BASIC PROMPT ENGINEERING WITH CHATGPT: AN INTRODUCTION

Course Number: FIS 394
Modality: Online (O) and online immersion (I)
Credits: 1
Session: Summer B
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DESCRIPTION

This course demystifies the world of large language models (LLMs) like ChatGPT and empowers you with the skills to harness their capabilities effectively. Master the art of crafting precise prompts and refining them to achieve desired outcomes. Learn how to create versatile prompt templates that enhance the capability of an LLM for systematic generalization. Get hands-on experience with evaluation techniques, crucial metrics, and methodologies for optimizing ChatGPT's performance. Plus, learn about emerging trends around LLMs and their application. The course wraps up by exploring the larger societal implications of LLMs. No prior knowledge in AI or programming is required, just your curiosity and enthusiasm!

ENROLLMENT REQUIREMENTS

There are no pre-requirements for this course.

REQUIRED MATERIALS AND RESOURCES

This course requires access to ChatGPT Plus (https://openai.com/blog/chatgpt) as most of the learning and assignments use ChatGPT running GPT4. This currently costs $20 per month. Participants will need to confirm access before continuing to the first course module. Unless stated otherwise, instructions referring to use of "ChatGPT" imply use of "ChatGPT Plus."

COURSE OVERVIEW

In November 2022, the company OpenAI publicly released the chatbot "ChatGPT" designed to provide a human interface to the latest version of its powerful,lLarge language model (LLM) called GPT (Generative Pre-Trained Transformer). Since then, ChatGPT and the capabilities that it offers has taken the world by storm. These capabilities have grown with ever-more powerful versions of the GPT LLM that is its foundation.

ChatGPT and other LLM-based systems can respond to conversational typed requests in ways that are uncannily human-like. Not only do they draw upon and synthesizing a vast array of human knowledge, but their responses have the structure and nuance of natural human language (or even specialized subsets of it, as in the synthesis of executable program code). The result is systems that can increasingly match humans in tasks ranging from writing letters, essays, and even grant proposals, to summarizing complex ideas in accessible ways, to writing simple code, to creating a personalized and responsive learning environment, and much, much more.

As these systems continue to evolve, there is a growing recognition that platforms like ChatGPT will impact nearly every aspect of our lives over the coming months and years, and transform the ways that people learn, businesses operate, and decisions are made. Although ChatGPT is best known as a stand-alone chatbot, its underlying GPT-4 LLM is now being integrated into other products, from specialized tools for programmers to general-purpose office productivity suites. Consequently, in the future, LLM's may be ubiquitous, and being able to make use of them may be a key factor in ensuring someone's success in the workplace. One way to start preparing for that future is to learn to master the use of tools like ChatGPT today.

This mastery is increasingly being referred to as "prompt engineering." While there are different definitions of what prompt engineering is – including some that refer to the process of developing LLMs rather than using them – in this course prompt engineering is defined as:

> "The art and skill of crafting, optimizing, and employing every-day language to effectively harness the power and capabilities of Large Language Models and AI chatbots, leveraging their potential and making them useful and accessible across a very wide range of professional and personal situations while ensuring accurate and valuable outcomes."

Curiously, the compelling human-like outputs of ChatGPT do not emerge from some deliberate, human-like artificial intelligence under its hood. The LLM within ChatGPT is the natural extension of text-prediction technologies that have been developed over the past few decades. The quality of the outputs of ChatGPT are primarily a product of (a) the very large amount of human text data that its LLM has been trained with to accurately predict responses; and (b) cleverly constructed "prompts" that give enough context to convert a question answering session into a text-completion task. As a result, there is rapidly growing interest in how to get the most out of systems like ChatGPT through the sophisticated use of these prompts. This has led to expertise in "prompt engineering" moving from the domain of coders to people who can formulate, craft, and refine written prompts that maximize the power LLMs.

Between November 2022 and April 2023 online searches for "prompt engineering" increased approximately 20-fold. This was accompanied by companies starting to advertise positions requiring verbal rather than code-based prompt engineering experience.

This course responds directly to this growing expectation that employees in all sectors will have fluency with crafting and engineering prompts for ChatGPT and similar systems. It is built

around six modules that introduce the essentials of large language models and associated chatbots; develop skills around basic prompt engineering, including formulation and refinement, generalization and templates, and evaluation and metrics; and explore emerging trends and applications; and contextualize prompt engineering within broader conversations around the broader implications of LLMs.

