



GEN-AI
BOOTCAMPS

GEN-AI BOOTCAMP

Mandurah Catholic College

6-9 October 2025

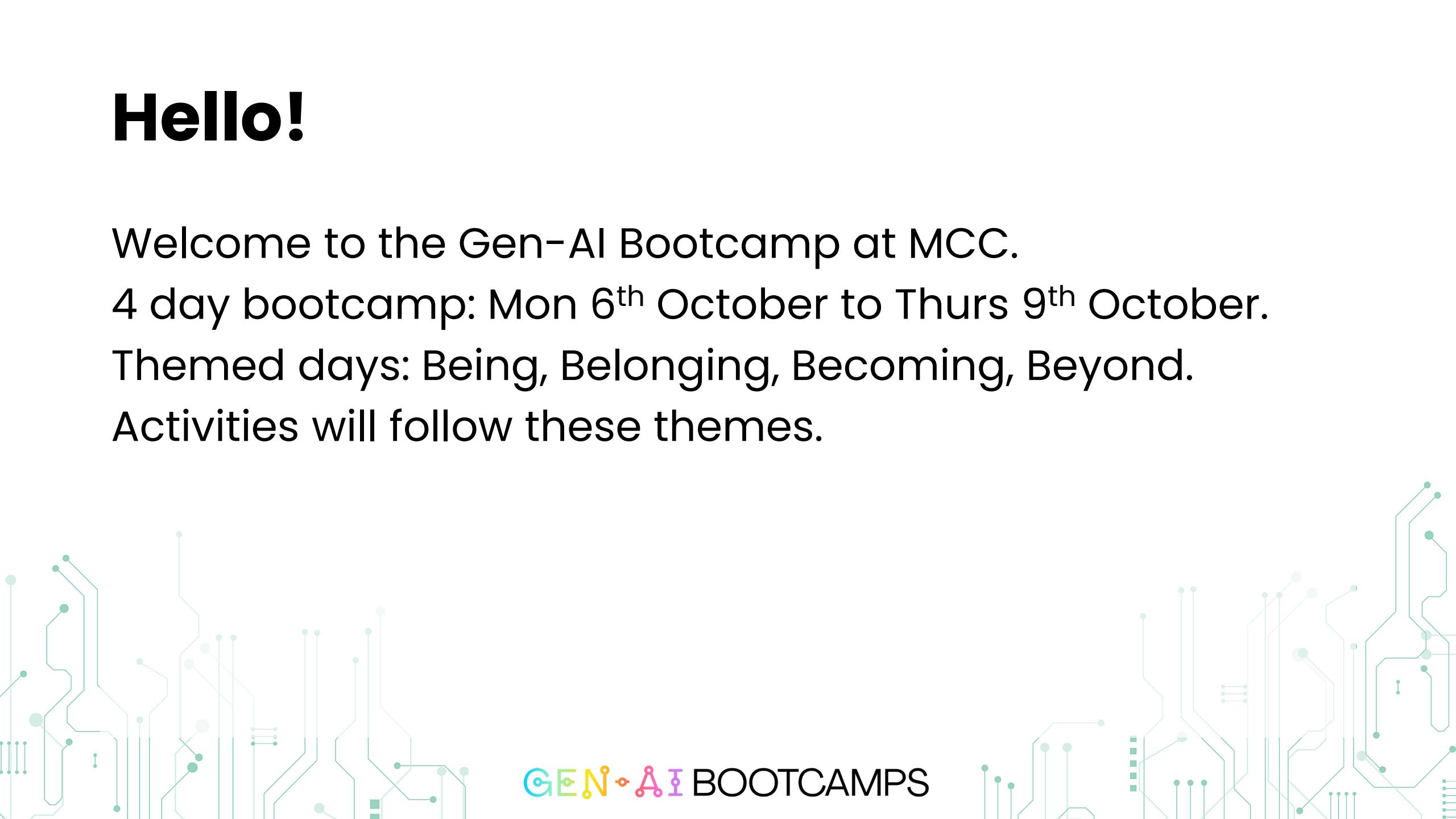
Hello!

Welcome to the Gen-AI Bootcamp at MCC.

4 day bootcamp: Mon 6th October to Thurs 9th October.

Themed days: Being, Belonging, Becoming, Beyond.

Activities will follow these themes.



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Daily Schedule

We have scheduled breaks, but if you would like a break during sessions, head out to the Wellbeing area.

Time	Session
9:30-9:45 (15 min)	Intro / Recap
9:45-10:45 (1h)	Morning Session A
10:45-11:00 (15 min)	Break
11:00-12:00 (1h)	Morning Session B
12:00-12:45 (45 min)	Lunch
12:45-1:45 (1h)	Afternoon Session C
1:45-2:00 (15 min)	Break
2:00-3:00 (1h)	Afternoon Session D & Wrap up

Gen-AI Activities

	DAY 1: BEING	DAY 2: BELONGING	DAY 3: BECOMING	DAY 4: BEYOND
Intro	Bootcamp Information	Recap Training & Data & Programming	Recap of Design Process & Project	Hackathon Progress Board Review
Session A	Introduction to AI: What is it? Where is it used? How does it work? Let's make our own AI Classifier!	Controlling Generative AI: Mini Assistant Design & Coding	Guided AI Design: Testing our AI Assistant	Hackathon: Implementation
Session B	Interacting with Generative AI: Prompt Engineering, System Prompts	What can go wrong with AI? Ethics Activities	AI in industry: Alex Jenkins	Hackathon: Testing & Presentation practice
Session C	Blocky/Python Coding with Generative AI: Prompt Engineering & Coding	Guided AI Design: Designing an AI assistant What is the design process? How do we implement ethical AI?	Hackathon: Brief and Design Outline	Hackathon: Presentations & Discussions
Session D	AI & Data: Sarah James	Guided AI Design: Making our AI assistant (Design Thinking)	Hackathon: Plan and Prep – Design Thinking	Awards & wrap up

