University of Hull

2nd March 2024

Housekeeping

- Badges - Please be sure to wear your DDD Badge at all times, no badge = no food!
- Bathrooms - Ask purple-shirts if directions needed!
- Mobile Telephones - Silent or vibrate please!
- Smoking - Prohibited both indoors and outdoors throughout the campus, except in designated smoking shelters.
- In case of fire - Make your way to a Fire assembly point.
  - For Canham Turner and AS: disabled car park delimited by buildings 6,10,15,23 and 43 on the map.
  - For RBB: grassed areas delimited by buildings 4, 8, 13 and 43 .
  - All lecture theatres have 2 exits, which take you into the stair wells or straight outside.
- Taxi – Ask at registration desk for number.

SamSaidYesApp

- Use the app...
  - View the schedule.
  - Share Photos.
  - Provide feedback.
  - Ask questions.
  - Please be sure to follow our code of conduct!

Guest Wifi

- Visitors can connect to the Guest WiFi today and receive speeds of up to 50mbps.
- How to connect:
  - Select UOH-Guest from the list of wireless networks on your laptop or mobile device.
  - Open your browser and you will be redirected to a login page.
  - Enter your email address and mobile number.
  - Tick the boxes to accept the terms and conditions and then press ‘Get Online’.
  - After a few moments, you will see the word ‘success’.
  - You are now connected! Close and re-open your browser to go online.

Code of Conduct

Be aware of others

Be welcoming and respectful

Be understanding of differences

Be friendly and patient

Be open to all questions and viewpoints

Be kind and considerate to others

Thank you to our Sponsors!

UNIVERSITY OF HULL

black marble

turbo360

{ } NDC Conferences

Rock Solid Knowledge

IdentityServer.com

Sam

avanade

QGEMS

iO associates

DDD South West

- https://dddsouthwest.com/
- Call for speakers! Open until TODAY at midnight.
- Event is on 27th April 2024.

Global Azure Bootcamp

- https://globalazure.net/
- Over 3 days, communities are organising localised hybrid events and live streams for everyone around the world to join and learn about Azure from the best-in-class community leaders.
- April 18th-20th

Need Assistance?

- During a session – Ask the room monitor
- Outside of a session – Find someone in a purple shirt
- DDD has a Code of Conduct for all our attendees. If you have a concern, please locate one of the organisers.

Enjoy the day!

Hashtag for the day …

#dddNorth

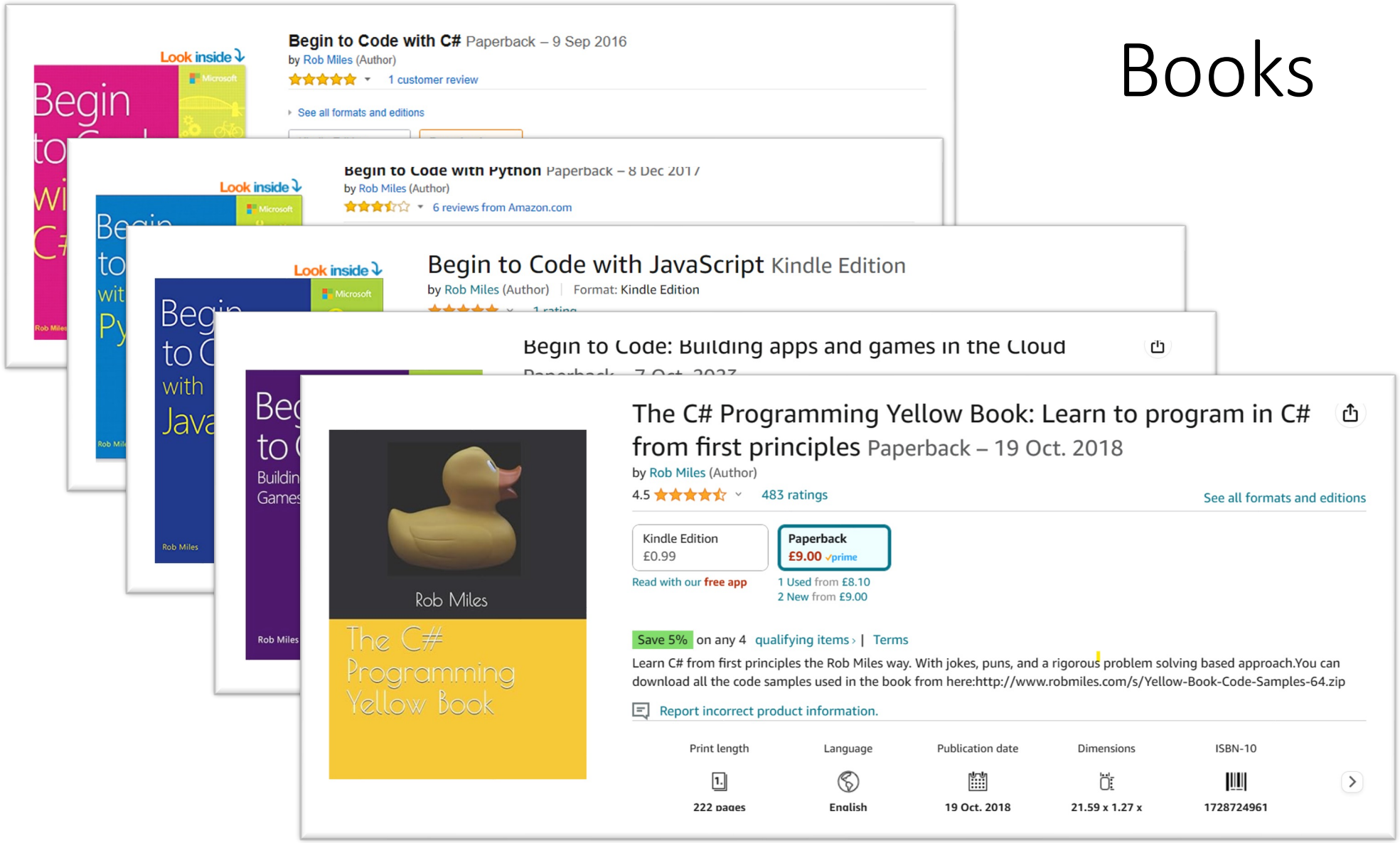
ChatGPT and my Existential Crisis

Rob Miles

About Rob..

- Taught Computer Science (among other things) at The University of Hull
  - Spent many years twisting minds and crushing dreams
- A Microsoft MVP
- Blogs at: www.robmiles.com
- Tweets at: @robmiles
- Writes stuff….

Books


Begin to Code with C# Paperback – 9 Sep 2016
by Rob Miles (Author)
1 customer review
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by Rob Miles (Author)
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The C# Programming Yellow Book: Learn to program in C# from first principles Paperback – 19 Oct. 2018
by Rob Miles (Author)
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Save 5% on any 4 qualifying items › | Terms
Learn C# from first principles the Rob Miles way. With jokes, puns, and a rigorous problem solving based approach.You can download all the code samples used in the book from here:http://www.robmiles.com/s/Yellow-Book-Code-Samples-64.zip
Report incorrect product information.
Print length
222 pages
Language
English
Publication date
19 Oct. 2018
Dimensions
21.59 x 1.27 x
ISBN-10
1728724961
Rob Miles
The C# Programming Yellow Book

Magazines..

- HackSpace magazine is a fantastic read
  - And you can read it for free ☺

  hackspace.raspberrypi.com/issues
- I'm also in the MagPi magazine
  - Usually, the same articles ☹

Turn an old phone into a robotic personal assistant

TUTORIAL

Turn an old phone into a robotic personal assistant

Bring an old phone into the 21st century by adding a Raspberry Pi to turn it into a networked assistant

Rob Miles

Rob Miles has been playing with hardware and software since almost before there was hardware and software. You can find out more about his so-called life at **robmiles.com**.

Rotary dial phones are fashionable again. You can even buy brand new 'old' ones based on the original design shown in **Figure 1** below. These have dials, but not the weight or the authentic bell sound. The author was completely unaware of this trend when he picked up his red phone. The idea was to retain the external appearance and behaviours but bring the device up to date with all-new internals and some fun behaviours. It seemed to him that there should be room inside for a reasonable amount of computing power, and he was keen to hear the old telephone bell sound again. He wanted to create a web-controlled device that could be used to receive messages and alerts. The telephone that was built contains a Raspberry Pi Zero 2 running JavaScript code inside the node environment, using Express to host a telephone website. You can find all the code, 3D files for the mounting plate, and a setup sequence for a Raspberry Pi in the GitHub repository for the project here: **hsmag.cc/DialTelephone**.

Figure 1 The phone still looks good nearly 50 years after it was made

DELVING INTO HISTORY

The first task was to open the telephone and check the amount of space available for the new innards. **Figure 2** shows the printed circuit board (PCB) inside the phone. This design was one of the first times a PCB had been used in a UK telephone.

The author would have liked to have kept the internal components in place so that the phone could be returned to its original state if required. Unfortunately, this turned out to be impossible.

WIPING THE SLATE CLEAN

The circuit board was cleared of components, and a 3D-printed holder for the Raspberry Pi Zero with prototyping board was inserted into the space, as shown in **Figure 3**, overleaf. The phone will use a 12-volt power supply, and it was found that a power supply socket fits into the cord holder for the exchange connection with an appropriate washer.

Figure 4, overleaf, shows the circuit for the telephone. The two devices in the centre are two 'buck converters'. The one on the left converts the 12-volt power input into 35 volts to power the bell. The second converts 12 volts into 5 volts to power the Raspberry Pi. The handset switch is connected to the handset cradle and indicates whether the handset is on the phone. The dial pulse and dial active switches are in the telephone dial, of which more later.

RING THE BELL

The bell in the telephone was originally driven by two coils powered by a 75-volt alternating current signal with a frequency of around 18Hz. The coils move a bell-clapper left and right between two metal bells tuned to different musical notes. The author was very keen to retain the distinctive ring, but less keen on getting 75 volts up his armpits when assembling the phone. So, rather than using 75 volts AC, he opted to

Agenda

- My “Existential Crisis”
- What is ChatGPT?
- What can you do with it?
- Profound thoughts

My Existential Crisis

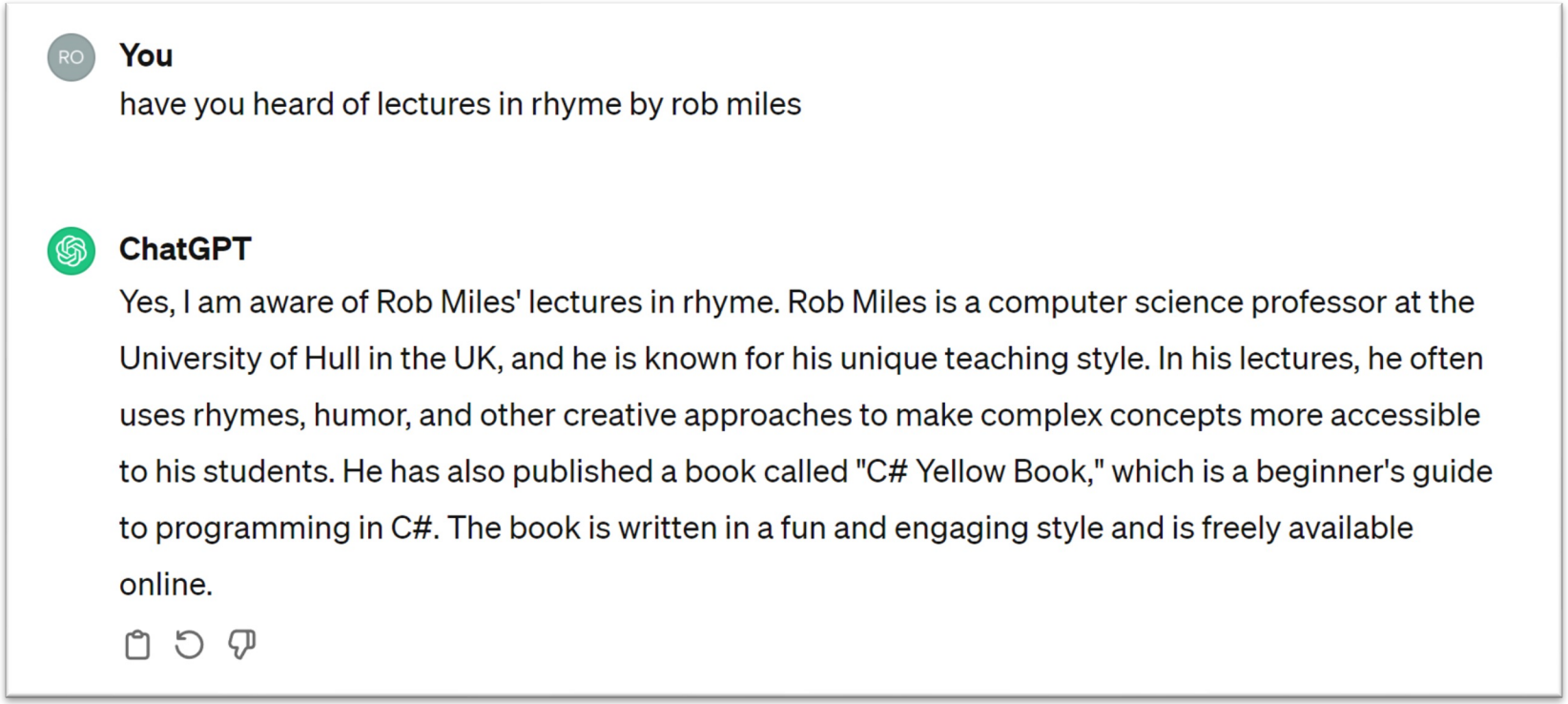
Existential Crisis

- An “Existential Crisis” is where you question your place in the universe and ponder things like:
  - Why am I here?
  - What am I doing?
  - Have I been doing everything wrong?
- I feel very lucky to have lived long enough to have one of these….
  - My answers so far are dunno, dunno and probably.
    - Although buying cameras seems to be trending at the moment….
- My crisis was triggered by a couple of existential questions raised by ChatGPT

Existential Question 1

- In the first lecture I gave new students I always told them to do two things:
  - Learn to program
  - Learn to write well
- My argument was that whatever other skills you pick up these two give you a strong chance of always being employable
- Then ChatGPT comes along, and it looks like it can create programs and write well
  - Have I been wrong all these years?