Through it, you will use ChatGPT to develop and refine your skills around prompt engineering while becoming familiar with how to get the most out of the platform within a variety of contexts. By the end of it, you will have mastered basic skills in prompt engineering.

CORE SKILLS/LEARNING OUTCOMES

1. **Understanding large language models and their limitations (Module 1):** Through this course, you will become familiar with the underlying concepts of large language models, including how they are trained, their architecture, and their limitations. This will include discussing potential biases, pitfalls, and ethical considerations when using large language models like the one powering ChatGPT.
2. **Prompt formulation and refinement (Module 2):** Through the course, you will learn how to write clear, concise, and unambiguous prompts that effectively communicate the desired information or task. You will also develop the skills of iterating and refining prompts to optimize the model's response, and you will experiment with different phrasings, context, and constraints to achieve the desired outcome.
3. **Developing and using prompt templates (Module 3):** Through the course, you will learn how to create generalized prompt templates that work across a variety of situations, domains, or problems. This skill is essential for maximizing the usefulness of ChatGPT in diverse applications. You will also learn how to identify common structures and adapt their templates accordingly.
4. **Prompt and response evaluation (Module 4):** Through the course, you will become familiar with the process of evaluating language model responses based on various criteria, such as relevance, coherence, and accuracy. You will also develop skills around quantitative and qualitative evaluation methods, and how to develop appropriate metrics for their specific use cases.
5. **Awareness of emerging trends around LLMs and their applications (Module 5):** Through the course, you will develop an awareness of cutting edge trends in LLM and ChatGPT-like technologies and interfaces, and their applications across multiple areas.
6. **Responsible innovation and broader societal implications of LLMs (Module 6):** Through the course, you will gain an understanding of the wider impact of LLMs like ChatGPT on society, including their potential benefits, risks, and ethical concerns. This will involve topics such as privacy, misinformation, automation, principled innovation, and responsible development and deployment. By cultivating awareness of these broader

implications, you will be better equipped to make informed decisions when working with LLMs.

DISCUSSION

Although this is an asynchronous course, participants are encouraged to discuss all aspects of the course, the assignments, the core skills, and broader perspectives on prompt engineering and large language models, using the discussion forum within Canvas.

The course instructor will be actively engaged in the discussion forum through the course.

ASSIGNMENTS

Each module is based around a series of assignments that are designed to help you learn a specific set of knowledge and skills associated with prompt engineering and to assess your mastery of this knowledge and these skills.

Each module will be worth 100 points, with each assignment within it contributing to this total. The maximum number of points for the whole course is 600.

Most assignments will use ChatGPT Plus to both help you learn specific objectives and assess your mastery of them. You will be required to confirm your completion of assignments in a number of ways, including providing screenshots of sessions with ChatGPT, providing critique of sessions with ChatGPT, and providing audio or video summaries of your learning and experiences.

Assignments	**Maximum points**
Module 1 (multiple assignments)	100
Module 2 (multiple assignments)	100
Module 3 (multiple assignments)	100
Module 4 (multiple assignments)	100
Module 5 (multiple assignments)	100
Module 6 (multiple assignments)	100
	600

EFFORT

This course can be successfully completed to a high standard by spending an average of 4–7 hours per week on working through content and assignments.

GRADING

The final course grade will be based on earned points as expressed as a percentage of the maximum number of points obtainable.

Extra credit will generally not be available. However, if you are struggling to maintain your grade, you are strongly encouraged to contact your instructor as soon as you can to develop a plan to ensure you succeed in the course. It is important to remember that your instructor's aim is to ensure that everyone taking the course learns the core skills and completes the course with a strong grade.

GRADING SCHEME (%)

A-/A/A+	90.0–92.9/93.0–97.9/98.0–100	Excellent
B-/B/B+	80.0–82.9/83–87.9/88.0–89.9	Good
C/C+	70.0–76.9/77.0–79.9	Average
D	60.0–69.9	Passing
E	<60	Failure
XE		Failure due to Academic Dishonesty

[Note: in order to receive University Distribution requirement credit you must earn at least a "C."]

