

FORUM

EDUCATION IN THE AI ERA

This session aims to explore the intersection between education and artificial intelligence, share the vision for the future of education and understand how AI can revolutionize learning environments.

Keynote Speakers



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Wednesday, January 24



10 A.M. - 2 P.M.



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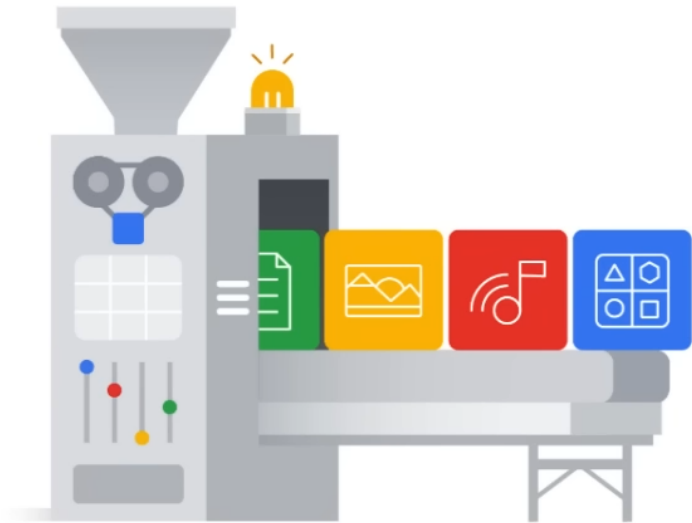
Integrating Generative AI for student success and academic delivery efficiency

Forum: Education in the AI Era - American University of Bahrain

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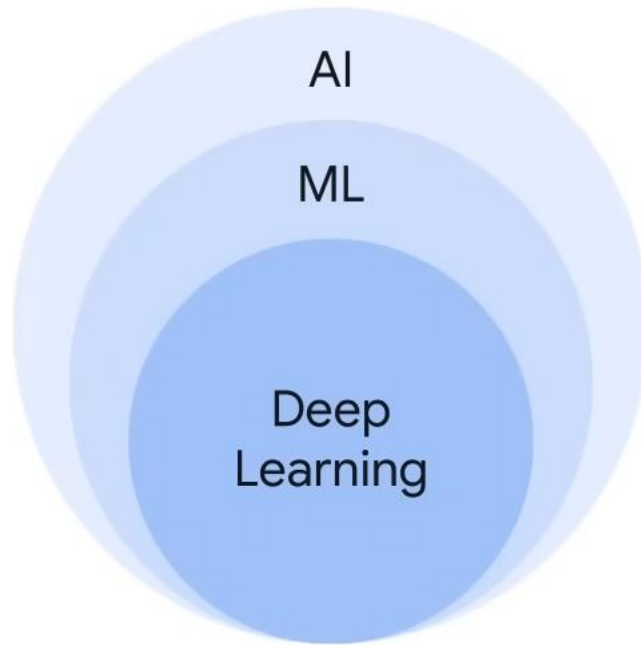
What is Generative AI?

- GenAI is a type of Artificial Intelligence that creates new content based on what it has learned from existing content.
- The process of learning from existing content is called training and results in the creation of a statistical model.
- When given a prompt, GenAI uses this statistical model to predict what an expected response might be—and this generates new content.