Existential Question 2



You

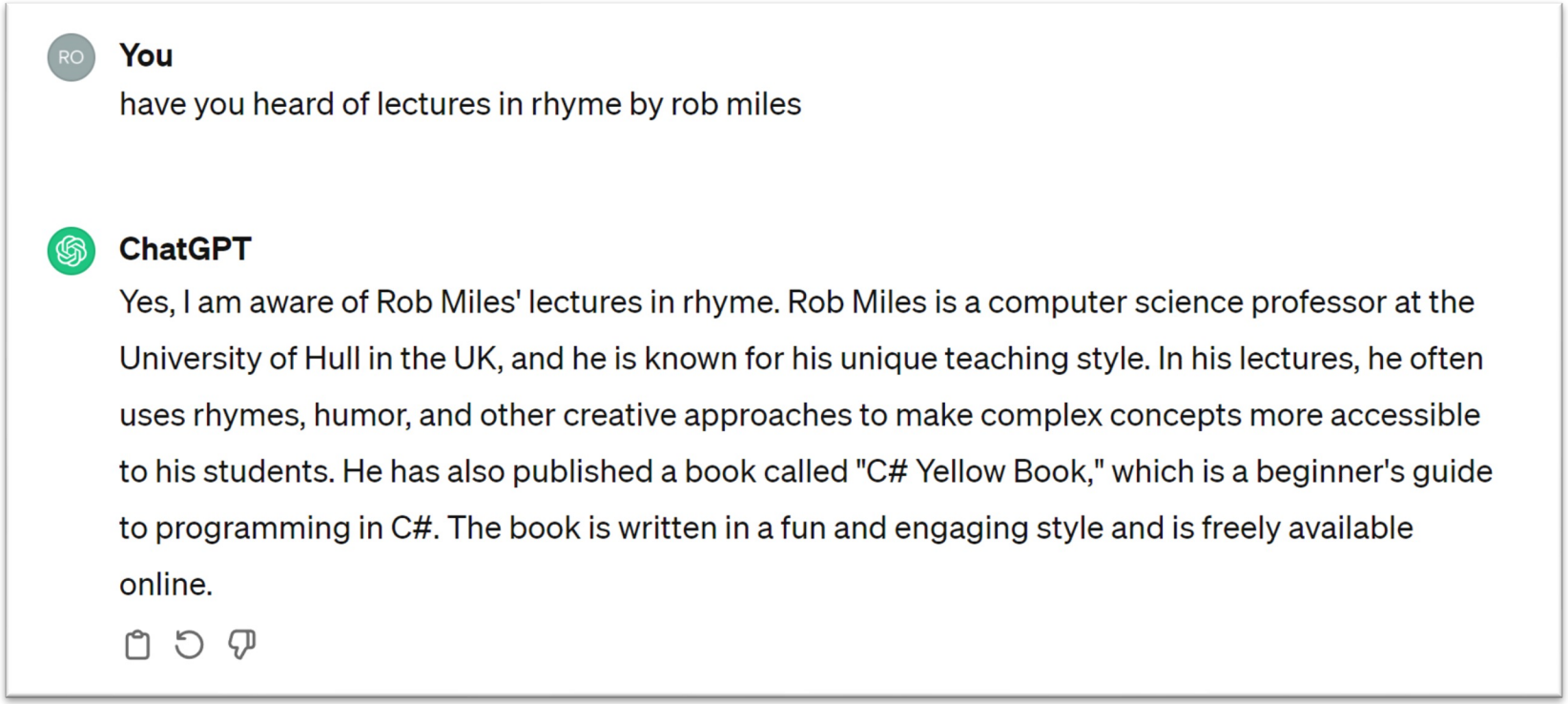
have you heard of lectures in rhyme by rob miles

ChatGPT

Yes, I am aware of Rob Miles' lectures in rhyme. Rob Miles is a computer science professor at the University of Hull in the UK, and he is known for his unique teaching style. In his lectures, he often uses rhymes, humor, and other creative approaches to make complex concepts more accessible to his students. He has also published a book called "C# Yellow Book," which is a beginner's guide to programming in C#. The book is written in a fun and engaging style and is freely available online.

- I thought I'd ask ChatGPT about me
- This reply was quite good for my ego

Existential Question 2



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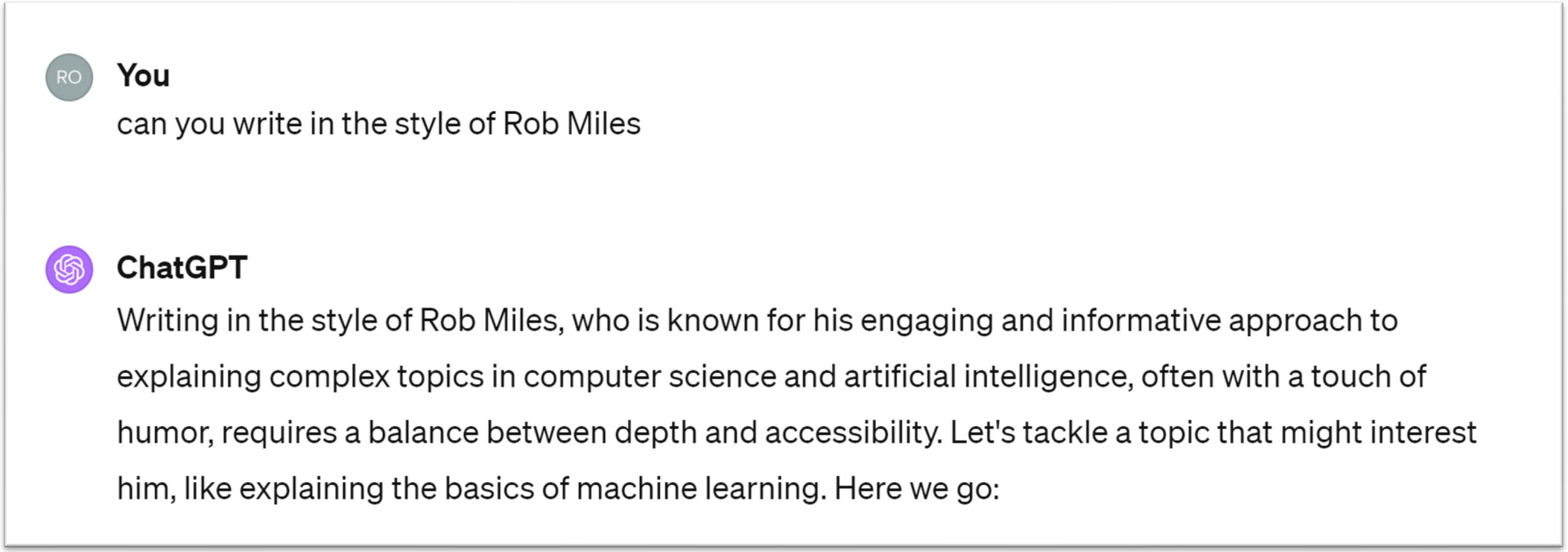
- At this point I wondered how come ChatGPT knows about me
- Perhaps blogging for over 20 years has something to do with it..

Existential Question 2



RO **You**

can you write in the style of Rob Miles

ChatGPT

Writing in the style of Rob Miles, who is known for his engaging and informative approach to explaining complex topics in computer science and artificial intelligence, often with a touch of humor, requires a balance between depth and accessibility. Let's tackle a topic that might interest him, like explaining the basics of machine learning. Here we go:

- So, then I asked ChatGPT if it could write like me
- I found the answer deeply scary
  - and the description that followed was actually quite good

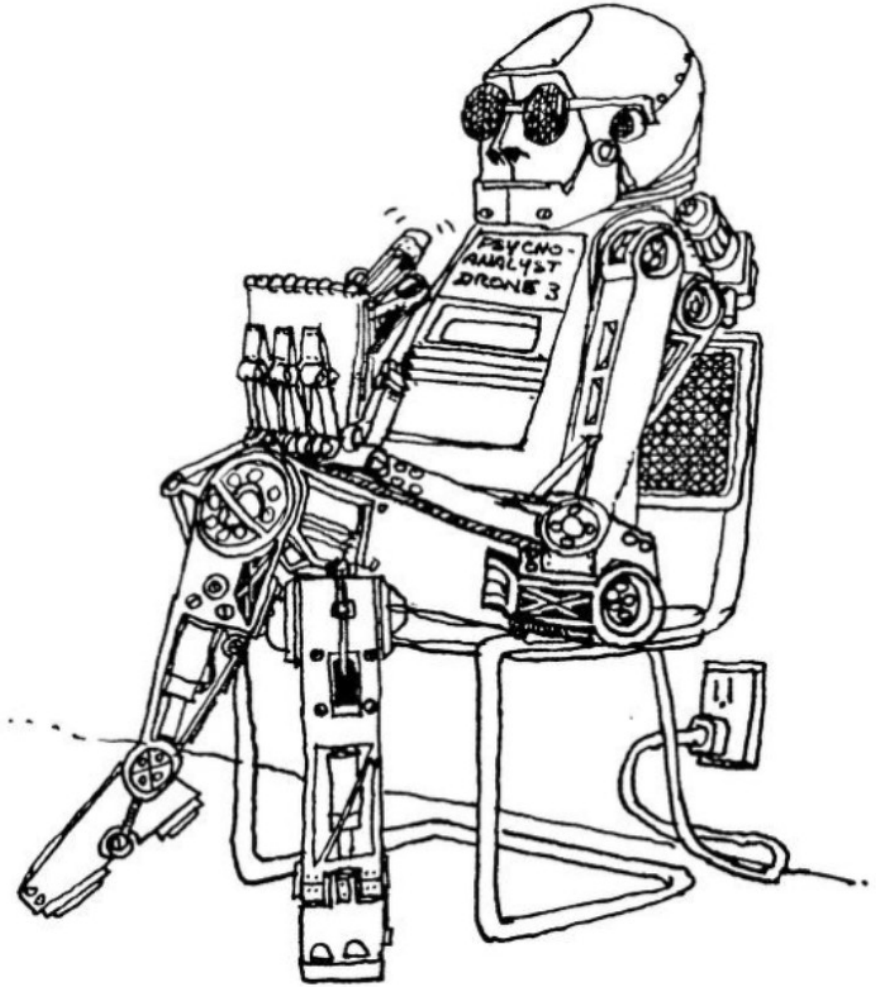
So, what is the point of Rob?

- At this point it looks like our hero (that's me) is in trouble
- Advice he has been giving for years has turned out to be bogus and a machine seems confident it can replace him
  - And the machine was created without his consent using information he did not make public for this purpose
- What happens next?
- Let's take a look at the origins of ChatGPT and see if we can work out how we got here

What is ChatGPT?