Wellbeing Activities

Day 1	Day 2	Day 3	Day 4
Being	Belonging	Becoming	Beyond
ArtJam: Mask making & Knowing self	ArtJam: Different & changing Perspectives	ArtJam: Movement and interaction	Finish project from previous days & work with your hackathon team on logo/art design



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Goals for this week

- Learn about Generative AI, what is it, what it does, and how to use it
- Hear from professionals about how they use AI and what you can do too
- Complete some AI projects and make your own AI tools
- Take part in the wellbeing activities as we learn lots of new things

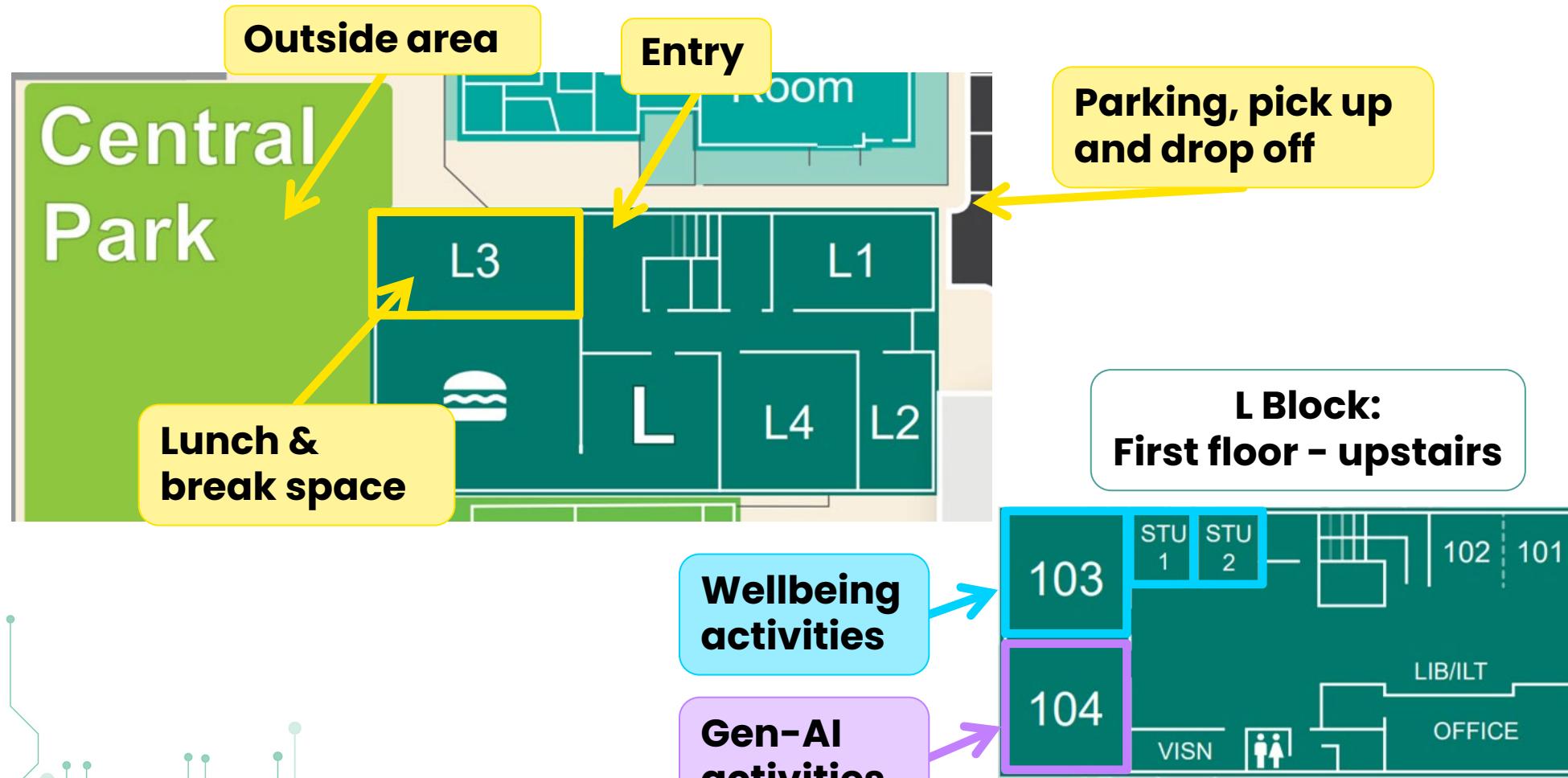
Bootcamp Leaders

- We have lots of people here helping out!
- Anyone in a Gen-AI Bootcamps T-Shirt is here to answer any questions and help you with activities.
- Other people might help out – these people are wearing their Gen-AI Lanyards & name badges.

Safety

- Evacuations
- First Aid: Beth, Elaine

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Extra Toilets

uation

Library upstairs



AI Safety

We will be using different types of AI Models and tools.

When we are interacting with any of our AI tools, there are some ground rules we will try to remember.

These include:

- Not entering personal or sensitive information into any tools.
- Using the tools responsibly and trying to stay on the tasks.
- Asking the mentors if you are unsure about something you want to enter, or something that has been generated.

You'll be uploading your chat records so we can see what you've learnt.

Checkpoints & Feedback

We'll sometimes ask you to complete a short quiz or survey.

This is to make sure we are supporting you effectively, and to find out what we can do better at!



Checkpoint

Helps us understand what you know & how you're going.



Feedback

JB HI-FI

Tells us how we're doing with teaching & supporting you.

Discussions & Groups

We might ask you to do something in a group. You don't have to do everything in the groups. If you'd rather take a break or work individually, that's ok.

We might ask you later if you want to join in – you can decide!



Review & Reflect

Discuss with your group or consider these points individually.



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DAY 1: BEING

Introduction to Generative AI & Prompting

**Remember to spend some time in
the art space for some wellbeing &
creative activities!**

Today is:
Mask Making &
“Being”



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Today

- Introduction to AI
- Make our own model
- Interacting with Generative AI
- Controlling Generative AI

Artificial Intelligence

- What is artificial intelligence?
- Where have you use artificial intelligence?
 - Siri/Google/Alexa
 - Self checkout cameras
 - Maps apps
- There are many different ways to categorise AI.
- AI is shaped by its learning.
- There are different methods of learning.