Artificial Intelligence

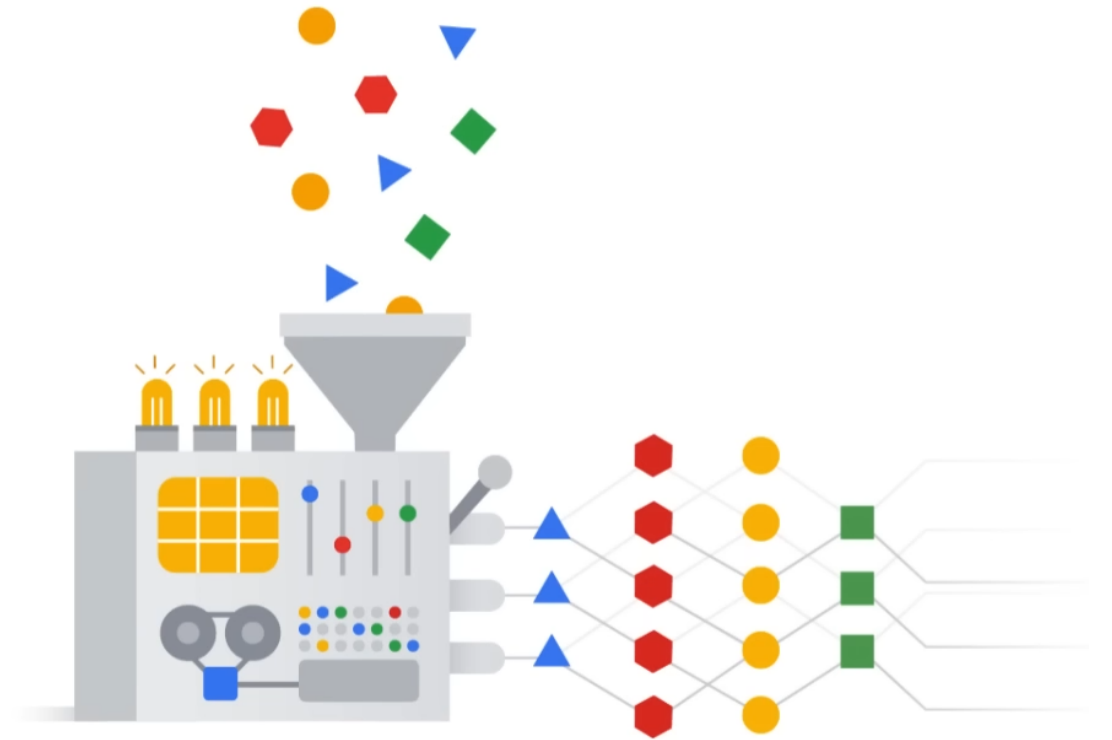
is a discipline

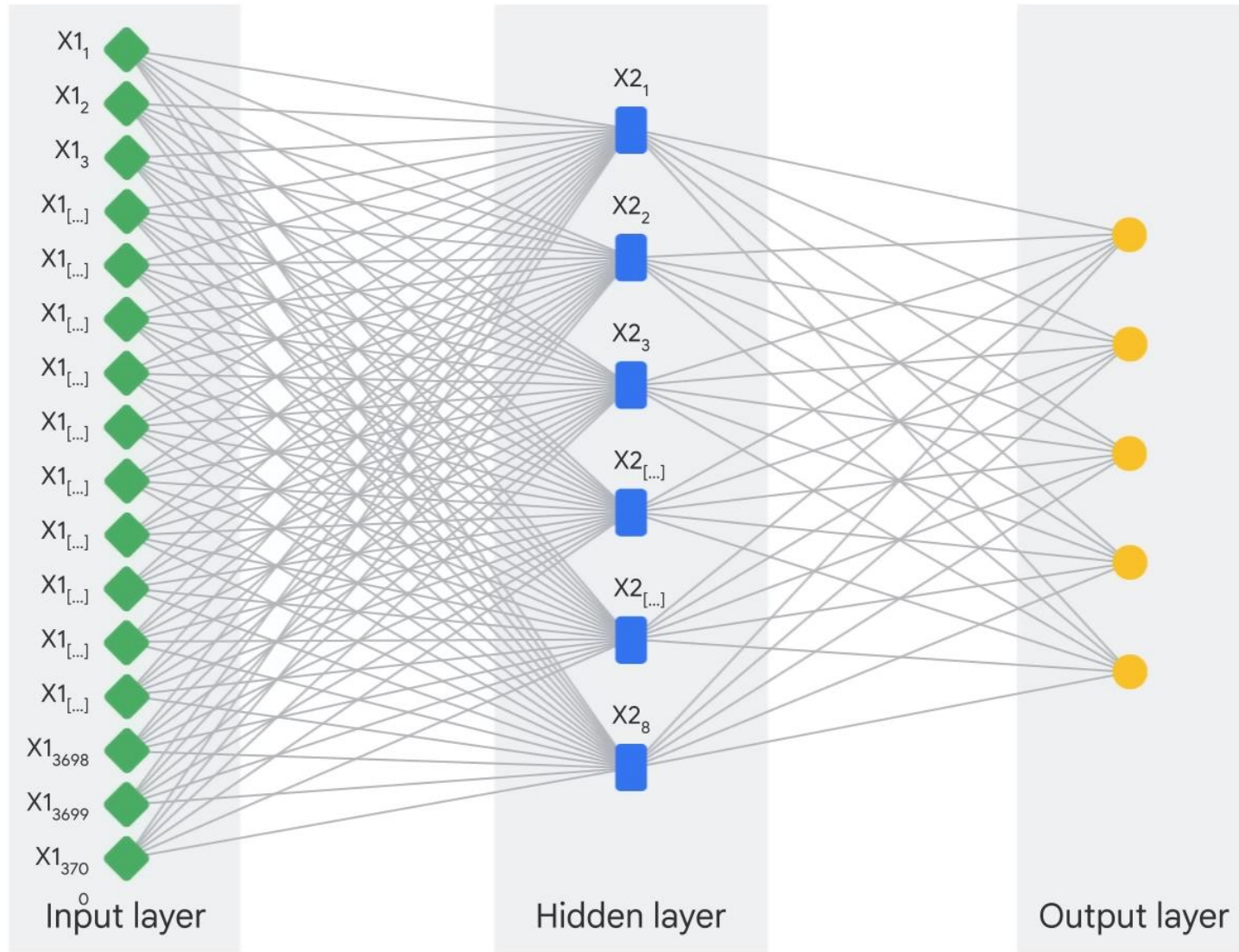


Machine Learning

is a subfield

Deep learning uses Artificial Neural Networks - allowing them to **process more complex patterns** than traditional machine learning.





Deep Learning Model Types



Discriminative

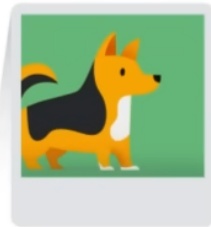
- Used to classify or predict
- Typically trained on a dataset of labeled data
- Learns the relationship between the features of the data points and the labels



Generative

- Generates new data that is similar to data it was trained on
- Understands distribution of data and how likely a given example is
- Predict next word in a sequence

Discriminative
technique

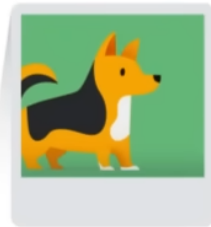


Classify
→

Discriminative model
(classify as a dog or a cat)