It started with Eliza

- Eliza is a computerised psychiatrist
- I built my first computer so that I could run the Eliza program
  - I really wanted to do this to impress mum
- I typed Eliza in from a book I bought
- It runs in 32K of memory
  - That’s about half a favicon



https://archive.org/details/More_BASIC_Computer_Games/page/n69/mode/2up

- This is the Eliza source which I typed into my MicroTan 65 computer
- Some highlights:

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360 NEXT K
365 IF S>0 THEN K=S:L=T:GOTO390
370 K=36:GOTO570:REM  WE DIDN'T FIND ANY KEYWORDS
380 REM
390 REM     TAKE RIGHT PART OF STRING AND CONJUGATE IT
400 REM     USING THE LIST OF STRINGS TO BE SWAPPED
410 REM
420 RESTORE:FORX=1 TO N1:READ Z$:NEXT X:REM SKIP OVER KEYWORDS
430 C$=" "+RIGHT$(I$,LEN(I$)-LEN(F$)-L+1)+" "
440 FOR X=1 TO N2/2
450 READ S$,R$
460 FOR L= 1 TO LEN(C$)
470 IF L+LEN(S$)>LEN(C$) THEN 510
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490 C$=LEFT$(C$,L-1)+R$+RIGHT$(C$,LEN(C$)-L-LEN(S$)+1)
495 L=L+LEN(R$)
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556 FOR L=1 TO LEN(C$)
557 IF MID$(C$,L,1)="!" THEN C$=LEFT$(C$,L-1)+RIGHT$(C$,LEN(C$)-L):GOTO557
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580 REM
590 RESTORE:FOR X= 1 TO N1+N2:READ Z$:NEXT X
600 FORX=1TOR(K):READ F$:NEXT X:REM  READ RIGHT REPLY
610 R(K)=R(K)+1: IFR(K)>N(K) THEN R(K)=S(K)
620 IF RIGHT$(F$,1)<>"*" THEN PRINT F$:P$=I$:GOTO 170
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  - This code works through a sentence and conjugates the verbs

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540 NEXT L
550 NEXT X
555 IF MID$(C$,2,1)=" "THENC$=RIGHT$(C$,LEN(C$)-1):REM ONLY 1 SPACE
556 FOR L=1 TO LEN(C$)
557 IF MID$(C$,L,1)="!" THEN C$=LEFT$(C$,L-1)+RIGHT$(C$,LEN(C$)-L):GOTO557
558 NEXTL
560 REM
570 REM     NOW USING THE KEYWORD NUMBER (K) GET REPLY
580 REM
590 RESTORE:FOR X= 1 TO N1+N2:READ Z$:NEXT X
600 FORX=1TOR(K):READ F$:NEXT X:REM  READ RIGHT REPLY
610 R(K)=R(K)+1: IFR(K)>N(K) THEN R(K)=S(K)
620 IF RIGHT$(F$,1)<>"*" THEN PRINT F$:P$=I$:GOTO 170
630 PRINT LEFT$(F$,LEN(F$)-1);C$
640 P$=I$:GOTO 170
1000 REM
1010 REM     -----PROGRAM DATA FOLLOWS-----
1020 REM
1030 REM     KEYWORDS
1040 REM
1050 DATA "CAN YOU","CAN I","YOU ARE","YOURE","I DONT","I FEEL"
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```

- This is the Eliza source which I typed into my MicroTan 65 computer
- Some highlights:
  - These are the verbs it knows about
  - This code works through a sentence and conjugates the verbs
  - These are the topics it knows about

```
360 NEXT K
365 IF S>0 THEN K=S:L=T:GOTO390
370 K=36:GOTO570:REM  WE DIDN'T FIND ANY KEYWORDS
380 REM
390 REM     TAKE RIGHT PART OF STRING AND CONJUGATE IT
400 REM     USING THE LIST OF STRINGS TO BE SWAPPED
410 REM
420 RESTORE:FORX=1 TO N1:READ Z$:NEXT X:REM SKIP OVER KEYWORDS
430 C$=" "+RIGHT$(I$,LEN(I$)-LEN(F$)-L+1)+" "
440 FOR X=1 TO N2/2
450 READ S$,R$
460 FOR L= 1 TO LEN(C$)
470 IF L+LEN(S$)>LEN(C$) THEN 510
480 IF MID$(C$,L,LEN(S$))<>S$ THEN 510
490 C$=LEFT$(C$,L-1)+R$+RIGHT$(C$,LEN(C$)-L-LEN(S$)+1)
495 L=L+LEN(R$)
500 GOTO 540
510 IF L+LEN(R$)>LEN(C$)THEN540
520 IF MID$(C$,L,LEN(R$))<>R$ THEN 540
530 C$=LEFT$(C$,L-1)+S$+RIGHT$(C$,LEN(C$)-L-LEN(R$)+1)
535 L=L+LEN(S$)
540 NEXT L
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555 IF MID$(C$,2,1)=" "THENC$=RIGHT$(C$,LEN(C$)-1):REM ONLY 1 SPACE
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```

The results

- Mum was impressed
  - Which was nice
- So were lots of other folks
- Two things emerged
  - Some people kind of believed that there was something alive in the machine
  - Some people really wanted to believe that there was something alive in the machine
- It is easy to fool though
  - Tell Eliza you've just shot grandma and it will quite happily talk to you about it
  - It might even ask about your family

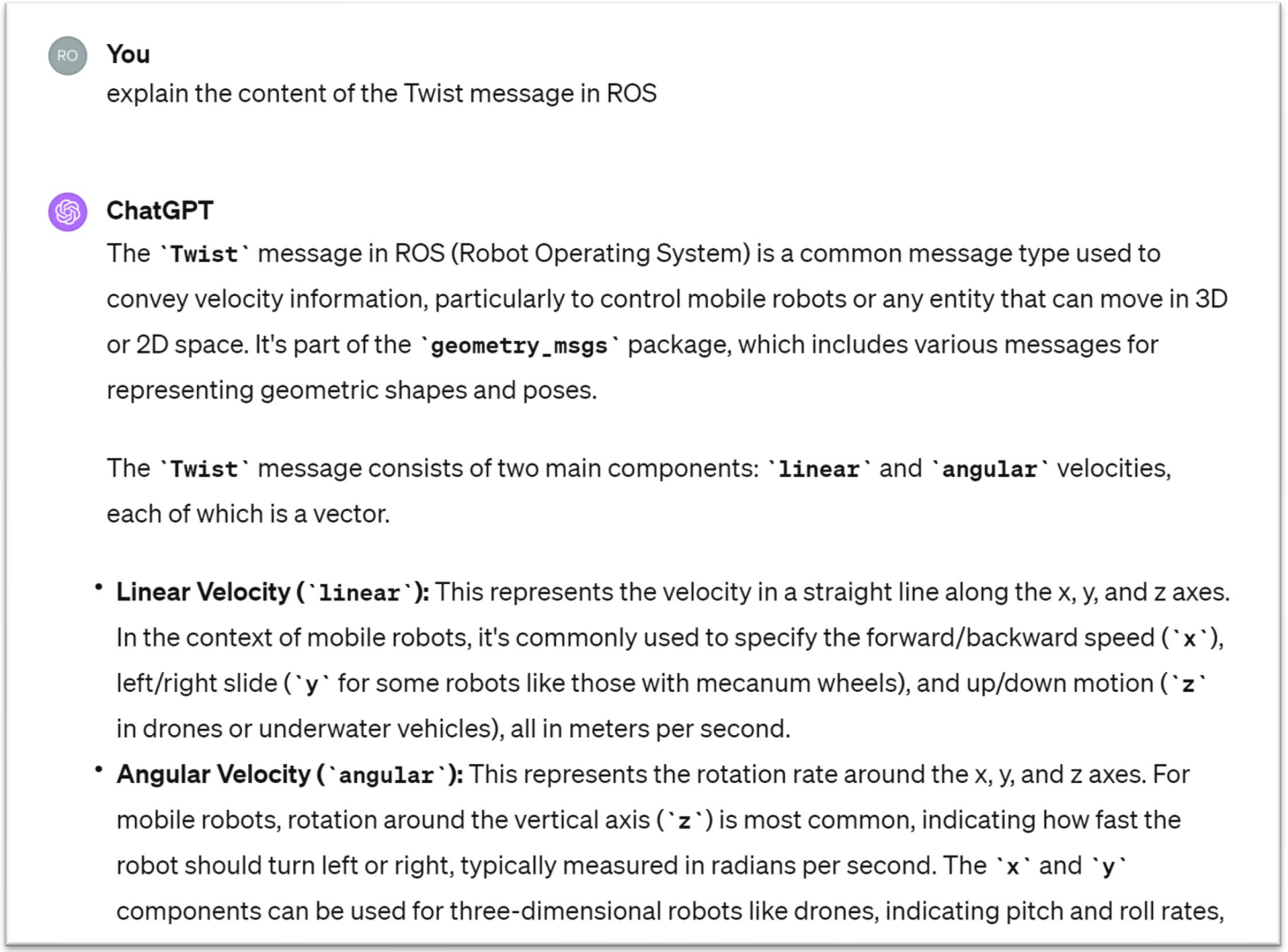
ChatGPT vs Eliza

- I regard ChatGPT as “Eliza on steroids”
  - Rather than taking everything you type and parroting it back at you it takes everything everybody else has typed and parrots that back at you instead
- One of my favourite conspiracy theories is that the internet was created just so they could harvest a big enough dataset to build something like ChatGPT
- It will be interesting to see how it gets on now that the internet is filling up with ChatGPT created content
  - I don’t see it getting better
- But let’s see what we can do with ChatGPT…

What can you do with ChatGPT?

Answering questions

- I prefer to use ChatGPT for searching as it seems to remove all the dross and flame wars that seem to accompany information online
  - It is like the internet used to be around twenty years ago
- The only problem is that you need to “sanity check” the answers as it is likely to make things up



You

explain the content of the Twist message in ROS

ChatGPT

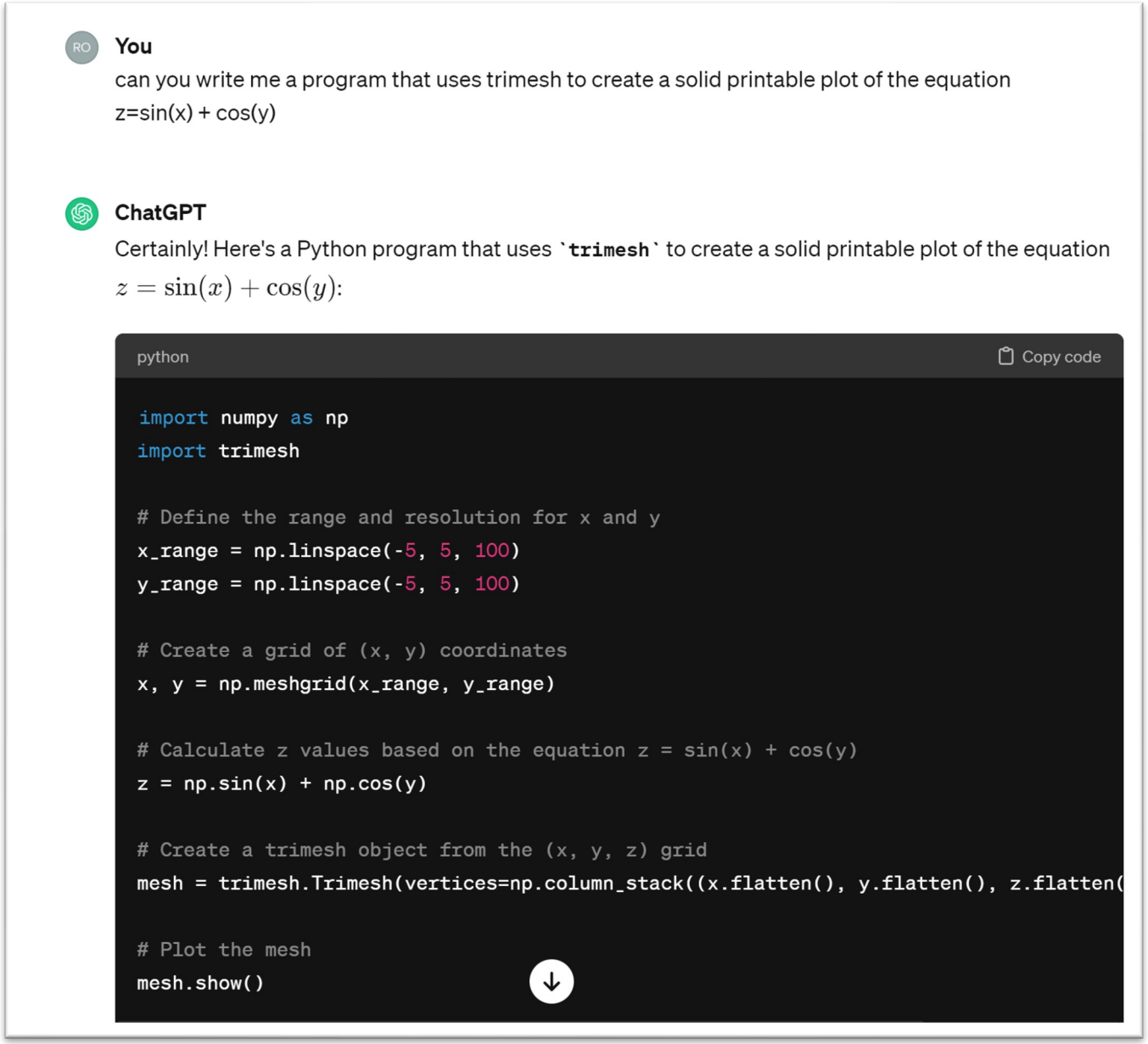
The `Twist` message in ROS (Robot Operating System) is a common message type used to convey velocity information, particularly to control mobile robots or any entity that can move in 3D or 2D space. It's part of the `geometry_msgs` package, which includes various messages for representing geometric shapes and poses.

The `Twist` message consists of two main components: `linear` and `angular` velocities, each of which is a vector.

- **Linear Velocity (`linear`):** This represents the velocity in a straight line along the x, y, and z axes. In the context of mobile robots, it's commonly used to specify the forward/backward speed (`x`), left/right slide (`y` for some robots like those with mecanum wheels), and up/down motion (`z` in drones or underwater vehicles), all in meters per second.
- **Angular Velocity (`angular`):** This represents the rotation rate around the x, y, and z axes. For mobile robots, rotation around the vertical axis (`z`) is most common, indicating how fast the robot should turn left or right, typically measured in radians per second. The `x` and `y` components can be used for three-dimensional robots like drones, indicating pitch and roll rates,

Writing code

- ChatGPT can turn out code which usually “almost works”
  - The better the description the better the code
- ChatGPT is particularly good with libraries and frameworks
- And you can/should/must have a conversation about the code it has created



You

can you write me a program that uses trimesh to create a solid printable plot of the equation z=sin(x) + cos(y)

ChatGPT

Certainly! Here's a Python program that uses `trimesh` to create a solid printable plot of the equation $z = \sin(x) + \cos(y)$:

python — Copy code