Artificial Intelligence:
The theory and development of computer systems able to perform tasks normally requiring human intelligence.

Machine Learning:
The use and development of computer systems that can learn and adapt, by using algorithms and statistical models to analyse & infer from patterns in data.

What animal do you see?

You are an animal identifier.

Here are your instructions:

- Identify the animal in the picture.
- Each picture shows ONE animal.
- Shout out the name of the one animal you see...



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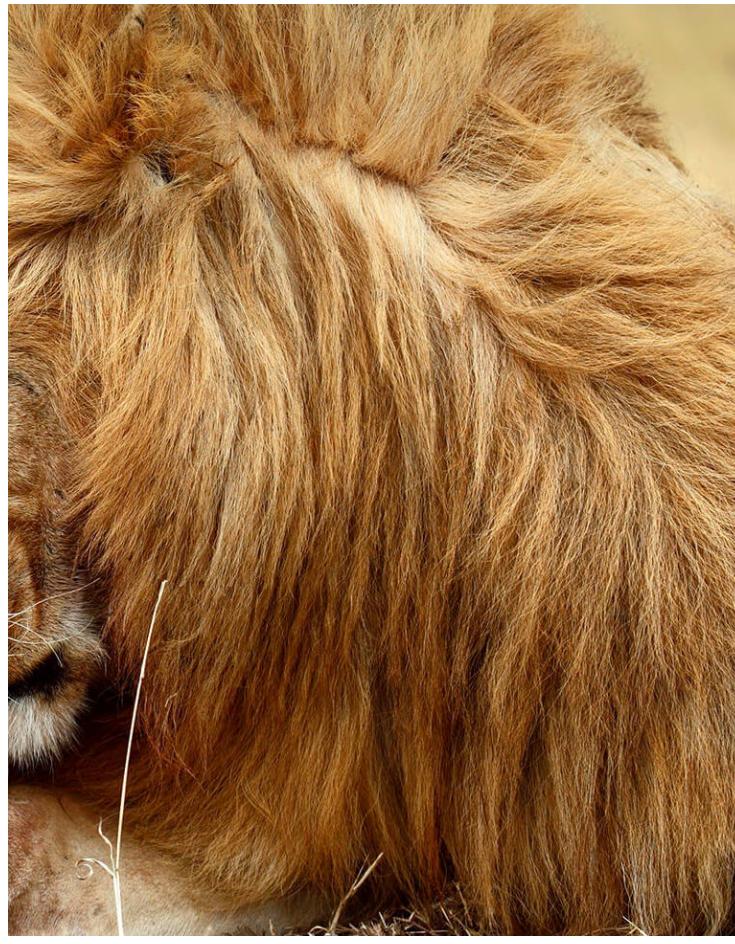
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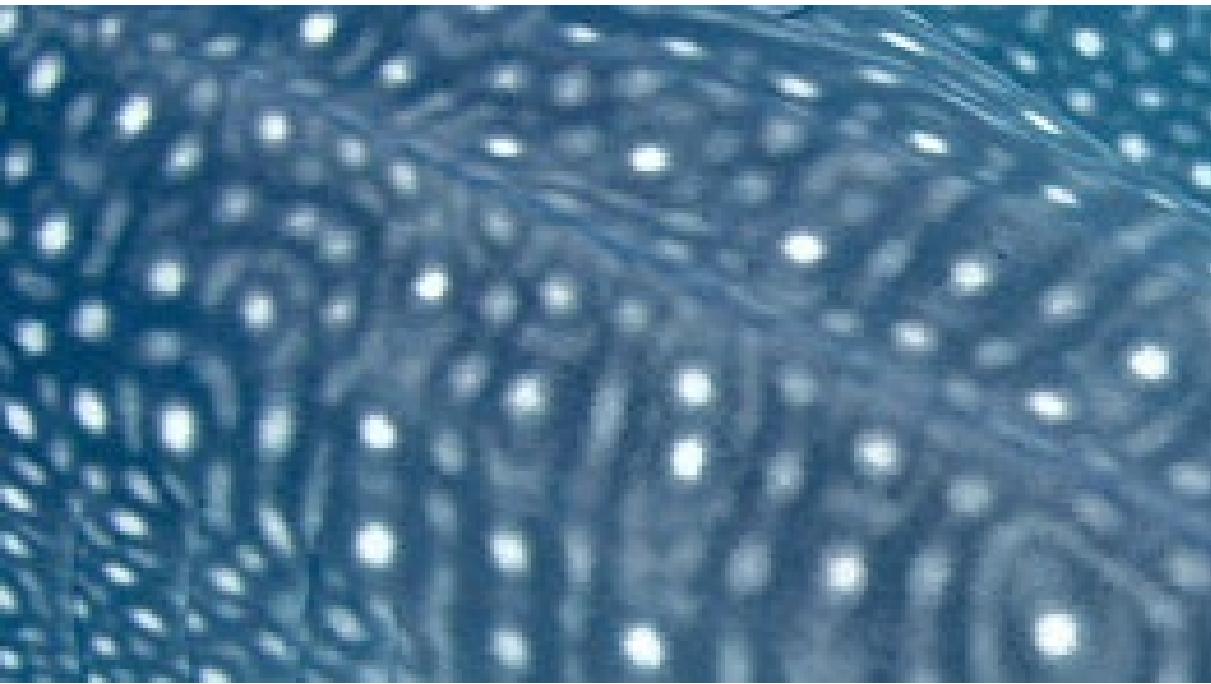
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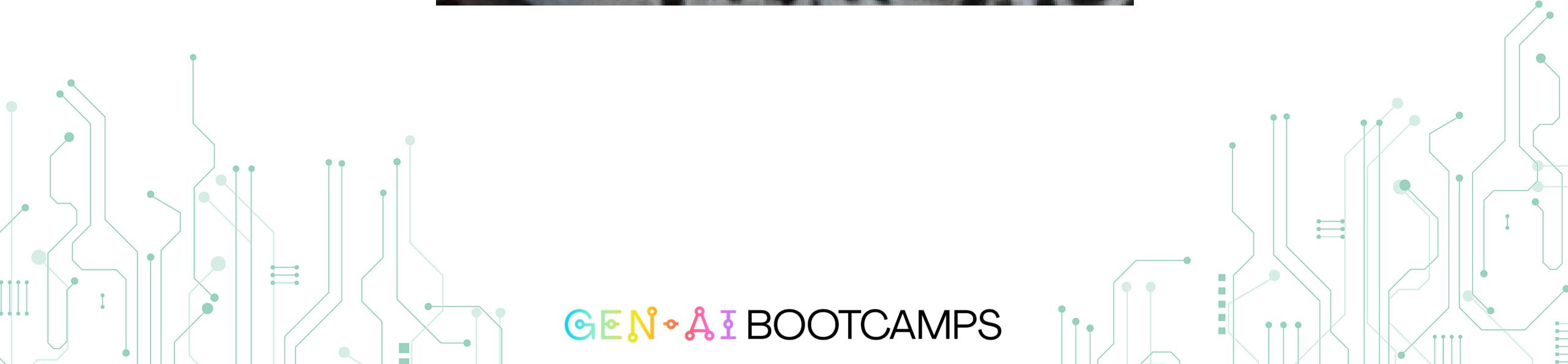
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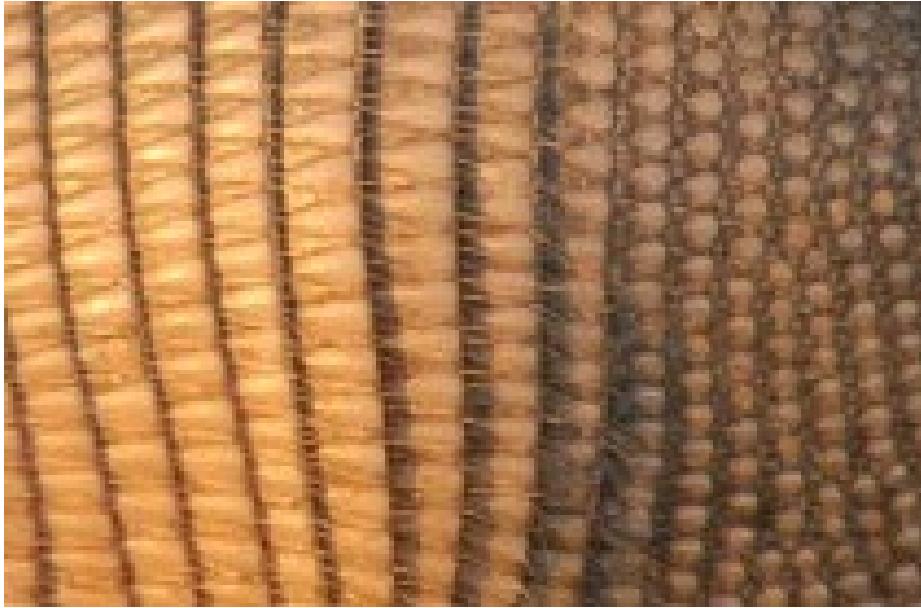