INCOMPLETES

A mark of "I" (incomplete) can be given by the instructor when you are otherwise doing acceptable work but are unable to complete the course because of illness or other conditions beyond your control. If you request an "I", you are required to agree with the instructor what you need to do to complete the course requirements. The arrangement must be recorded using the form at http://students.asu.edu/forms/incomplete-grade-request. Students should be proactive and discuss this with their instructor and TA before the end of the semester. Students who do not complete this form before the end of the semester cannot be given an incomplete and will be awarded a grade based on the work they have completed.

LATE ASSIGNMENTS

If prior permission is sought (and granted) for submitting an assignment after the deadline, or if there are circumstances outside your control for a delay, there will be no grade penalty. Otherwise, assignments submitted after the set deadline will not be graded.

GRADE APPEALS

ASU has formal and informal channels to appeal a grade. If you wish to appeal any grading decisions, please see: http://catalog.asu.edu/appeal

MODULES

Module 0: Orientation

Overview

Module 0 is designed to be completed before the course starts. It includes a short introduction to the course and orientation to course expectations. You will not be graded on Module 0. However, you will not be able to progress to Module 1 until this module has been completed.

In Module 0, you will be asked to confirm that you have full access to ChatGPT Plus before proceeding with the course.

Tasks

- Class orientation
- Course readiness confirmation
- Student Honor Code

Module 1: Understanding language models and their limitations

Overview

In this module, we will cover a basic introduction to Large Language Models (LLMs), which are the engines that drive chatbot interfaces like ChatGPT. We will explore their underlying concepts, architectures, and training processes. As we navigate this landscape, we will also discuss some of the limitations and challenges that come with using these powerful tools.

Large language models like the ones behind ChatGPT have revolutionized the way we interact with technology, but it's crucial for us to understand both their potential and their pitfalls. We will examine how these models are trained on vast amounts of data, enabling them to generate human-like text based on the patterns they've learned. By comprehending the inner workings of these models, you'll be better equipped to harness their capabilities effectively and responsibly.

Throughout this and subsequent modules, we will address potential biases, ethical considerations, and other challenges associated with using large-scale language models. As we analyze the limitations of these tools, we will discuss strategies for mitigating biases and other unintended consequences. By the end of this module, you will have a solid understanding of large language models and their limitations, laying the foundation for responsible and effective prompt engineering.

Learning Objectives

By the end of this module you will be able to:

1.1. Describe what ChatGPT is
1.2. Describe what a Large Language Model is
1.3. Describe some of the key benefits of ChatGPT and Large Language Models
1.4. Describe some of the key limitations of Large Language Models and ChatGPT
1.5. Apply basic tips and tricks to getting the most out of ChatGPT

Exercises and assignments

Learning within this module will primarily be through a series of assignments. These are based on developing understanding and skills through hands-on use of ChatGPT together with focused online research.

Detailed descriptions of each assignment, together with instructions and how the assignments will be assessed, will be posted on Canvas.

1. **ChatGPT Orientation and play** (20 points): You will spend time simply playing with ChatGPT. Use the Tips and Tricks to get used to the interface and how ChatGPT works.
2. **Large Language Model exploration** (30 points): This exercise is designed to help you learn about Large Language Models (LLMs) and LLM chatbots like ChatGPT through your own research.
3. **Error, bias, and other failure modes in LLMs** (30 points): This exercise is designed to help you better understand some of the errors and biases that can be present in conversations with ChatGPT. It only scratches the surface of errors and bias within LLMs but is useful in understanding how to spot and navigate them.
4. **Reflection** (20 points): Post a short reflection (100 – 200 words) on what you have learned about the limitations of ChatGPT and how to ensure these don't unduly impact your work. Do not use ChatGPT to write your reflection.

By completing these assignments, you will gain a deeper understanding of the inner workings of language models like ChatGPT, their limitations, and the potential ethical concerns associated with their use. This will equip you with the knowledge needed to make informed decisions when using and developing applications based on language models.

Module 2: Prompt formulation and refinement

Overview

In this module, we dive into two critical aspects of prompt engineering: prompt formulation and refinement. A well-crafted prompt is the key to unlocking the full potential of language models like ChatGPT, and in this module, you will learn the techniques and best practices for designing effective prompts that lead to desired outputs.