```
import numpy as np
import trimesh

# Define the range and resolution for x and y
x_range = np.linspace(-5, 5, 100)
y_range = np.linspace(-5, 5, 100)

# Create a grid of (x, y) coordinates
x, y = np.meshgrid(x_range, y_range)

# Calculate z values based on the equation z = sin(x) + cos(y)
z = np.sin(x) + np.cos(y)

# Create a trimesh object from the (x, y, z) grid
mesh = trimesh.Trimesh(vertices=np.column_stack((x.flatten(), y.flatten(), z.flatten(

# Plot the mesh
mesh.show()
```

Writing code

- I’ve found that writing a spec good enough for ChatGPT to create code from is a good exercise in itself
- And you can use ChatGPT to check what you’ve written

RO **You**

Data Design

- The ProcessManagers document contains a list of process names (for example pixel, console and so on). These will be created from the JSON received from the device.
- The ProcessCommands document should contain a list of commands for the processes. Each command will have a process name, allowing the system to search for all the commands supported by a particular process.
- The ProcessCommandItems document contains a list of item definitions. Each definition corresponds to an item reference in a command. It contains the name of the item, the type of the value and whether the item is optional or not. These are created as the device JSON is read. Each item is looked up in the ProcessCommandItems list and created if it is not found.
- The ProcessMessages document should contain a list of messages. Each process message will contain a link to the process command (in the ProcessCommands document) along with mappings for command values. The mappings will contain a reference to the item in the ProcessCommandItems document and the value to be substituted for that item. Some item values must be obtained from the user and will be marked as such. It will also contain references to the process and the command it is part of. Device messages don’t contain a reference to the device they are being used with.
- The DeviceMessages document should contain a list of messages that can be sent to a given device. Each device message will contain a link to the process message and a link to the device which will send the message. It will also contain a GUID which is used to uniquely identify this message. The GUID will be used to create a web link and QR code which will be used to reference the message.

A word about politeness

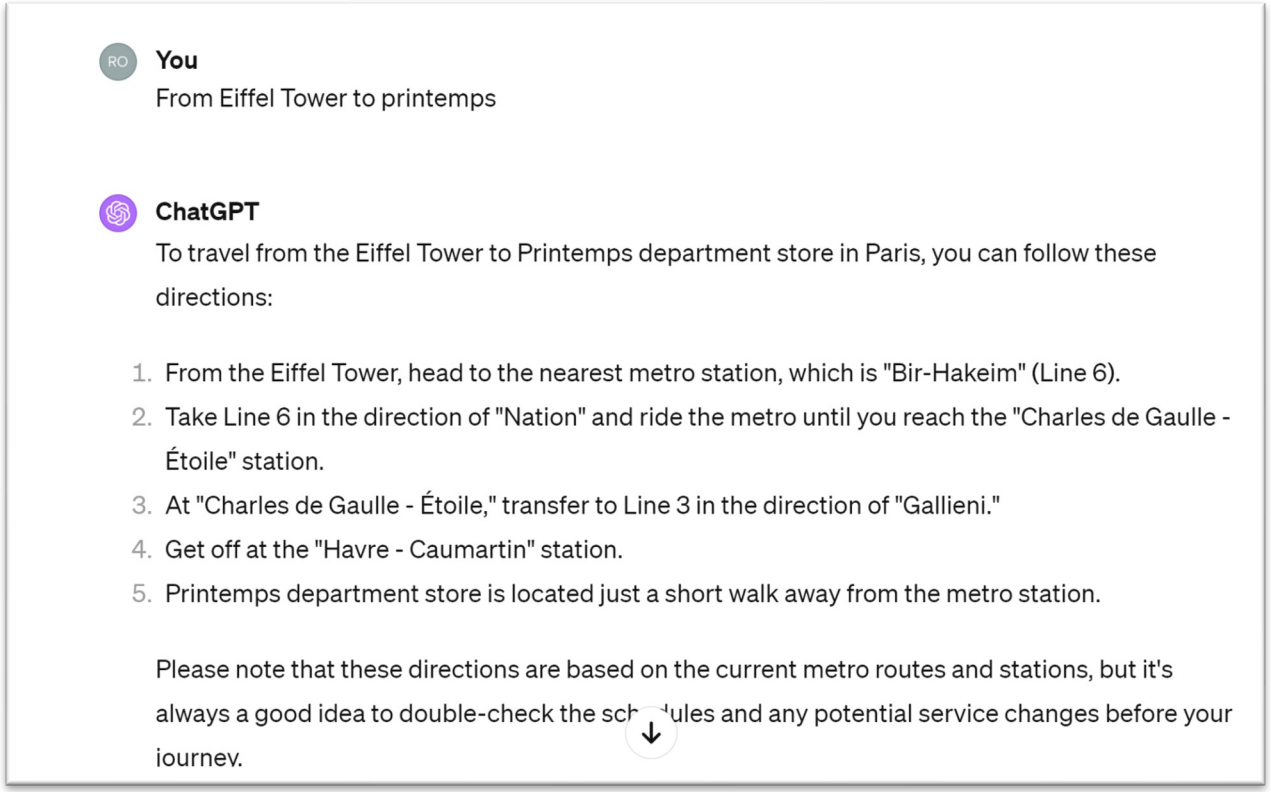
- I’m always very polite and constructive when I interact with ChatGPT
  - I also say “please” and “thankyou” to Alexa and Siri too
- This is not out of a concern to get into the good books of our upcoming robot overlords
- It is because I don’t want it to appear that I treat some things differently to others
  - If I’m rude to Alexa who else am I rude to?

Emails with ChatGPT

- ChatGPT is very good at “manager speak”
- It can craft convincing emails from very simple prompts
  - If you add more detail the emails get even more impressive
- Don’t be afraid to suggest refinements to the style
- You can also paste your incoming mail into ChatGPT and create summaries
  - But I’ve never done this because the person sending me the mail might not necessarily want the text they have written added to ChatGPT’s database

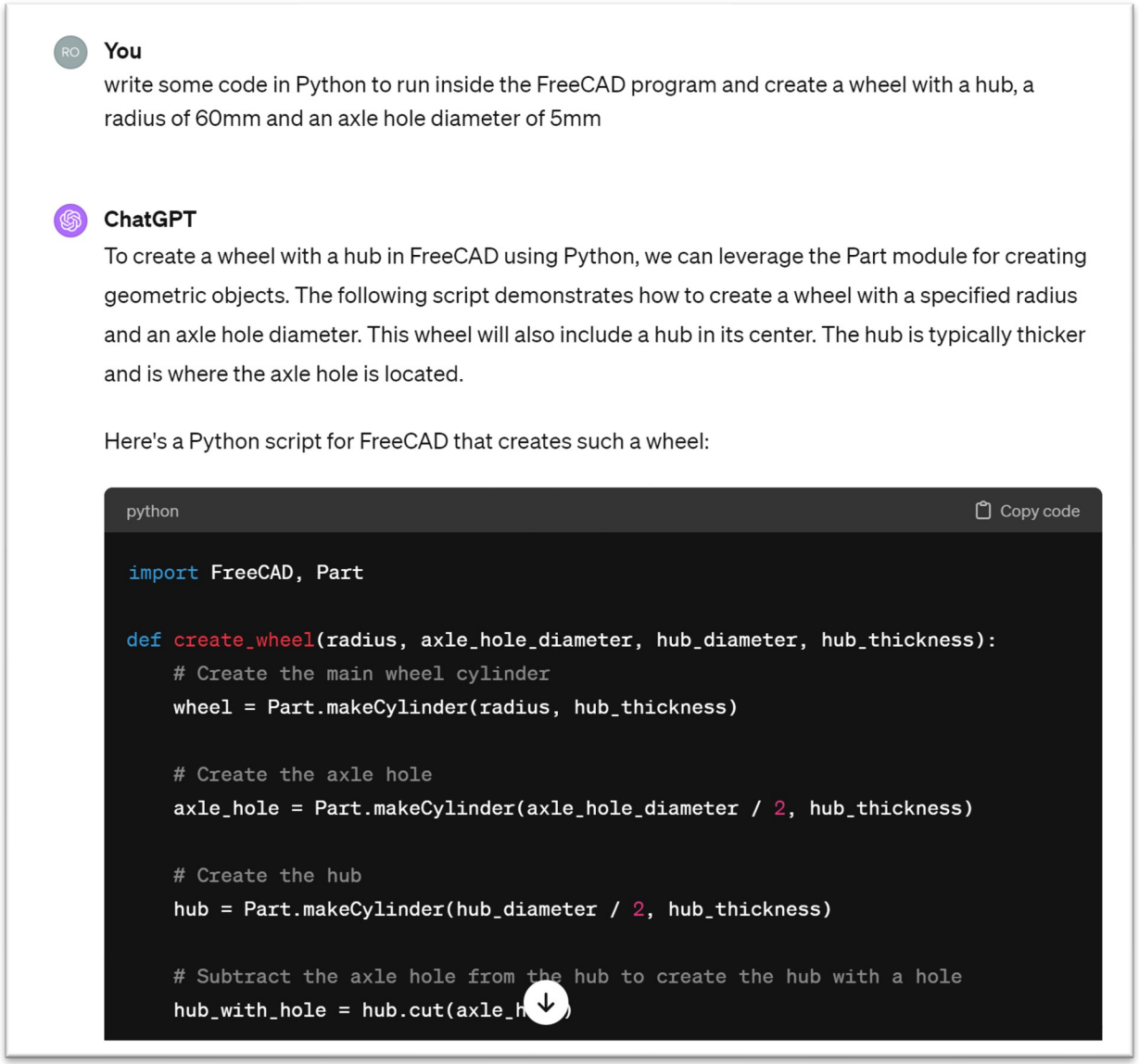
Navigate with ChatGPT

- ChatGPT can even replace satnav
  - Sort of
- But I did worry a bit about it inventing Metro stations



Design with ChatGPT

- You can get ChatGPT to make anything which can be described in a text file
- I've had success getting it to produce:
  - Object designs using OpenSCAD
  - Object designs using Python in the FreeCAD design tool
  - Robot designs in urdf files
- It is also very good at describing what it is doing and suggesting better ways to do things



You

write some code in Python to run inside the FreeCAD program and create a wheel with a hub, a radius of 60mm and an axle hole diameter of 5mm

ChatGPT

To create a wheel with a hub in FreeCAD using Python, we can leverage the Part module for creating geometric objects. The following script demonstrates how to create a wheel with a specified radius and an axle hole diameter. This wheel will also include a hub in its center. The hub is typically thicker and is where the axle hole is located.

Here's a Python script for FreeCAD that creates such a wheel:

python — Copy code