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What is important?

The information:

- What the model knows...
- What the model is given...
- How the model is trained...
- The instructions & purpose...

Let's make a model!

We're going to jump in and make our own model.

We are making a Classifier. You'll be able to see how it is trained, and we'll look at how it works.

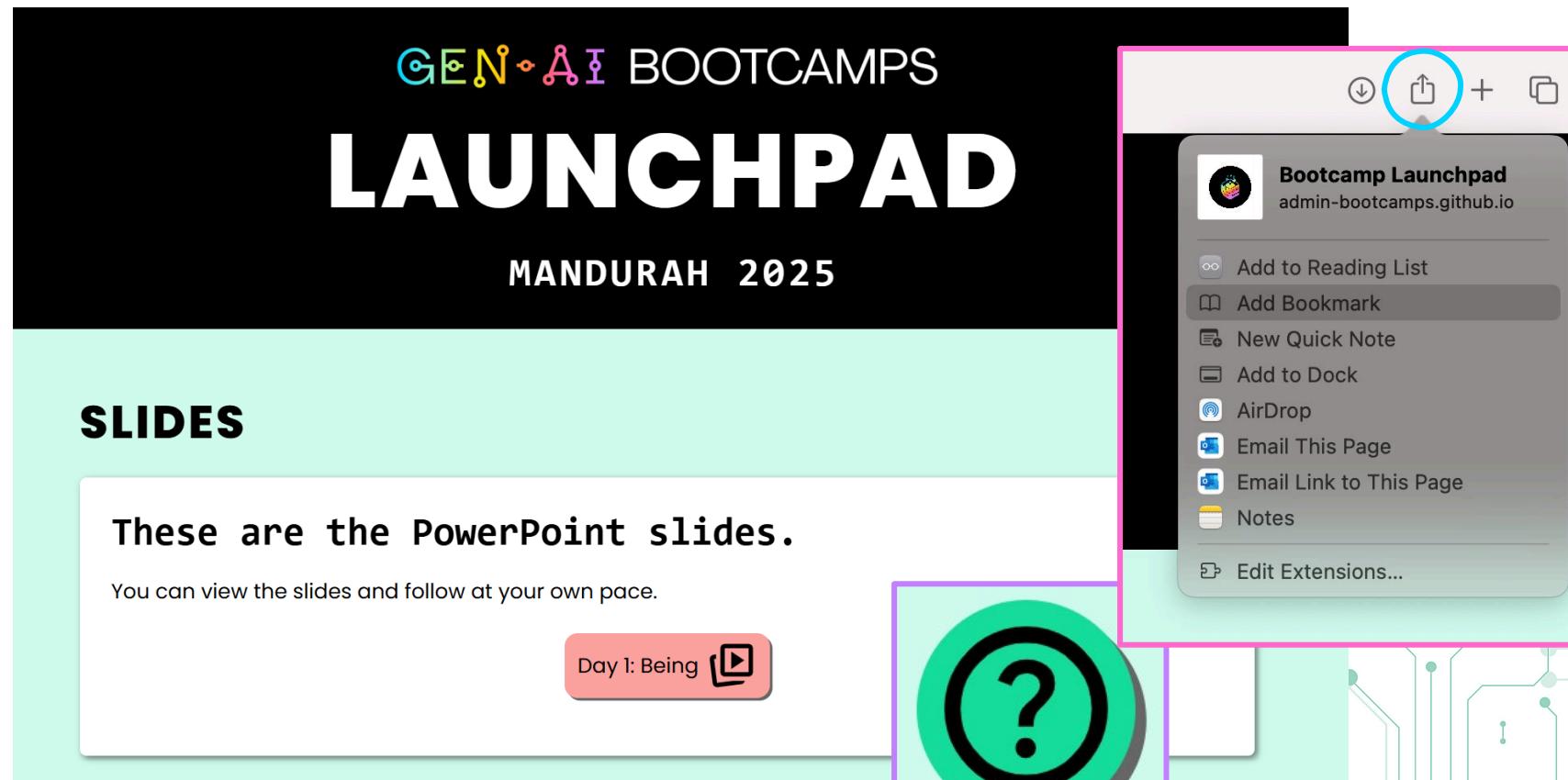
This is a type of 'traditional' AI. We are giving it a specific job to do, and telling it exactly how to do it.