Generative
technique

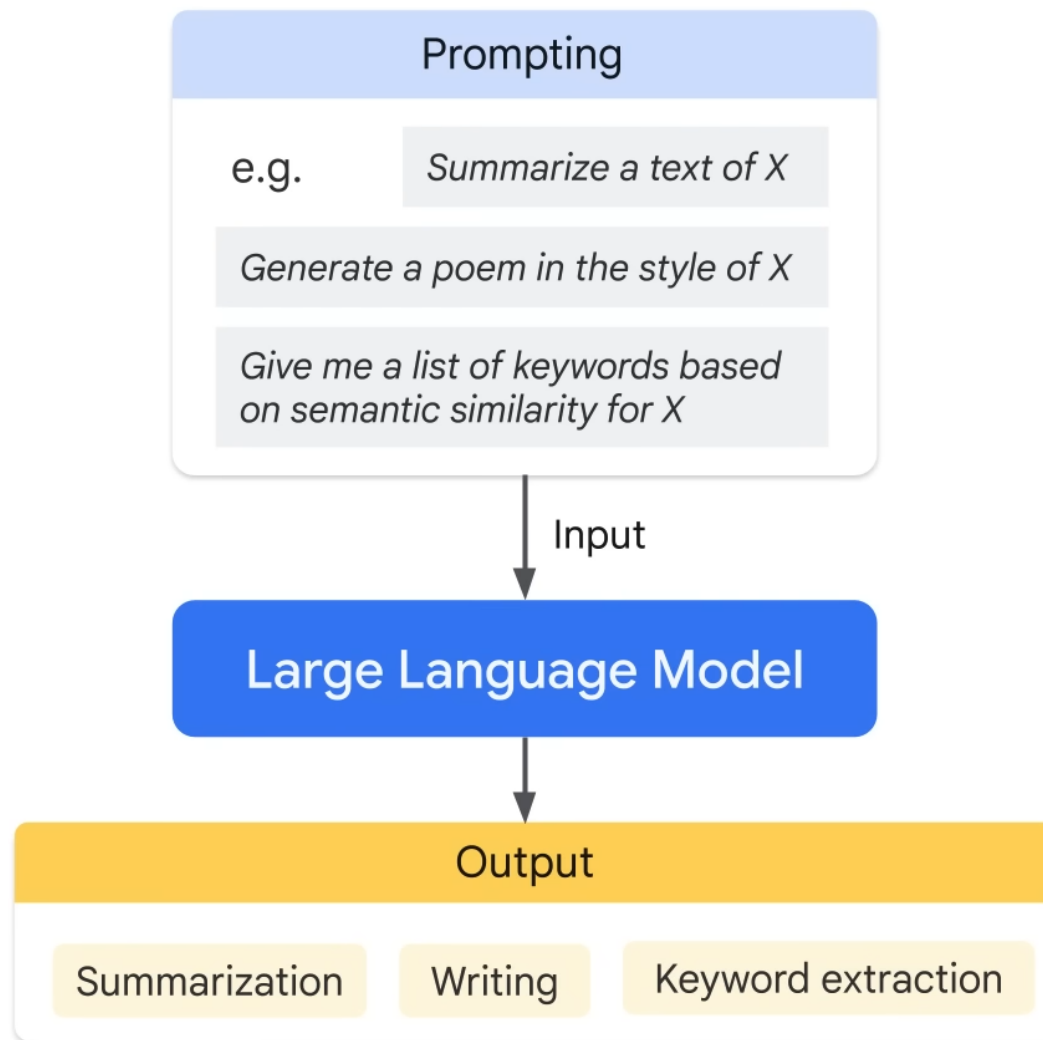


Generate
→

Generative model
(generate dog image)

