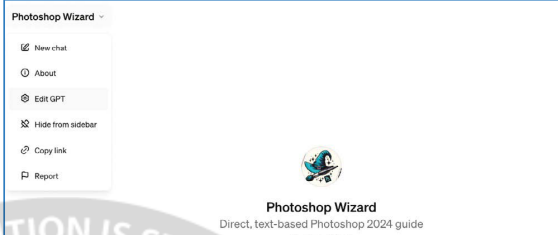
Once you've given the GPT a thorough test and you're relatively satisfied that it's behaving itself, then it's time to publish. Don't worry if you've not got everything 100% nailed down at this point, as you can still tweak and reconfigure the GPT once it's live. When you click that Save button in the top right-hand corner, you're given three publishing options: Only Me, Only People With A Link and Public. Only Me means only you'll have access to the GPT, which is ideal for GPTs you might have trained on confidential data (note - if you're using GPTs for business, you really do need to interrogate the OpenAI privacy policies carefully and never upload sensitive information such as customer contact details to ChatGPT). Only People With A Link means you can share the GPT with other ChatGPT Plus subscribers. And Public means the GPT could appear in a forthcoming GPT Store that wasn't available at the time of writing, but might even let you earn revenue from other people buying access to your GPT.



Don't worry if you've not got everything 100% nailed down, as you can tweak and reconfigure the GPT once it's live

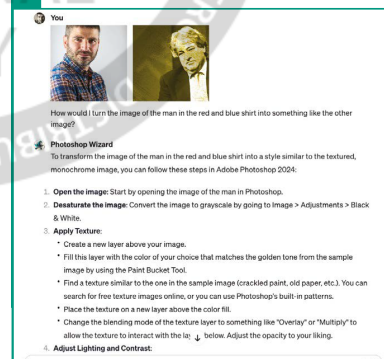
11 EDIT YOUR GPT

If you find you want to tweak your GPT's behaviour once it's live, it's easy to do so. Click to open the GPT from the ChatGPT sidebar on the left and then click Edit GPT from the dropdown menu that appears. Now you're back in the familiar setup interface, where you can issue commands on the left and test the GPT on the right. Here, for example, we could specify we want our GPT to issue instructions for the Mac version of Photoshop and it will adjust its behaviour accordingly. You can also upload more files here, if you want to add new data to help train the GPT. The key thing here is to press the Update button in the top-right-hand corner once you've finished editing. Even if the chatbot asks you if there's anything more you want to change and you reply "no", it won't save any changes unless you press Update, which is an easy mistake to make.



12 KEEP PUSHING IT

Even once you've got your GPT published, keep pushing and prodding it, exploring its capabilities. For example, it's easy to forget that you can query your GPT with uploaded files as well as upload files for training. Here, for example, we ask our GPT to give us instructions on how to copy a style of a portrait by uploading the image we want to copy and one we want to convert. The GPT understands what we're asking and issues a largely accurate step-by-step answer that delivered a decent result. Keep exploring ways you can push the boundaries of your own creations.



HOW WE CREATE THE PC PRO PODCAST IMAGES

Regular *PC Pro* podcast listeners might know that Barry sometimes produces AI-generated images of that week's podcast guests ahead of the show. We've had Jon Honeyball as a *GTA V* character, editor Tim as a Lego figure, and Lee Grant as a wonderfully oddball Pixar character, among many other themes.

Readers have occasionally pinged us on social media and asked how they're created (thanks, mum), so here's a quick guide on how to get AI images of people you might know.

To create these images, Barry uses the Midjourney AI service. Midjourney allows you to upload your own images and use them as reference images. ChatGPT Plus/DALLE 3 also allows you to do this now, but we seem to get consistently better results from Midjourney.

The key to success is the quality of the reference image. You ideally want a high-definition portrait shot where the person's head and shoulders fill the frame, so the AI can ingest as much as facial detail as possible.

To get going, feed Midjourney a very basic prompt of what you're looking for. So, for a Pixar movie character, for example, you'd enter the following prompt into Midjourney's Discord interface:

```
/imagine http://www.referenceimage.com
as a Pixar movie character
```

(The web address here is a substitute for a link to the reference image. You can drag an image into Discord's chat interface and upload it to get a unique link for an image you've saved locally.)

Sometimes you'll strike gold with a prompt as simple as this. At other times, you might need to do extra legwork.

Often, being more descriptive can help refine an image. So, for our Pixar image you might embellish the prompt with details such as:

```
/imagine http://www.referenceimage.com
as a Pixar-style character, vibrant colours,
smooth textures, exaggerated facial
features, friendly expression --style cartoon
```

The key addition here is the "style" parameter, denoted by the double-dash before the word. This reaffirms to the AI that we're definitely looking for a cartoon-style image.

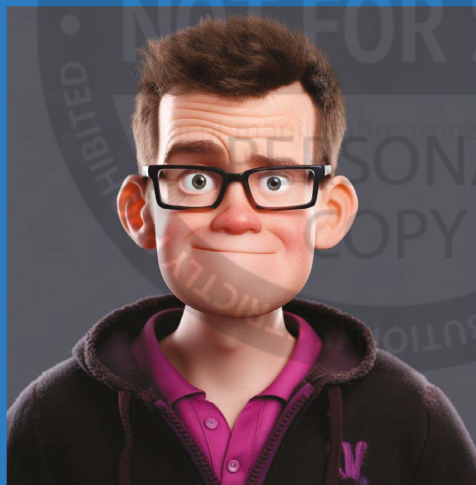
Finally, if a generated image is close but not quite right, or some weird glitch afflicts the image (such as a hand with only four fingers), the Vary buttons that appear under upscaled images are your friend. Vary (Strong) is good for where the AI has got a strong likeness of your subject, but the image isn't quite there. Vary (Subtle) is good for fixing images with those annoying little glitches. ●



ABOVE The AI images we've generated for the *PC Pro* podcast have included Lego figures...



ABOVE ...As well as a frankly disturbing portrait of Jon Honeyball in *Grand Theft Auto*...



ABOVE ...And a less disturbing and altogether cuter image of Lee Grant as a Pixar character