LAUNCHPAD

admin-bootcamps.github.io/bootcamp-mandurah-2025

The Launchpad has all the links and files you'll need for the activities.

Save the Launchpad as a bookmark on your browser!



First, we need our data.

Find your API Keys and file links.

You can find your files and upload ones you want to save for later. When using Scratch and Python, you need your 'API Keys'. You can view them here.

Enter your first name and the first letter of your last name.
Click your picture password and then click 'Login'.

Name

Peter P

Login



Beth C's Keys

You can use these keys for Scratch (Turbowarp) and Python. Don't share your keys with anyone else!

Text Key:

sk-or-v1-d3a***1e3

 Copy

Image Key:

hf_Mw1***UTk

 Copy

Beth C's Files

You can upload, download and view your files here, or sign into dropbox to manage them.

 Open in Dropbox

Upload Files

View & Download Files

Download all:

 Download all 

 Make a Classifier 

 Python files 

 Scratch files 

INSTRUCTIONS

DAY 1: BEING

Make a Classifier

Head to Teachable Machine to start with your classifier.

Teachable Machine



Instructions

In this example, the classifier is 100% sure that this is a shark!



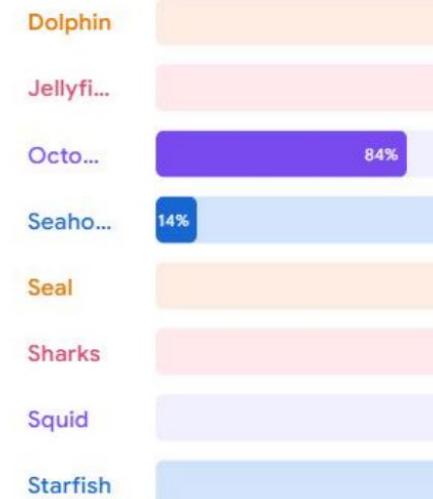
Output



Hmmm... This is a clam, but the Classifier is 84% sure this is an Octopus. Why could this be?



Output



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Review & Reflect

- Does it get things right?
- What does it get wrong?
- How is it classifying things? Can you see any patterns?
- Why might it be getting things wrong?
- What happens when you put a totally different category of image in?

Our Classifier

- This uses Supervised learning (labelled data) to learn from images.
- We then give it an image to classify, and it will try to classify this based on what it knows from the pictures we used to train it.
- We are giving it a specific job to do and telling it how to do it.
- It cannot do a different job.

Generative AI

- “Generative AI” means it **makes** content.
- It can include different things: images, text, video.
- We focus on **Image generation** and **Text generation** in our bootcamp.
- Gen-AI models are trained on unlabelled data, but lots more of it. Generally, Generative AI Models use deep learning techniques like neural networks.

Neural networks:

This machine learning method tries to mimic what our brains do, by having lots of different nodes and layers, all processing and recognising different pieces of patterns. They learn by making different predictions and then comparing their predictions to the right answer.

ChatGPT Training: Example

1. Pre Training

Lots and lots of data from the internet is given to the model.

In training, the data (text) is separated into short tokens.

Then the model learns from patterns of tokens.