In this module, we will begin by exploring the fundamentals of prompt formulation, including how to structure your prompts, set the right context, and ask clear, concise questions. As we delve into these principles, you will learn how to harness the power of large language models to generate accurate and useful responses. You will also discover the importance of iterative refinement, a process that involves fine-tuning and tweaking your prompts to improve their performance and achieve the desired results.

We will also explore the role of creativity and experimentation in prompt engineering, encouraging you to explore diverse approaches and strategies. By understanding the significance of feedback loops, you'll be able to make informed decisions about when and how to adjust your prompts. By the end of Module 2, you will have gained valuable insights into prompt formulation and refinement, enabling you to create impactful and effective prompts for a wide range of applications.

Learning Objectives

By the end of this module you will be able to:

2.1. Describe what prompt formulation and prompt refinement are
2.2. Apply ambiguity reduction in formulating prompts
2.3. Apply constraint-based prompting to specific tasks
2.4. Demonstrate comparative prompt formulation

Exercises and assignments

Learning within this module will primarily be through a series of assignments that are based on developing understanding and skills through hands-on use of ChatGPT together with focused online research.

Detailed descriptions of each assignment together with instructions and how the assignments will be assessed will be posted on Canvas.

1. **Prompt exploration** (10 points): This exercise is designed to allow you to play around with how the way a prompt is crafted can affect the output of ChatGPT
2. **Ambiguity Reduction** (20 points): This exercise is designed to help you better-understand how to reduce ambiguity in prompts. It starts by exploring how to clarify a

series of ambiguous prompts to increase the quality, specificity and usefulness of ChatGPT outputs.

3. **Constraint-based Prompting** (30 points): This exercise is designed to help you understand and use constraint-based prompting.
4. **Comparative Prompt Engineering** (30 points): This exercise is designed to help you understand and use comparative prompt engineering. You will be given a task and asked to explore how you can formulate prompts that lead to ChatGPT providing and ranking multiple options.
5. **Reflection** (10 points): You will be asked to write a 300 – 500 word reflection on what your key takeaways are from this module and what you have learned with respect to prompt formulation and refinement.

These assignments will provide you with practical experience in formulating, refining, and iterating on prompts to optimize ChatGPT's responses. By completing these tasks, you will develop a better understanding of how different phrasings, constraints, and context can influence the performance of the language model.

Module 3: Prompt templates

Overview

In this module, we will focus on developing reusable prompt templates, an essential component of prompt engineering. This module will equip you with the knowledge and skills necessary to create versatile and adaptable prompts that perform well across a variety of tasks and domains.

Prompt templates serve as a foundation for efficient and effective use of ChatGPT and other LLMs, providing a structured approach to formulating prompts. In this module, you will explore various prompt templates and their applications and how they can be customized to suit specific tasks and domains. By understanding the value of templates, you'll be able to streamline your prompt engineering process, saving time and effort while maintaining high-quality results.

By the end of Module 3, you will have a strong grasp of prompt templates, empowering you to create robust and flexible prompts that maximize the capabilities of language models across a wide range of tasks and situations.

Learning objectives

By the end of this module you will be able to:

3.1. Explain the usefulness of prompt templates when using ChatGPT.
3.2. Develop simple prompt templates that can be applied to multiple questions or situations.
3.3. Develop multi-step prompt templates.
3.4. Train ChatGPT to respond to a prompt template in a generalizable way.

Exercises and assignments

Learning within this module will primarily be through a series of assignments that are based on developing understanding and skills through hands-on use of ChatGPT together with focused online research.

Detailed descriptions of each assignment, together with instructions and how the assignments will be assessed, will be posted on Canvas.

1. **Exploring an example prompt template** (15 points): This exercise uses a simple yet powerful example of a reusable prompt template to help you understand the structure and format of a successful template.
2. **Developing your own prompt template** (20 points): In this exercise you will create a reusable prompt template. This will be designed for use with a specific domain.
3. **Training ChatGPT to use your template** (20 points): In this exercise you will develop a prompt structure that allows ChatGPT to respond to different inputs to your prompt template without you typing the whole template in each time.
4. **Multi-step Task Template** (30 points): In this exercise you will develop a template for tasks that consist of multiple steps. In the context of ChatGPT, a multi-step task template refers to a structured series of questions or instructions designed to guide the model through a conversational interaction.
5. **Testing understanding of prompt templates** (10 points): A ChatGPT-administered quiz.