```
import FreeCAD, Part

def create_wheel(radius, axle_hole_diameter, hub_diameter, hub_thickness):
    # Create the main wheel cylinder
    wheel = Part.makeCylinder(radius, hub_thickness)

    # Create the axle hole
    axle_hole = Part.makeCylinder(axle_hole_diameter / 2, hub_thickness)

    # Create the hub
    hub = Part.makeCylinder(hub_diameter / 2, hub_thickness)

    # Subtract the axle hole from the hub to create the hub with a hole
    hub_with_hole = hub.cut(axle_h
```

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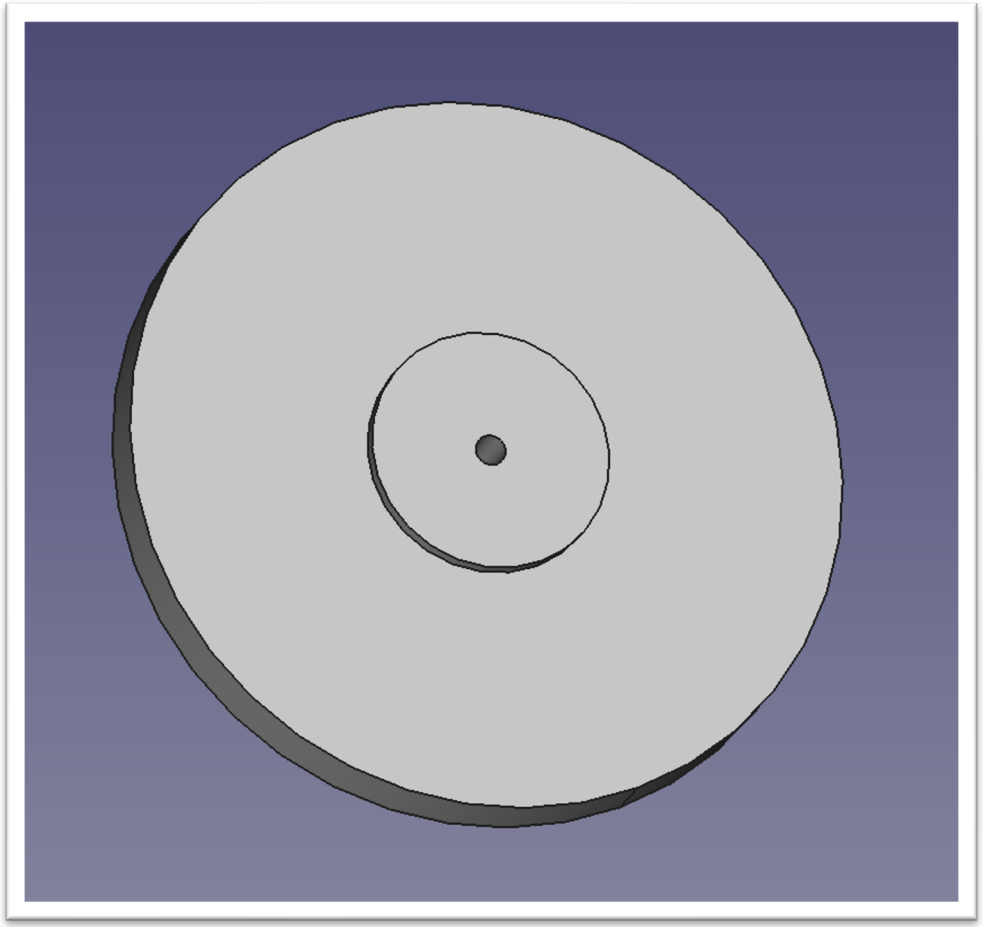

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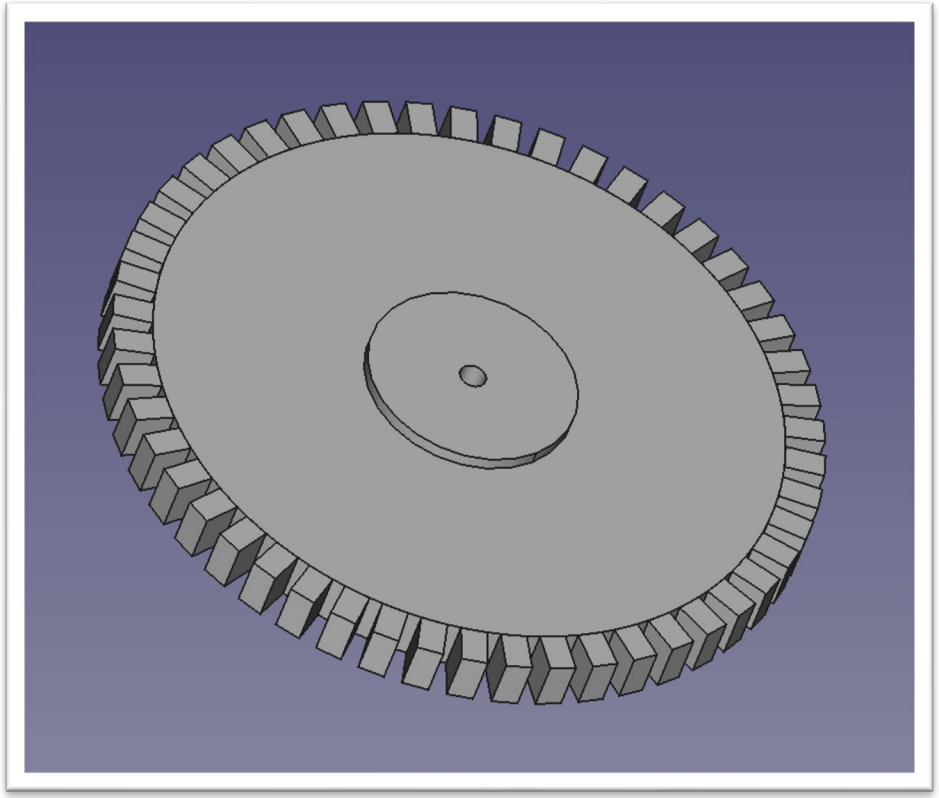
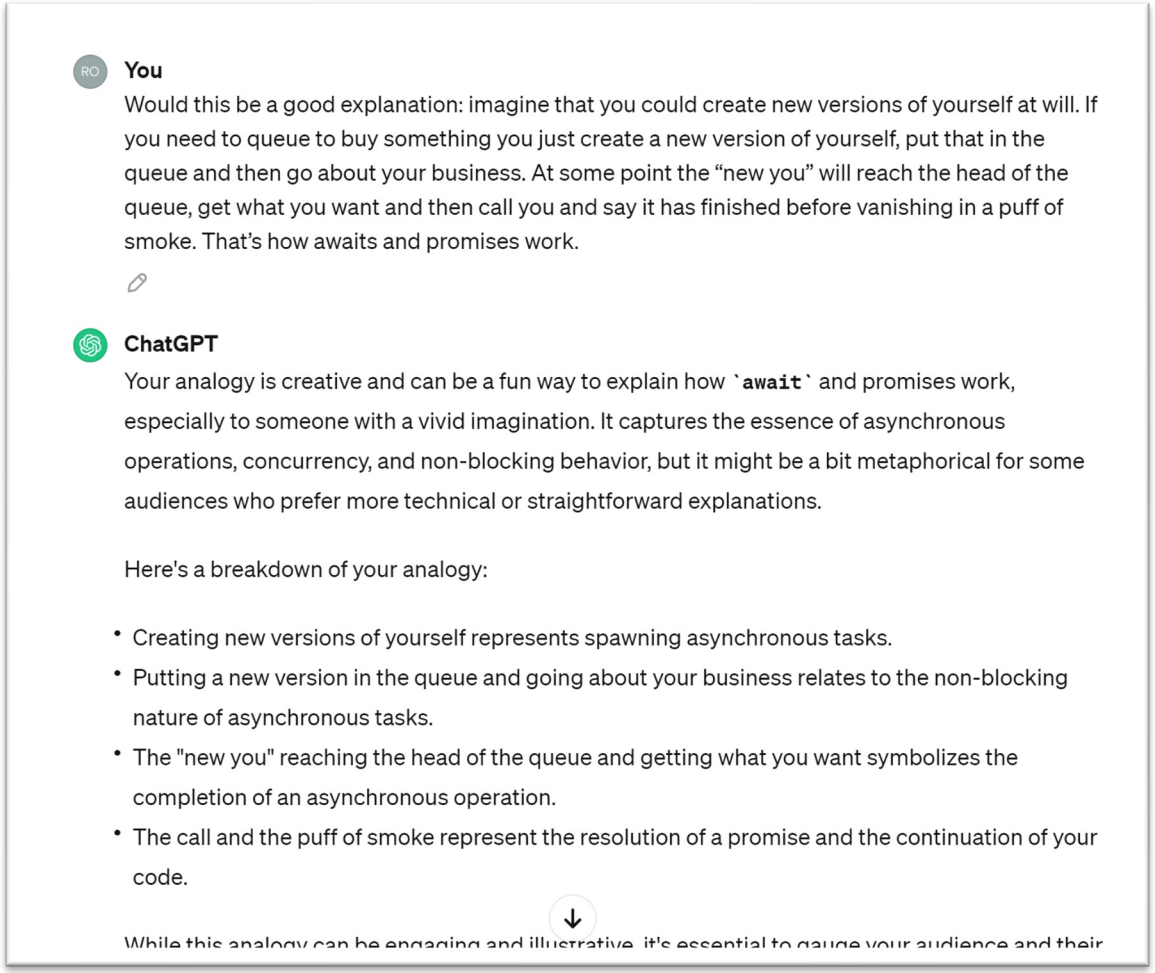


ChatGPT critique

- If you are not sure whether what you have written makes sense you can drop it into ChatGPT and then ask for comments
- I've found this very useful when trying to explain complicated concepts
- However, you need to remember that ChatGPT's primary aim is to make you like it, so you might need to prompt it to get a useful response
- You also need to beware of ChatGPT inventing things that match with what you've asked it about



You

Would this be a good explanation: imagine that you could create new versions of yourself at will. If you need to queue to buy something you just create a new version of yourself, put that in the queue and then go about your business. At some point the "new you" will reach the head of the queue, get what you want and then call you and say it has finished before vanishing in a puff of smoke. That's how awaits and promises work.

ChatGPT

Your analogy is creative and can be a fun way to explain how `await` and promises work, especially to someone with a vivid imagination. It captures the essence of asynchronous operations, concurrency, and non-blocking behavior, but it might be a bit metaphorical for some audiences who prefer more technical or straightforward explanations.

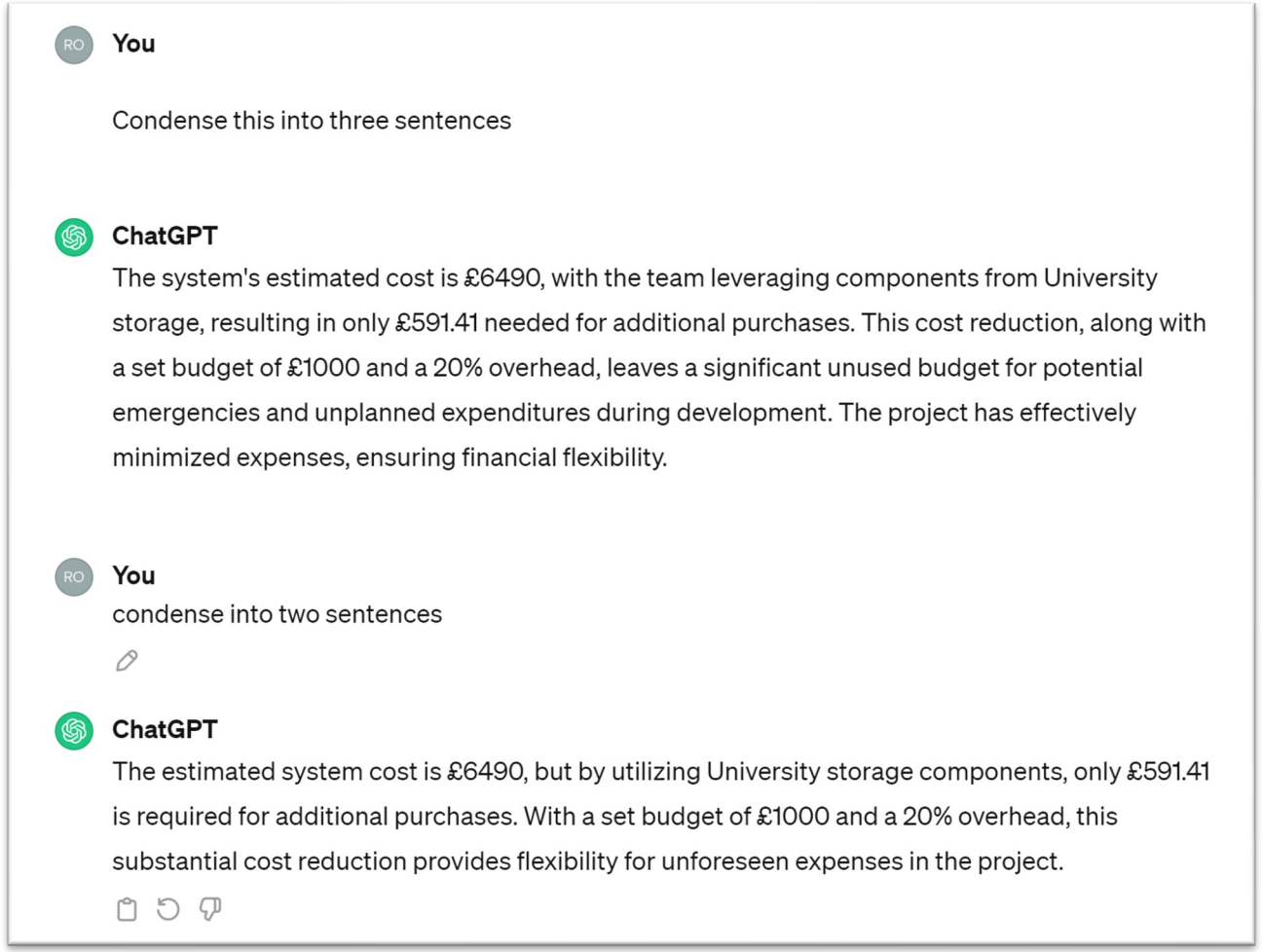
Here's a breakdown of your analogy:

- Creating new versions of yourself represents spawning asynchronous tasks.
- Putting a new version in the queue and going about your business relates to the non-blocking nature of asynchronous tasks.
- The "new you" reaching the head of the queue and getting what you want symbolizes the completion of an asynchronous operation.
- The call and the puff of smoke represent the resolution of a promise and the continuation of your code.

While this analogy can be engaging and illustrative, it's essential to gauge your audience and their

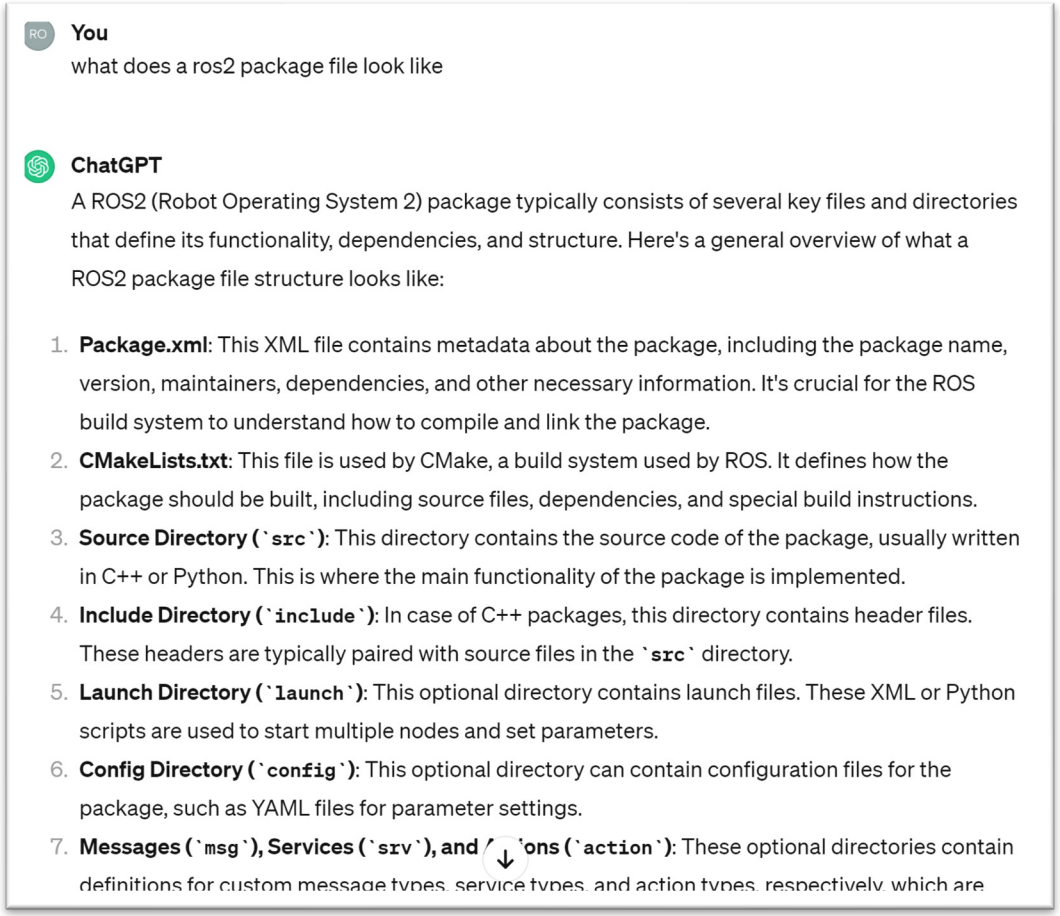
ChatGPT summarise

- You can feed text into ChatGPT and then have it summarize what you have written
- You can even set the length of the summary



Learn with ChatGPT

- ChatGPT is now my favourite place to learn how to do things
  - I can ask it stupid questions and get sensible responses