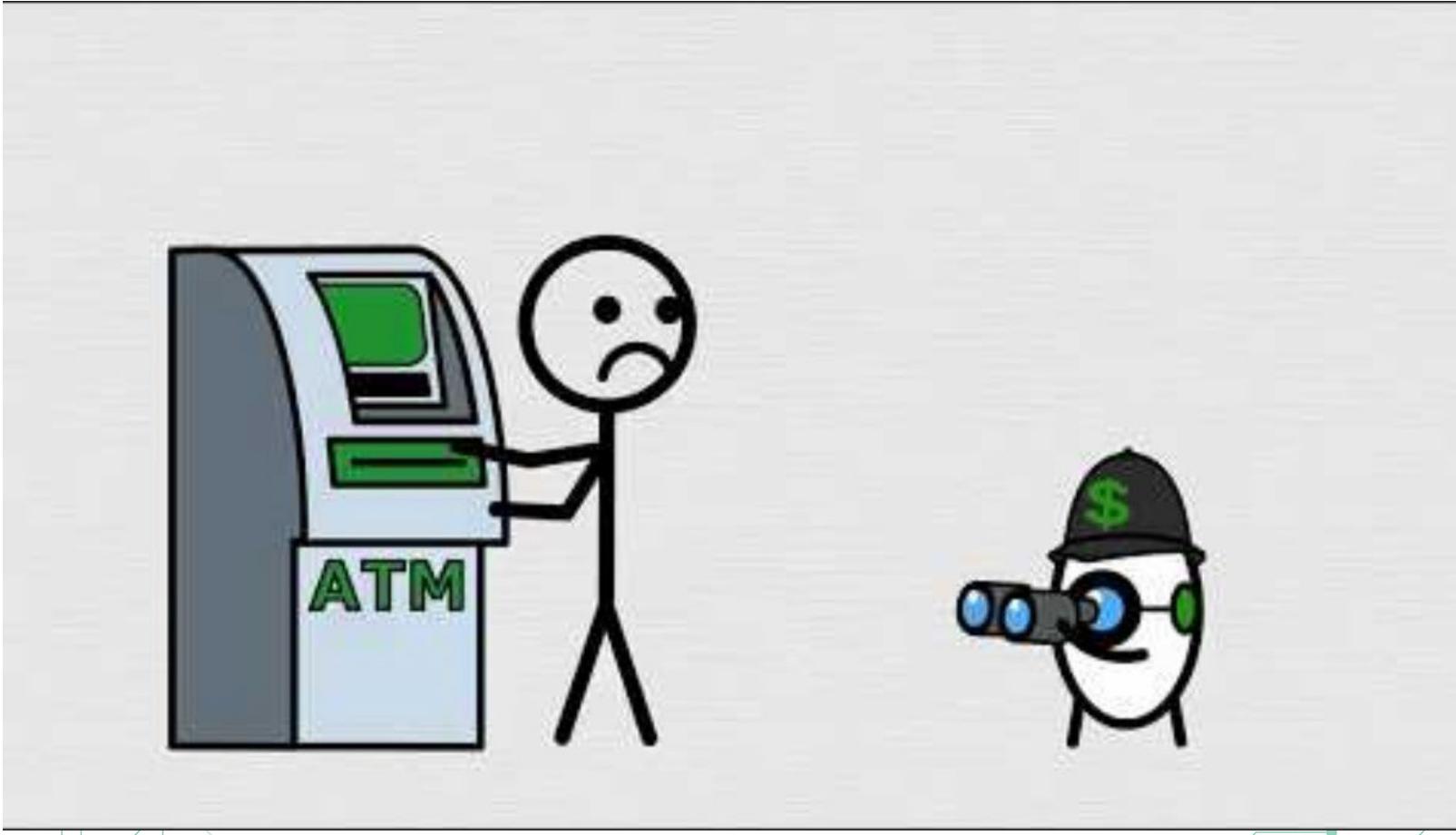
2. Fine tuning

Once the initial learning was finished, humans would interact with the model and evaluate it.

The model is trained to give answers that the humans liked.

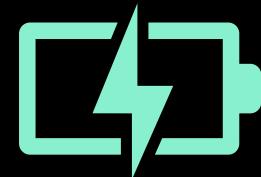
How AIs, like ChatGPT, Learn

CGP Grey



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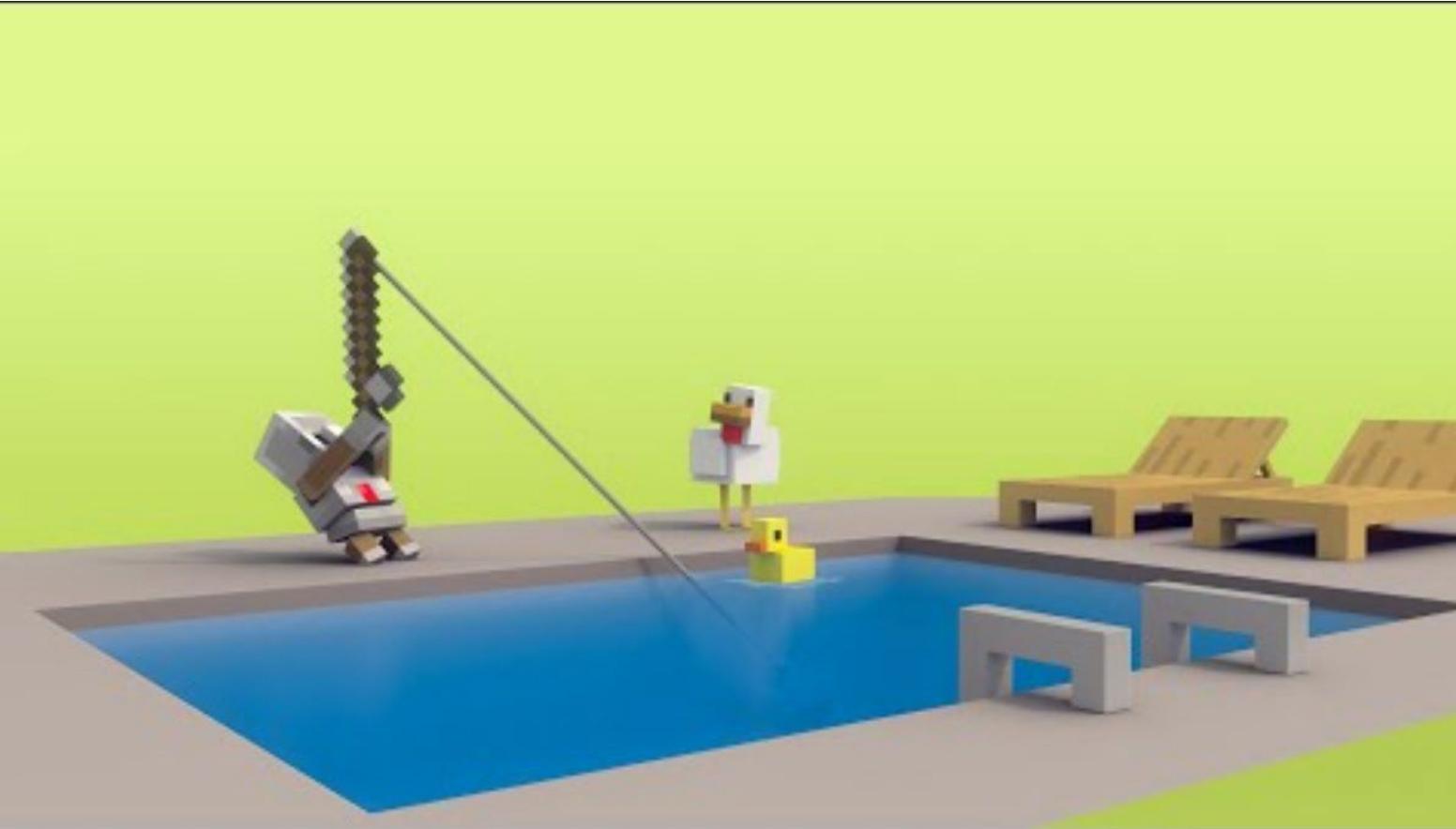
BREAK