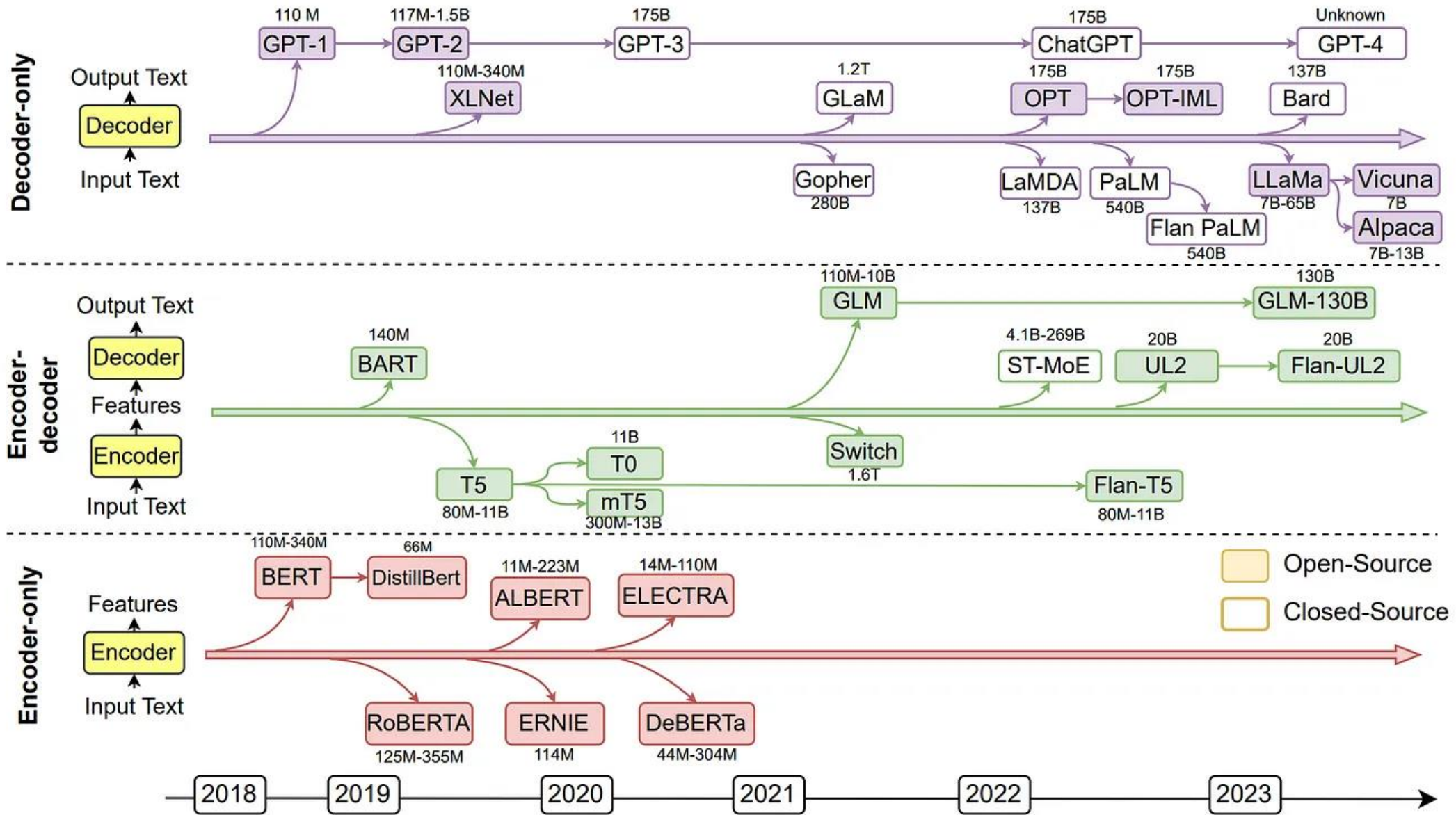


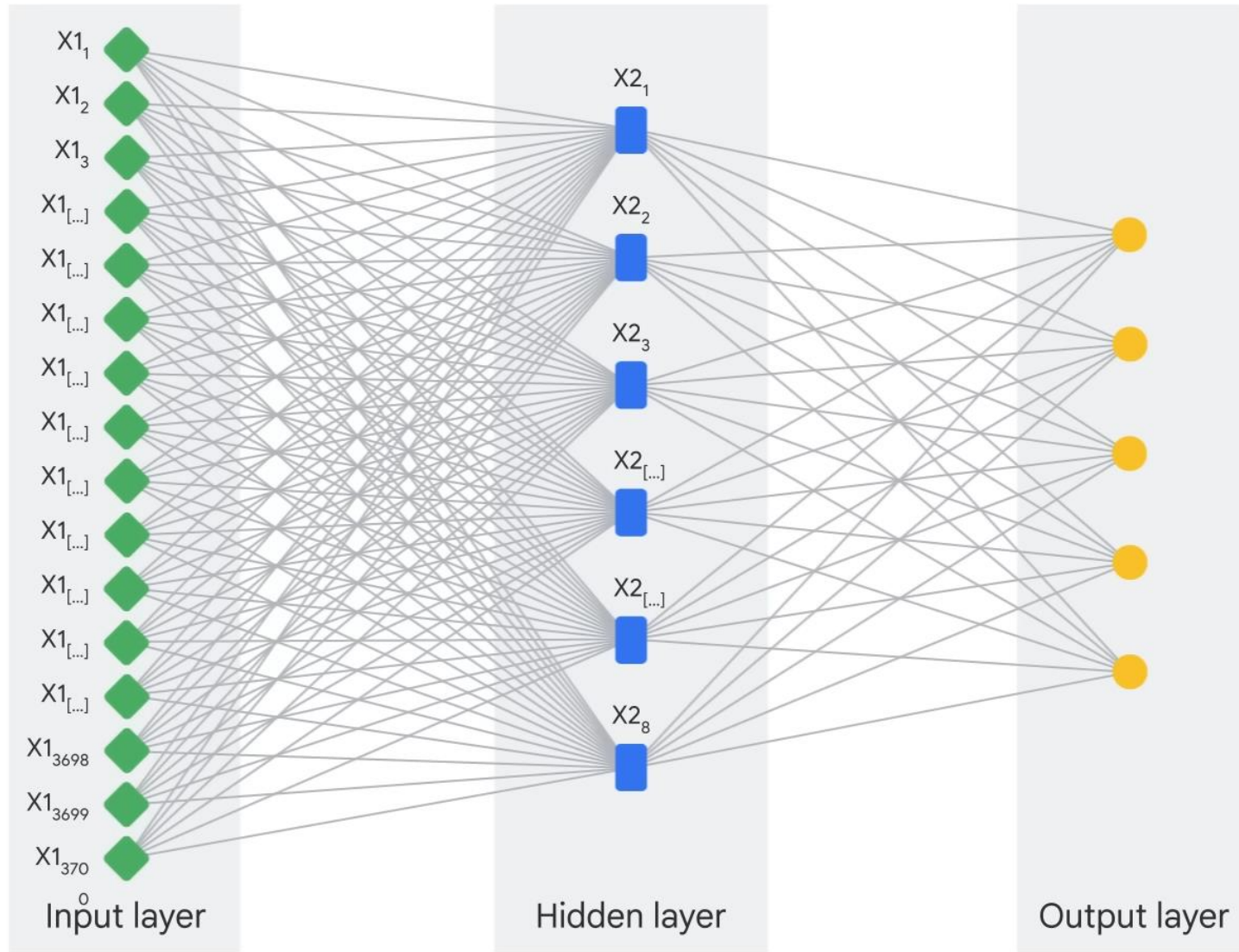
Prompt Design:
the quality of the
input **determines the**
quality of the output.