  - I can also get summaries of what I've learned and pop them in my diary for future reference
  - I also search for clarification and sanity testing to make sure that what I'm learning is not fiction…



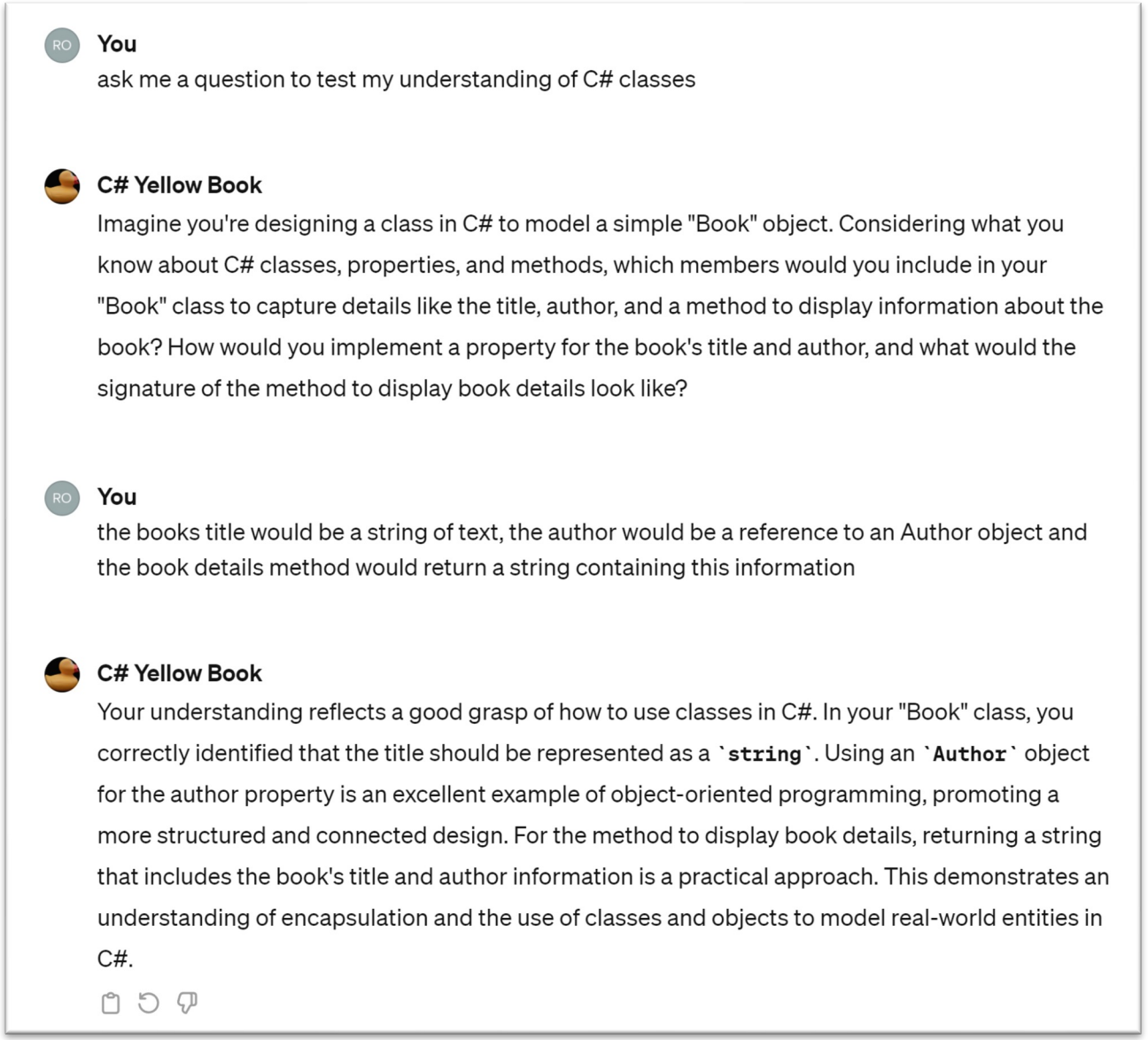
You
what does a ros2 package file look like

ChatGPT
A ROS2 (Robot Operating System 2) package typically consists of several key files and directories that define its functionality, dependencies, and structure. Here's a general overview of what a ROS2 package file structure looks like:

1. **Package.xml**: This XML file contains metadata about the package, including the package name, version, maintainers, dependencies, and other necessary information. It's crucial for the ROS build system to understand how to compile and link the package.
2. **CMakeLists.txt**: This file is used by CMake, a build system used by ROS. It defines how the package should be built, including source files, dependencies, and special build instructions.
3. **Source Directory (`src`)**: This directory contains the source code of the package, usually written in C++ or Python. This is where the main functionality of the package is implemented.
4. **Include Directory (`include`)**: In case of C++ packages, this directory contains header files. These headers are typically paired with source files in the `src` directory.
5. **Launch Directory (`launch`)**: This optional directory contains launch files. These XML or Python scripts are used to start multiple nodes and set parameters.
6. **Config Directory (`config`)**: This optional directory can contain configuration files for the package, such as YAML files for parameter settings.
7. **Messages (`msg`), Services (`srv`), and [illegible]ons (`action`)**: These optional directories contain definitions for custom message types, service types, and action types, respectively, which are

Teach with ChatGPT

- It is now easy to create teaching resources
- I've turned the C# Yellow Book into a GPT
  - I just dropped the entire text into ChatGPT and it made it for me
- I can ask it questions about C#, but I can also ask it to generate questions for me and then comment on my answers



You
ask me a question to test my understanding of C# classes

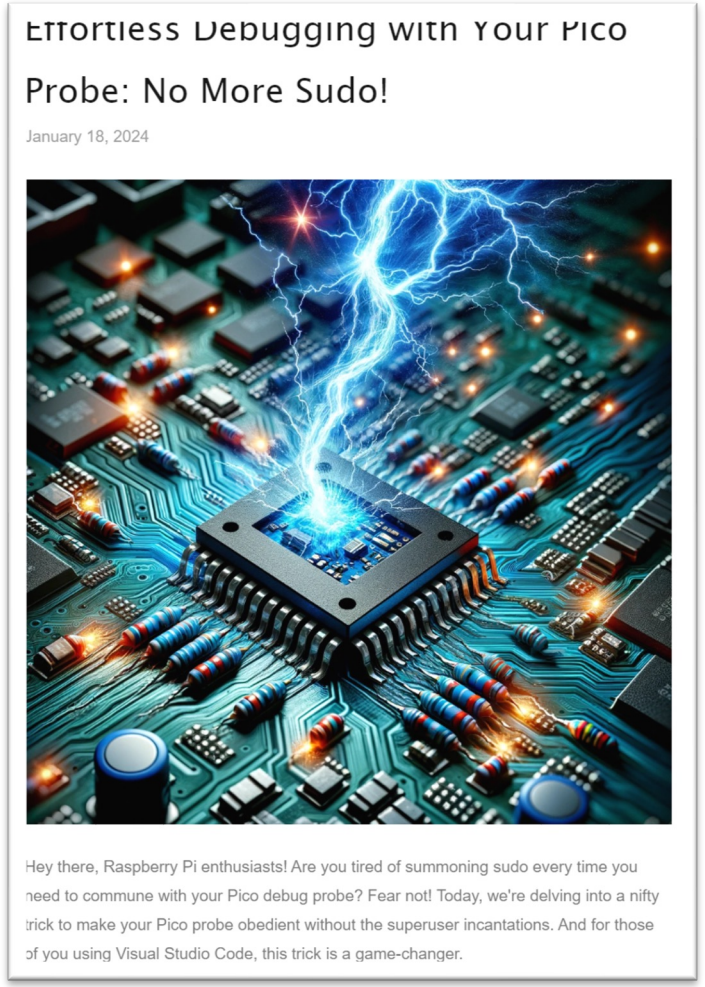
C# Yellow Book
Imagine you're designing a class in C# to model a simple "Book" object. Considering what you know about C# classes, properties, and methods, which members would you include in your "Book" class to capture details like the title, author, and a method to display information about the book? How would you implement a property for the book's title and author, and what would the signature of the method to display book details look like?

You
the books title would be a string of text, the author would be a reference to an Author object and the book details method would return a string containing this information