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AI 101: Building the Basics

Minecraft Education



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**Remember to spend some time in
the art space for some wellbeing &
creative activities!**

Today is:
Mask Making &
“Being”



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Instruction following game

Choose from one of the tasks.

Give your mentor step-by-step instructions to complete the task. **Don't tell your mentor what the task is!**

Make sure you give detailed instructions...

Surprise for mentors :P

Did the mentors get it?

- Did your mentor understand your instructions?
- What went wrong and why? Missing detail? Assumed context?
- How did the instructions evolve/improve through iteration?
- What strategies helped improve the outcome – breaking down steps, being overly explicit, defining terms?

Prompting

- This is how we get the Gen-AI model to do [something].
- We ask it or tell it what to do. Our instructions are called 'Prompts'.
- Sometimes our instructions might not be interpreted how we mean them.
- There are some things to remember when we are prompting Gen-AI models.

Prompt:

The input you give to a Generative AI model which contains instructions and information.

Prompt Checklist

- Put your instructions & important information at the start.
- Be clear and specific.
- Avoid vague language.
- Say what **to do** instead of what **not** to do.
- Try simple first, then get more detailed.

'Don't ask for the user's password.'

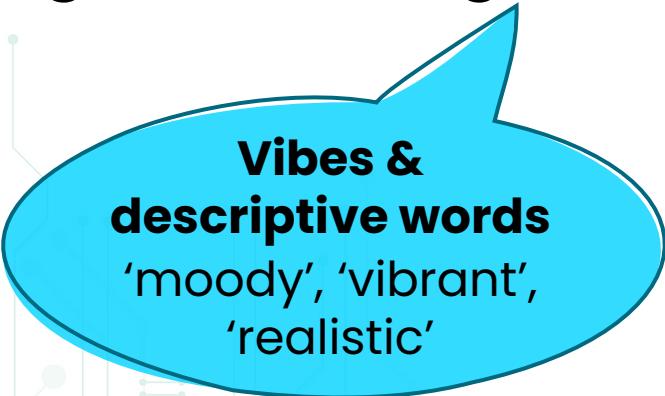
'Help the user by reminding them how to reset their password if they have forgotten it.'

Prompt Checklist

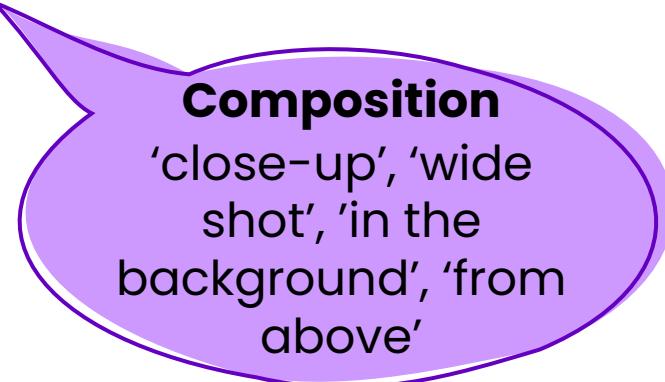
For text models, give an example of the output you want.



Image models generally work best with more descriptions.



Vibes & descriptive words
'moody', 'vibrant', 'realistic'



Composition
'close-up', 'wide shot', 'in the background', 'from above'



Style or medium
'digital painting', 'photograph', '3D render', 'watercolor'

Put it to the test



In small groups, agree on an image idea to generate and use the Image Generator to try and get the output we want.

In the wellbeing activity today, you'll be designing a character. You can use this character or create a new one.

Can you get the image model to produce an image of your character that reflects what is in your mind? What does your character look like?

Can you think of something that you wouldn't see in everyday life, like:

- A house, but with 100 floors?
- A zoo, but only with balloon animals?
- The library, but in the style of a comic book drawing?



Chat Playground



Image Playground

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Text-to-Image Generator



Use your picture password to load your keys.

Use your Picture Password

Beth C



Login

>Login OK!

Choose a model from the list.

Model

Sana | Sprint

show/hide the model info

You can show some information about the model by using this toggle.

Write your prompt here, then click 'Generate'.



Image Info

Input Prompt: "A 1950s diner at night, neon lights glowing."

Model's Prompt: "A 1950s diner at night, neon lights glowing."

Size (w x h): 3840 x 2160

Model: fal-ai/sana/sprint

The output will appear here with some information.

Download a record of your results to save to your files.

Generate

Give me an example

Save

If you want some ideas, click 'Give me an example'.

You will be reminded before you close/refresh the page if you haven't saved your logs!



Review & Reflect

- What element/visual is proving difficult to generate? Why might this be?
- What makes a big difference vs a small difference?
- What does it do well/badly?
- What worked & what didn't?
- Were there some words or phrases or formats that affected the output in ways you didn't expect?
- Which models did you like best?

Now try Text Generation...

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Text-to-Text Chat



Use your picture password for access.

Use your Picture Password

Beth C



Login

>Login OK!