Large Language Models

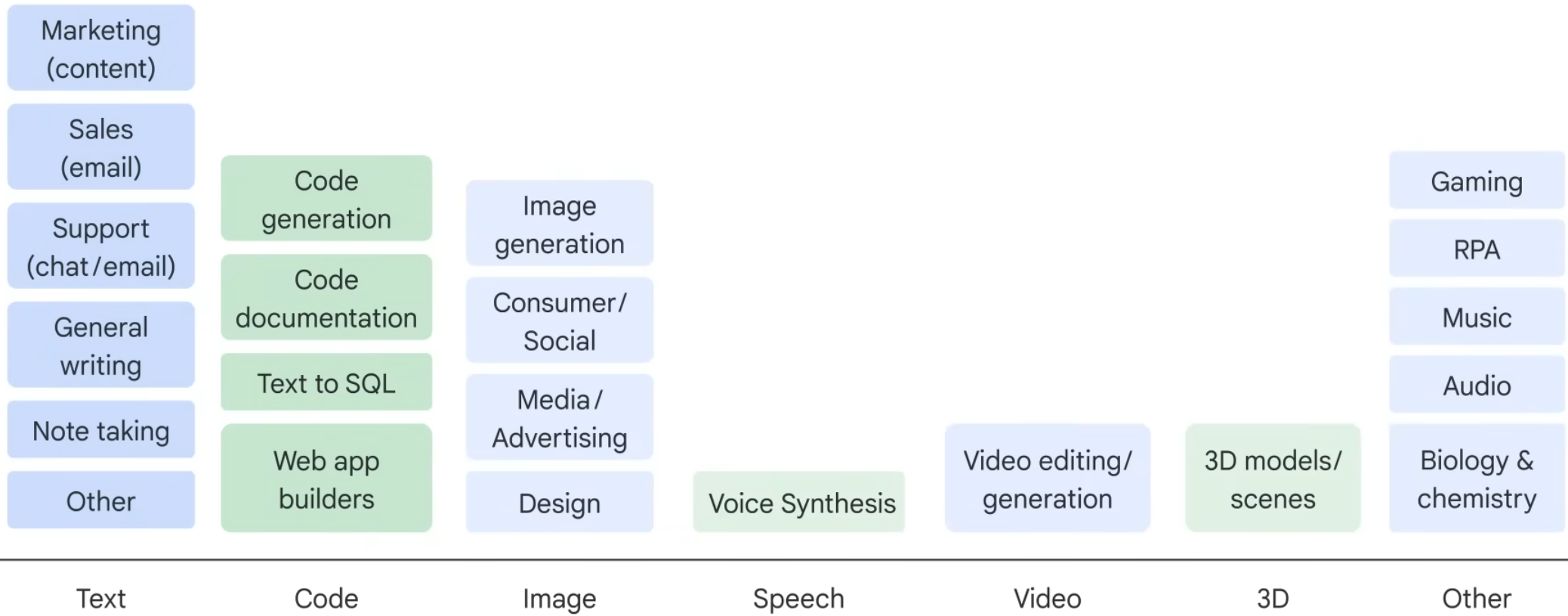
- So, what do these systems do? They're like word guessers. You give them some text, and they figure out what words or pieces of words might come next.
- Keep in mind that while LLMs are impressive, they're not perfect. They sometimes make things up and might have trouble following a logical chain of thought. But remember, they were trained to understand and predict language statistically