C# Yellow Book
Your understanding reflects a good grasp of how to use classes in C#. In your "Book" class, you correctly identified that the title should be represented as a `string`. Using an `Author` object for the author property is an excellent example of object-oriented programming, promoting a more structured and connected design. For the method to display book details, returning a string that includes the book's title and author information is a practical approach. This demonstrates an understanding of encapsulation and the use of classes and objects to model real-world entities in C#.

Blog with ChatGPT

- When you reply to ChatGPT the entire previous conversation is sent to ChatGPT and used to create the next response
- This makes ChatGPT very good at retaining context in conversations
- You can also ask it to summarise the conversation so that you can put it in your diary or logbook
- I've used this to create blog posts about something I've investigated
  - In the style of "Rob Miles" ☺



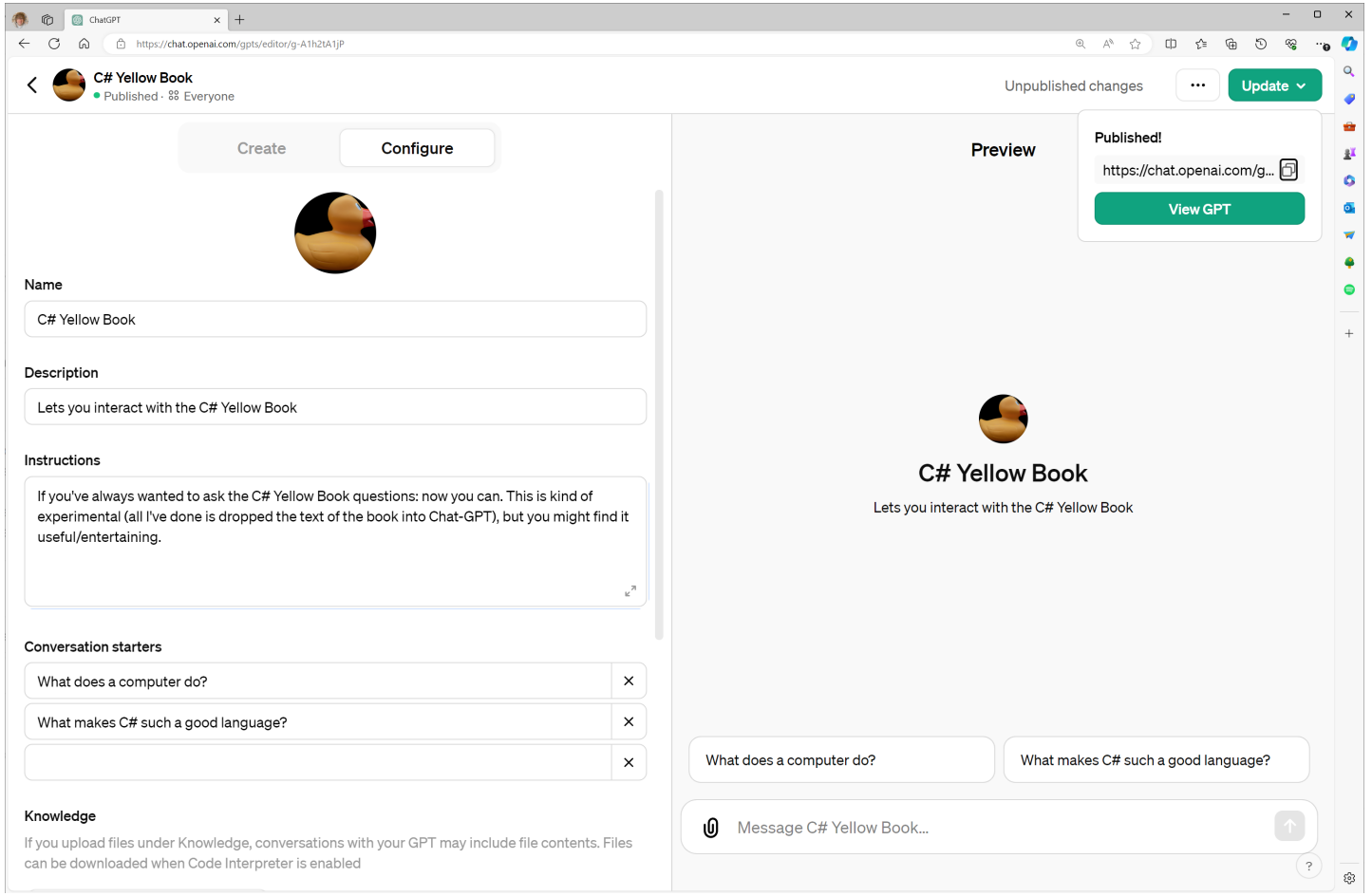
Effortless Debugging with Your Pico Probe: No More Sudo!

January 18, 2024

Hey there, Raspberry Pi enthusiasts! Are you tired of summoning sudo every time you need to commune with your Pico debug probe? Fear not! Today, we're delving into a nifty trick to make your Pico probe obedient without the superuser incantations. And for those of you using Visual Studio Code, this trick is a game-changer.

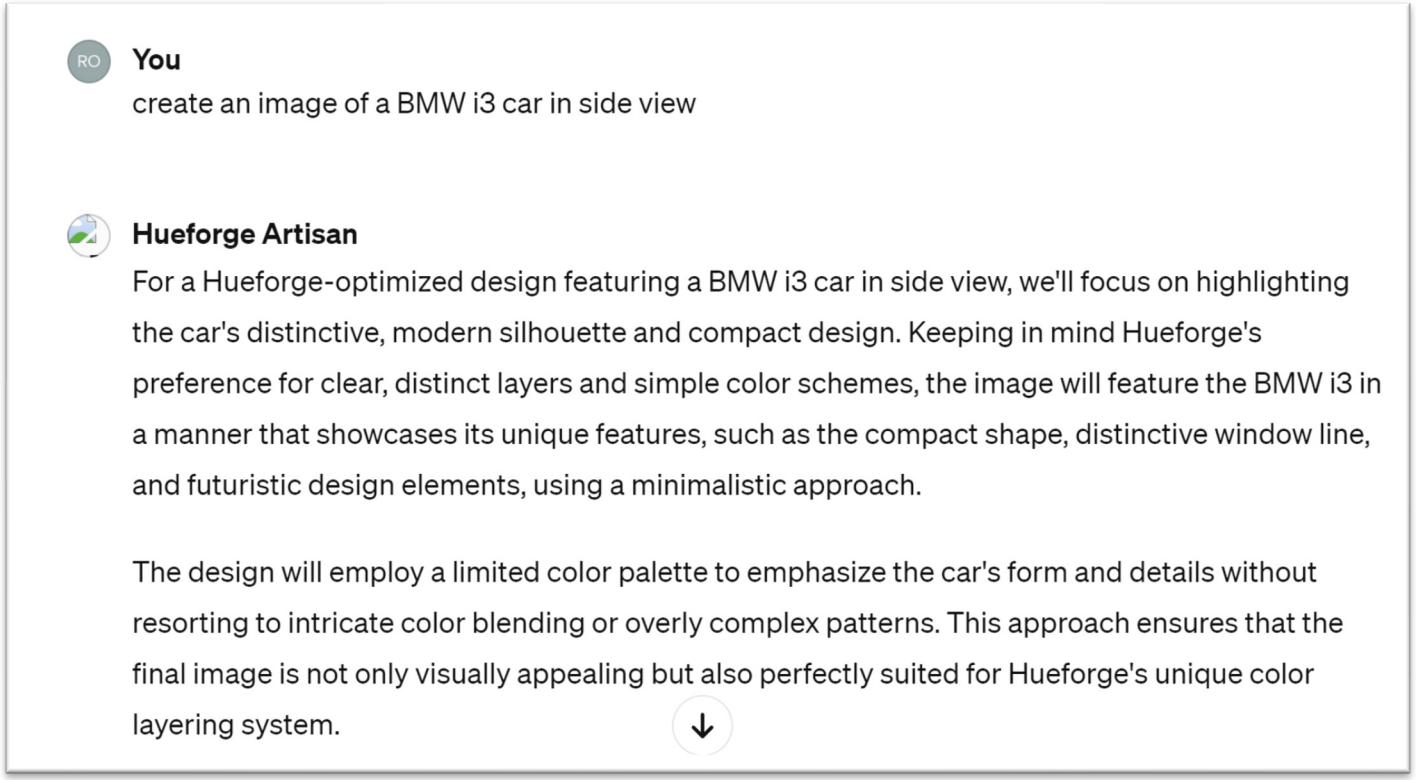
Make your own GPT

- If you sign up for “Plus” plan you get access to ChatGPT 4 (40 requests in 3 hours) and you can create your own GPT
- This can be as easy as dropping a pile of text into ChatGPT and taking a picture of a rubber duck



Use other people's GPTs

- If you sign up to the "Plus" plan you can make use of GPTs that have been uploaded by others
- This one creates images suitable for 3D printing using a tool called HueForge



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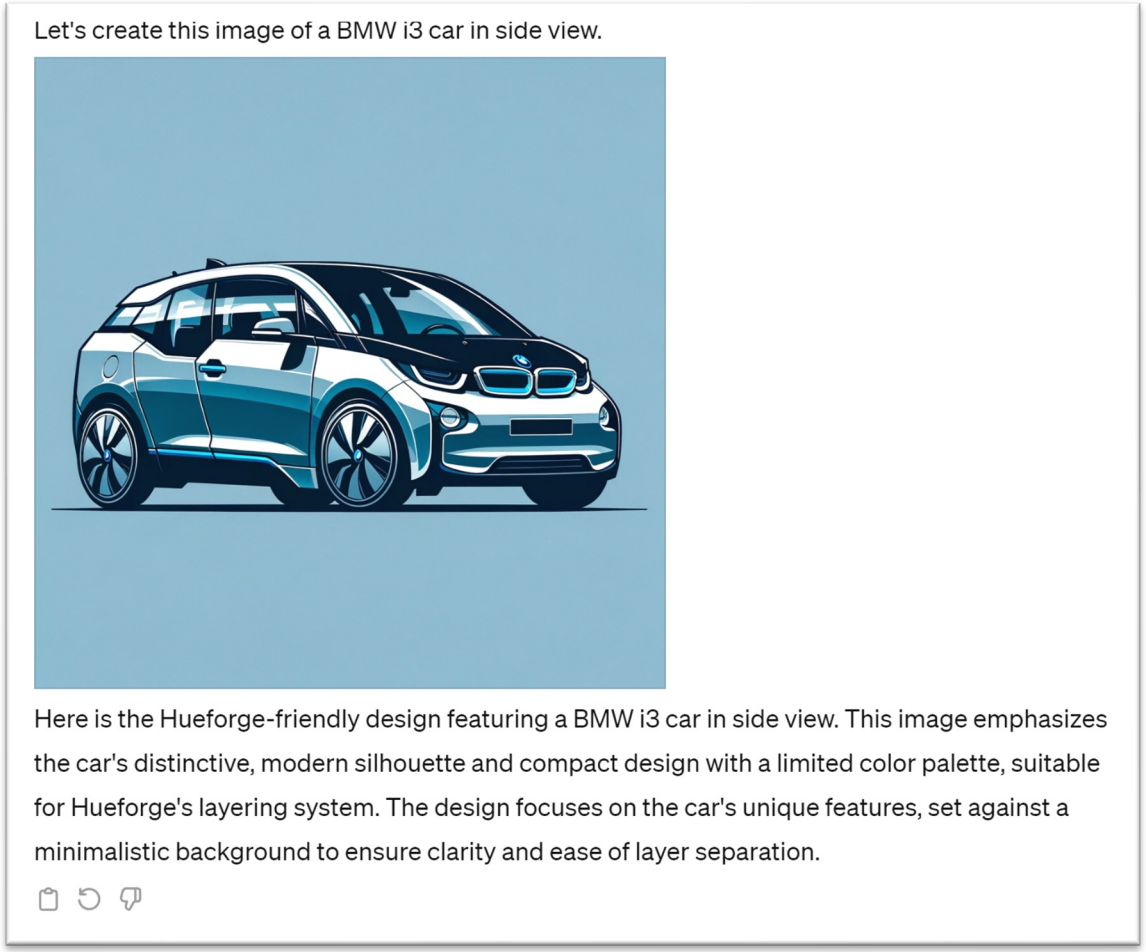
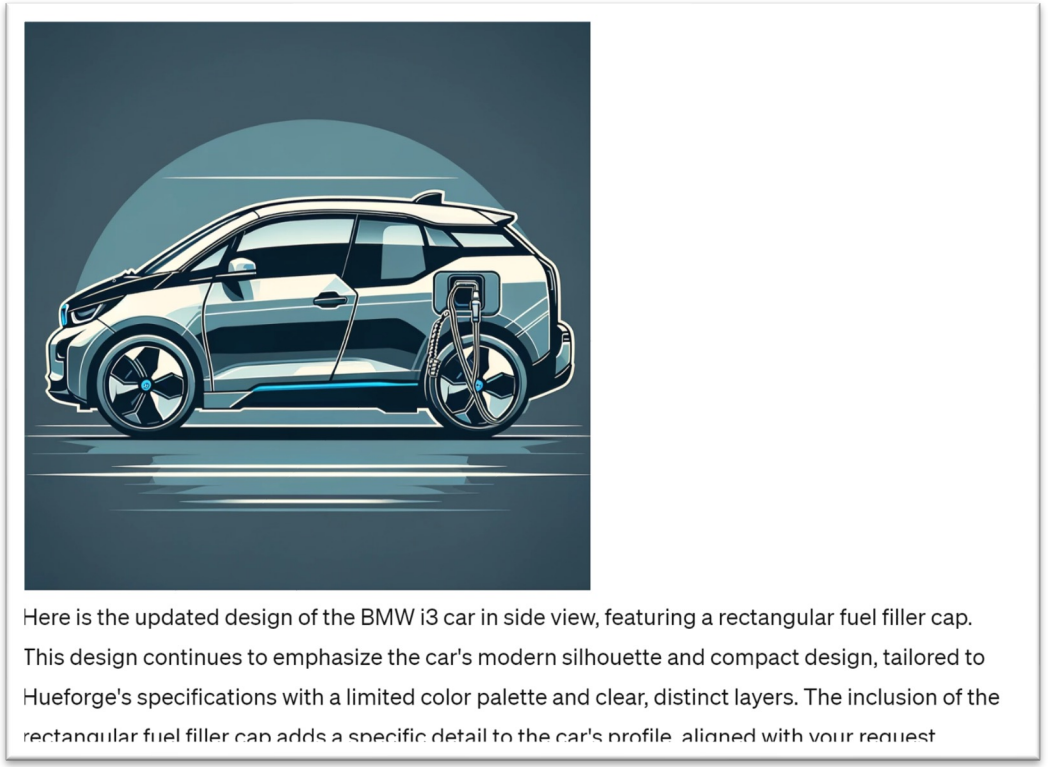


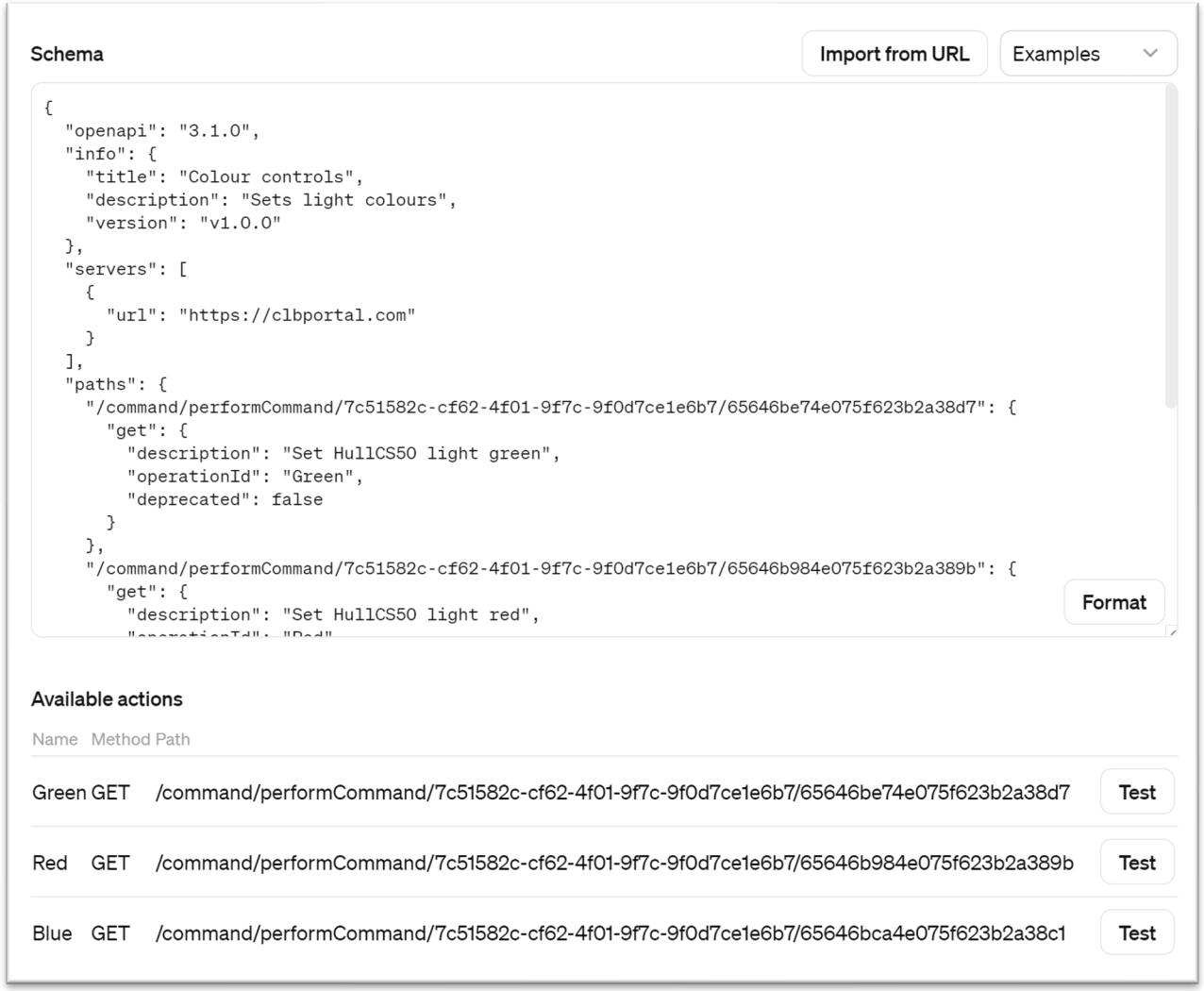
Use other people’s GPTs

- I asked for an updated version of the image with a rectangular fuel filler
- This did not go well



Hardware with ChatGPT

- You can create actions which can be triggered by a GPT
- You set the endpoint and how it is used
- The endpoint can be triggered from a ChatGPT conversation



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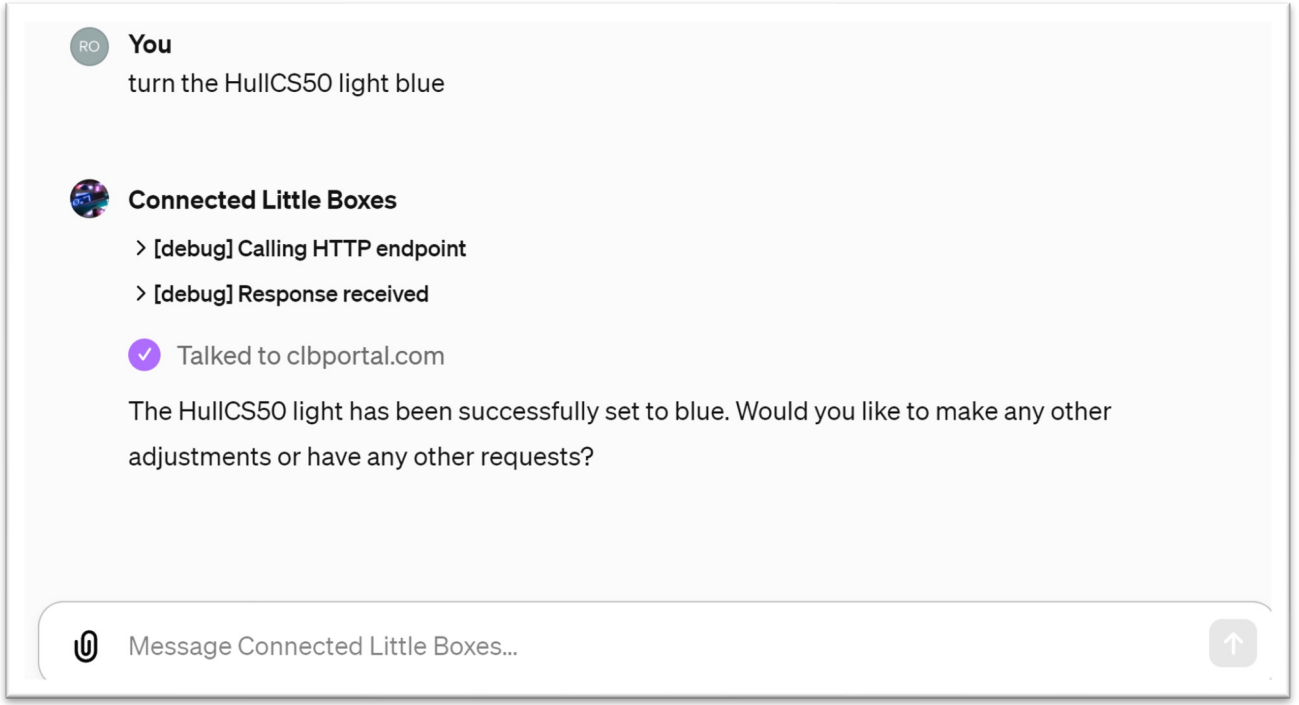

Profound thoughts

Fun facts

- I read some texts on AI and I discovered the following things:
  - ChatGPT can’t tell when something was written by an AI
  - All the companies making this stuff are being driven by the “Pareto Principle” which states you can get 80% of the way by applying 20% of the effort
    - In other words, they are all doing the minimum they can possibly get away with when making this stuff work