These assignments will give you hands-on experience in applying systematic generalization and creating prompt templates while working with diverse tasks and data types. By completing these assignments, you will develop a better understanding of how to create adaptable and effective prompts for ChatGPT.

Module 4: Evaluation and metrics

Overview

In this module, we will concentrate on two critical aspects of prompt engineering: evaluation and metrics. A thorough understanding of how to assess the performance of prompts is vital to ensure their effectiveness and reliability in various applications. In this module, you will develop the tools and knowledge necessary to evaluate and measure the success of your prompt development and crafting efforts.

We will begin by exploring response evaluation criteria. Here, we will develop a simple framework for evaluating ChatGPT responses and changing prompts to increase the quality of responses – the RACCCA framework. We will then explore how using numeric scores allows metrics to be developed that enable the usefulness of prompts to be assessed more effectively.

We will finally explore how prompt response evaluation and metrics can be useful in comparative evaluation of different prompts.

By the end of Module 4, you will be well-versed in evaluation methodologies and metrics, allowing you to assess the performance of your prompt development efforts. This knowledge will enable you to iteratively improve your prompts, ensuring their success and reliability across a wide range of applications.

Learning objectives

By the end of this module you will be able to:

4.1. Describe the usefulness of prompt response evaluation techniques
4.2. Describe the RACCCA approach to evaluating prompt responses
4.3. Provide a metrics-based evaluation of prompt responses
4.4. Iteratively improve prompts to provide better responses against a set of criteria
4.5. Comparatively evaluate different prompts focused on similar outputs

Exercises and assignments

Learning within this module will primarily be through a series of assignments that are based on developing understanding and skills through hands-on use of ChatGPT, together with focused online research.

Detailed descriptions of each assignment, together with instructions and how the assignments will be assessed, will be posted on Canvas.

1. **Exploring prompt evaluation and metrics with ChatGPT** (15 points): This exercise is designed to allow you to explore approaches to prompt evaluation and metrics by playing and experimenting with ChatGPT.
2. **Response Evaluation Criteria** (30 points): In this exercise you will explore six specific dimensions of response quality: Relevance, Accuracy, Completeness, Clarity, Coherence and Appropriateness (the RACCCA framework).
3. **Response Evaluation Metrics** (25 points): In this exercise we explore how the quality of a response from ChatGPT can be quantified.
4. **Comparative Evaluation of Different Prompts** (30 points): This exercise takes the previous exercise a step further by using the evaluation metrics to compare different versions of a similar prompt.

These assignments will provide you with practical experience in evaluating language model responses and designing custom evaluation metrics. By completing these tasks, you will gain insights into the factors that influence the quality of ChatGPT's output and learn how to critically assess the model's performance in various contexts.

Module 5: Emerging trends around LLMs and their applications

Overview

The field of LLMs and how they are integrated with other systems is increasing rapidly. By April 2023 – just six months after the release of ChatGPT – capabilities like Auto-GPT were already beginning to emerge that substantially expanded what is possible with LLMs. And creative users are continuously exploring new ways of using ChatGPT and extending its capabilities. By the time you take the course, there will most likely be tools and capabilities that are not available at the time of writing.

This module is designed to give you the opportunity to explore the rapidly emerging landscape around how LLMs are being used, as well as explore for yourself how ChatGPT can be used in innovative ways. It consists of just three exercises:

The first exercise is designed to learn about novel ways in which ChatGPT and other LLMs are being developed and used through your own research. You should not use ChatGPT directly for this exercise as it will not have the necessary knowledge in the data it utilizes, although you are encouraged to use it to develop your ideas and thinking about how to research emerging trends.

In the second exercise you will be asked to find examples of practical and creative uses of prompts for use with ChatGPT.

The third assignment asks you to experiment with ChatGPT to explore its novel use. Here, your creativity, imagination, and ingenuity with playing with the platform are all important in learning how to be creative with prompt engineering.

By the end of this module, you should be able to talk with confidence about emerging and innovative uses of ChatGPT and other LLMs.

Learning objectives

By the end of this module you will be able to:

5.1. Describe emerging developments around the capabilities and uses of LLMs and the technologies that are making use of them.
5.2. Describe and utilize an array of innovative prompt ideas and structures
5.3. Develop your own highly creative prompts for ChatGPT.

Exercises and assignments

Detailed descriptions of each assignment, together with instructions and how the assignments will be assessed, will be posted on Canvas.