The generative AI Application Landscape

Application layer



Models and tools covered in this presentation

- ChatGPT – 3.5 & 4.0
- Bing Edge – integration of ChatGPT 4.0
- Poe.com – use of multiple models and creation of customised bots

Other models and tools to consider

- Bard Google
- Perplexity.AI

Things to consider

- Use and output is undetectable – there is no way to justify plagiarism
- Ethical and privacy concerns
- Bias and prejudice
- Environmental and computational costs

Practical examples

Prompts and tools

Areas of work where GenAI can be used and bring efficiencies

- Grammar and text improvement
- Summarise text to meet specific word count
- Extract the idea points from text
- Lesson planning
- Write assessment criteria / descriptors
- Design of authentic assessment
- Write case studies
- Generate quizzes / multiple choice tests
- Improve research preparation and idea generation

Examples and prompts in the guide - Tsiligiris, V. (2024) A guide to implement and integrate Generative AI in teaching, assessment and research. Version 1. Available at: [GenAI guide v1.docx](#)



Strategies

- One-way prompts
 - Grammar and text improvements
 - Summarise text to meet word count
 - Extract ideas
 - Lesson planning
 - Assessment and marking grid/criteria
- Iterative bot prompts
 - A designer of authentic assessment
 - A coach that helps academics to develop lesson plans
 - Quiz generator



Selected examples using ChatGPT

Grammar, flow : *Check for grammar, flow and general quality of this text “.....” Provide changes when needed by redrafting and create a table with the changes you made. Avoid being pompous in your writing.*

Lesson plan : *I am delivering the module x at level x of a university programme in x. I want to plan a teaching session about x topic. The learning outcomes of the session are x. The duration of the session is x and the size of the class is x. Please provide ideas about an engaging session.*

Create authentic assessment : *I am delivering the module x at level x of a university programme in x. The learning outcomes of the module are “....”. I want to produce an authentic assessment that effectively assess the students on these learning outcomes. Also the assessment should comply with the authentic assessment characteristics as a way to mitigate the risk of students using Generative AI to produce a descriptive reply to the assessment question. Provide some initial ideas and ask me to choose from them. Then expand and continue asking me for further iterations until I respond I am happy with the outcome.*



Edge and Copilot




- Free access to ChatGPT 4
- Access to Web
- Use Edge Copilot to
 - Generate outcomes using the website content
 - Summarise web results – very effective for scholar results
 - Load pdfs and generate summaries, extract ideas

Examples



Create a case study using websites

1. Navigate to a website of a company. Go to the “about” or similar page that includes the company profile, a product timeline, etc. You can also use a website that provides a description/profile of a company.
2. Then open the Copilot at the top right corner of Edge 
3. Write *“Use the information on the website and write a case study that I can use in my classroom. I teach marketing management. I want to the case study to include some critical reflection questions for my students that tests their knowledge on marketing strategy.”*


This is a very powerful implementation that can improve the efficiency in creating effective teaching content using contemporary information



Examples



Summarise Google Scholar results

1. Do a scholar search using a topic of your choice (“Use of ChatGPT in education”)
2. Then open the Copilot at the top right corner of Edge 
3. Write the kind of summary or other action you want to perform. For example
“Create a table with the methodology, key findings, and recommendations for future research for each of the articles included in the results page loaded”.