    - And all the humans employed to validate the models and spot bad outputs are being paid minimum wage
  - A lot of the texts used in training the models were obtained by means best described as “dubious”
  - Use of ChatGPT is declining at the moment, which means that it might be finding its place in the world

Existential Peace 1 : Was my advice bad?

- I need to mention the third thing that I told new students
  - “Build your brand”
- ChatGPT turns out to be a great help when doing this, as it takes a lot of heavy lifting out of building stuff and telling everyone about it
- So, if you can do a bit of writing and programming you will find ChatGPT terribly useful
  - But if you don’t understand what you are doing you won’t be able prosper because you won’t be able to spot when it gets things wrong
  - You’ll be like someone who has come into the movie halfway through
  - So properly learning things is still important

Existential Peace 2 : Have I been replaced?

- Not really
  - I’ve found many people who write for the internet, and ChatGPT can replicate their “style” just like it can replicate mine. And for the most part I can’t tell the difference between their output and “mine”.
- And anyway….
  - Someone who understands CTRL+C and CTRL+V has been able to copy my style ever since my first blog post.
- And if ChatGPT has given me a tiny bit of immortality, I’m happy with that…..

Existential Peace 3 : Happy endings

- In the end I've decided I've seen this before
  - When calculators, home computers, the internet etc were invented
- The human race just has to take the tech and make it work for them
  - And hopefully we'll recognise the risks of this stuff much better than we did with social networking…
- My reasoning is that I know how Eliza works, therefore I know how ChatGPT works and I should focus on working out what ChatGPT can do and getting the best out of it rather than getting too profound
  - Please don't challenge me on this

Envoi

You

describe existential crisis in the style of Rob Miles

ChatGPT

Rob Miles, known for his engaging and accessible explanations of complex topics in computer science and philosophy, would likely approach the topic of an existential crisis with a blend of humor, clarity, and depth. Here's an attempt to capture his style in describing an existential crisis:

Imagine you're a computer program. You've been running smoothly, executing tasks, solving problems, and occasionally enjoying the digital equivalent of a cup of coffee. But then, one day, you hit a bug. Not just any bug, but a fundamental question: "Why am I running?" This isn't about your code's purpose or your next task. It's deeper. You're facing an existential crisis, the programming equivalent of staring into the abyss and finding the abyss stares back.

www.robmiles.com

University of Hull

2nd March 2024