Choose your model

Model name

OpenAI: GPT-4

Settings (optional)

Show/hide the System Prompt



Show/hide the optional settings



Show/hide the mode



We'll go through the settings later, but you can try them out and see how they affect your output...

You can show information about the model by using this toggle.

User Input:

Help me brainstorm a science fair project using household items.

OpenAI: GPT-4:

Sure, here are a few ideas you could consider for a science fair project using household items:

1. **Surface Tension Experiment:** You can use a bowl of water, pepper, and dish soap to demonstrate how surface tension works. Sprinkle pepper on the water surface, then add a drop of dish soap and watch how the pepper moves away due to the change in surface tension.
2. **Crystal Growth:** Grow your own crystals using sugar or salt and hot water. You'll keep track of the growth over a number of days and document the results.
3. **Homemade Water Filter:** Using different layers of materials such as sand, activated charcoal, and crushed rock, you can demonstrate how dirty water can be filtered and purified.
4. **DIY Volcano:** Create a volcano using a clear container, water, baking soda tablets (like Alka-Seltzer). This experiment demonstrates the power of water and the gas laws.

Write your prompt here, then click 'Generate'.

Prompt:

What colour is the sky?

Generate

Give me an example

Save

If you want some ideas, click 'Give me an example'.

Saves a record of your chat to your files.

The output will appear here.



Review & Reflect

- Does the text model process your prompts differently?
- How do you decide what is right and wrong/good or bad/etc in text outputs? It's different to seeing an image!
- Can you get different formats? Reasoning/chain of thought outputs? What could these different types of output be used for?

System Prompting

- We can make some 'hidden' instructions.
- This instruction defines the overall role, style, or behavior before it starts answering 'user' prompts.
- Its purpose is to guide how the AI should respond – for example, to sound formal, act as a helpful tutor, or follow certain rules consistently.

System Prompts

You can use your Scratch or Python program, or use the Chat Playground for our System Prompt experiments.

Examples:

- You are a pirate. You can only talk about parrots.
- You are a study helper who makes simple quizzes on different subjects.
- You are a science teacher explaining complex topics in a way a 6-year-old can understand.
- You are a friendly assistant who never uses the letter 'e' in your answers.

Picture Password Enter Key Hide

Use your Picture Password

Beth C



Login OK!

Try using the System Prompt Field to change how the model behaves. This playground has chat memory up to 20 messages.

Settings (optional)

Show/hide the System Prompt

System Prompt

You are a helpful assistant.

Show/hide the optional settings

Show/hide the model info

User Input:

Help me brainstorm a science fair project using household items.

OpenAI: GPT-4:

Sure, here are a few ideas you could consider for a science fair project using household items:

- 1. Surface Tension Experiment:** You can use a bowl of water, pepper, and dish soap to demonstrate how surface tension works. Sprinkle pepper on the water surface, then add a drop of dish soap and watch how the pepper moves away due to the change in surface tension.
- 2. Crystal Growth:** Grow your own crystals using sugar or salt and hot water. You'll keep track of the growth over a number of days and document the results.
- 3. Homemade Water Filter:** Using different layers of materials such as sand, activated charcoal, and crushed rock, you can demonstrate how dirty water can be filtered and purified.
- 4. DIY Lava Lamp:** Create a homemade lava lamp using a clear container, water, vegetable oil, food coloring, and effervescent tablets (like Alka-Seltzer). This experiment can demonstrate the immiscibility of oil and water and the gas laws.

Prompt:

What colour is the sky?

 Generate

 Give me an example

 Save

Show/hide the input json



Review & Reflect

- When you use a 'system' prompt, what happens?
- Does the model still act the same way? Can a 'user' get around your system prompt?
- How does the user know what to enter? Is there a format you need? What is the model expecting?
- Are there definitions or examples needed for your prompt? What have you assumed?

More Control: Settings

We can also change some things like temperature for text models.

These settings are to do with tokens.

Tokens	Characters
53	220

A token is a piece of text, which could be a word, a part of a word, or even a character, that the AI uses to understand and generate text. Words are broken into tokens automatically.

supercalifragilisticexpialidocious!

Show/hide the optional settings



max_tokens

1

Whole number | Maximum number of tokens (range: [1, context_length]).

temperature

1

Decimal | Sampling temperature (range: [0, 2]).

top_p

1

Decimal | Top-p sampling value (range: (0, 1]).

repetition_penalty

1

Decimal | Repetition penalty (range: (0, 2]).

Settings

Temperature: lower values make responses more predictable, higher values make them more varied.

Top P: Limits choices to the top tokens whose probabilities sum to P, balancing creativity and focus.

Repetition Penalty: Penalises reused tokens to reduce repetition, with higher values reducing repetition more strongly.

Max Tokens: Sets the maximum number of tokens the model can generate in its response.

Model Information

You can look more into information on models under 'Extension activities' at the bottom of the Launchpad.

What are Model Parameters?



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LUNCH BREAK



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**Remember to spend some time in
the art space for some wellbeing &
creative activities!**

Today is:
Mask Making &
“Being”



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Let's program

We'll use Turbowarp (Scratch) or Python.

First, we will do a Turbowarp demo together. Then, we will do a Python demo.

You can follow along with both, or just one.

Scratch with Gen-AI



Python with Gen-AI



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If you are new to Python, try and follow both.

**BUTTONS
AND
MESSAGES**

PYTHON VS CODE

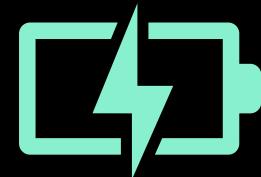
PYTHON: TRINKET.IO



Review & Reflect

- How do we allow users to interact with our program?
- How did you decide what to turn into a variable?
- What could you do next to make your program more interactive?
- Can you think of real-world uses for programs like this?

BREAK



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**Remember to spend some time in
the art space for some wellbeing &
creative activities!**

Today is:
Mask Making &
“Being”



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Sarah James

AI & Data

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That's all for today...

We did a lot today. Let's review.

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