1. **Exploring the cutting edge of LLM development and use** (40 points): This exercise asks you to research and provides your thoughts on emerging uses of LLMs and ChatGPT.

2. **Novel prompt ideas and structures** (20 points): There are a rapidly growing number of resources online that list novel prompts and prompt structures. This exercise asks you to do your own research into these.
3. **Amazing prompts!** (40 points): In this exercise you will be asked to experiment with novel ways of using ChatGPT by identifying creative and interesting goals, and playing with novel ways of developing prompts to achieve them.

These assignments will both extend your understanding of innovations around LLMs and increase your ability to innovate with prompt engineering.

Module 6: Broader societal implications of LLMs and ChatGPT

Overview

In this module, we will explore the broader societal implications of Large Language Models and their associated interfaces like ChatGPT. As you learn to work with these technologies, it's crucial to consider not only their technical capabilities but also their potential impacts on society, both positive and negative. In this module, you will explore key topics related to the ethical, social, and economic aspects of LLMs and ChatGPT (and by extension, other AI chatbots), while developing an understanding of concepts such as societally responsible innovation, responsible AI, principled innovation, ethical AI and innovation, and principles of ethical and responsible use.

You will start by exploring the benefits and risks associated with LLMs, such as enhanced communication and productivity, the potential spread of misinformation, and societal disruption. This will provide you with an important perspective on the advantages and drawbacks of using these models in various contexts.

Next, you will examine the challenges surrounding LLMs, such as the potential impacts on employment, the ethics of LLM development and use, and responsible and principled innovation. By considering these wide-ranging consequences, you will be better prepared to make responsible decisions and contribute positively to the evolving AI landscape and how ChatGPT is used across multiple domains.

By the end of Module 6, you will have a foundational understanding of the broader societal implications of large language models and AI chatbots and their role in shaping our world. You will be equipped with the knowledge to engage in thoughtful discussions about AI ethics and the responsible use of LLMs, fostering a more inclusive, transparent, and accountable approach to AI development. This understanding will enable you to make more informed decisions when working with language models, and to contribute constructively to the ongoing conversation surrounding AI's impact on society.

Learning objectives

By the end of this module you will be able to:

6.1. Describe key potential benefits and risks/ethical concerns associated with LLMs and AI chatbots.
6.2. Explain the concepts of responsible innovation and how it applies to LLMs and AI chatbots like ChatGPT.
6.3. Apply ethical and responsible practices to the use of LLMs and AI chatbots, based on a set of personal Principles for Responsible Prompt Engineering.

Exercises and assignments

Learning within this module will primarily be through a series of assignments that are based on developing understanding and skills through hands-on use of ChatGPT, together with focused online research.

Detailed descriptions of each assignment, together with instructions and how the assignments will be assessed, will be posted on Canvas.

1. **Exploring the potential benefits of LLMs** (15 points): This exercise is designed to help you develop a broader understanding of the potential benefits of AI chatbots like ChatGPT and the underlying large language models.
2. **Exploring the potential risks of LLMs** (15 points): This exercise is designed to help you develop a broader understanding of the potential risks, downsides, and ethical concerns associated with AI chatbots like ChatGPT and the underlying large language models.
3. **Responsible Innovation and ChatGPT** (20 points): This exercise is built around a conversation with ChatGPT that helps develop your understanding of responsible innovation in the context of responsible AI and ChatGPT.
4. **Ethical Dilemma** (20 points): In this exercise you will explore the nature of an ethical dilemma with ChatGPT, together with its resolution.
5. **Principles of Responsible Prompt Engineering** (25 points): This final exercise asks you to develop your own personal principles of Responsible Prompt Engineering with ChatGPT.

These assignments are designed to explore the broader societal implications of LLMs while encouraging critical thinking, reflection, and problem-solving skills.

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ChatGPT and AI Chatbot Policy

This is a course that uses ChatGPT extensively as a personal tutor, learning environment, test and exploration environment, and evaluation environment. Unless explicitly stated on an exercise or assignment, you should feel free to use ChatGPT in as creative a way as you can imagine – that is, after all, the point of this course!

That said, there are some exercises and assignments that explicitly prohibit the use of ChatGPT, and where points will be lost if it (or other similar platforms) is used. This is made clear in the relevant exercises and assignments.