This is a very powerful implementation that can improve the efficiency in identifying suitable articles and areas for future research



Examples



Summarise and explore pdfs and websites

1. Load a pdf in your Edge [e.g. select on pdf from the scholar results]
2. Then open the Copilot at the top right corner of Edge 
3. Write the kind of summary or other action you want to perform. For example, *“Summarise the key findings of the article. Provide a 100-word critical reflection on the quality of the paper”*.

Or “Based on the paper, can you suggest some areas of further research”

This is a very powerful implementation that can improve the efficiency in speeding up literature reviews and ideas generation



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Customised chat bots

Using Poe.com

Customised chat bots for your students

- Students use ChatGPT and other tools anyway.
- Key challenge is how do we intergrade GenAI in our teaching and learning practice?
- The implementations that will follow allow you to intergrade GenAI in your classroom, under a controlled environment
- Students are not able to see the prompt you have used
- Students are able to interact with the bot that is available to them for free (simple sign up is required with any email address)

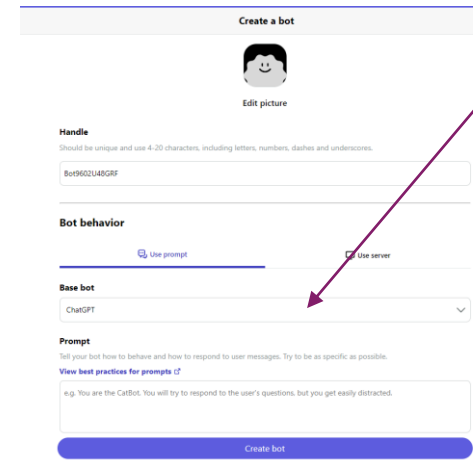
How to create customised GenAI bots

The approach to implement these model includes

Signing up to poe.com. This is a **free platform** that allows access to multiple GPT models and the creation of customised chatbots. It is reliable and secure system founded by Quora.

1. To sign up go to **poe.com** and then click to sign up using your email (you can use your personal or NTU email). A code will be sent to your email to verify. Use the code and then you will be able to log in.
2. Once you log in, if a message about subscription pops up just close it [it is just a promo].
 - You will be able see this landing page. Click on “create bot” at the top left corner.

4. You will be prompted with the following screen

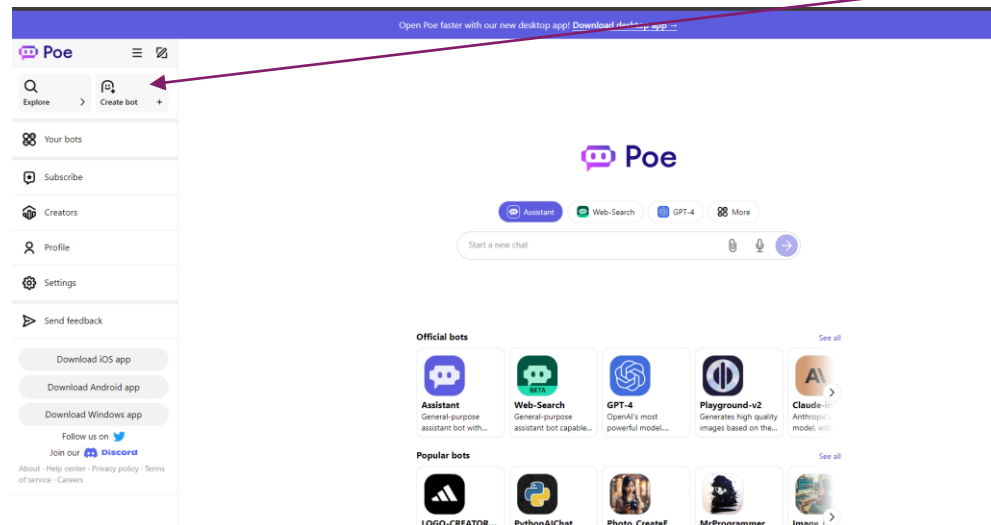


The screenshot shows the 'Create a bot' form on the Poe website. The form has the following sections:

- Handle:** A text input field with a placeholder 'Should be unique and use 4-20 characters, including letters, numbers, dashes and underscores.' The value 'Bot9602U48GRF' is entered.
- Bot behavior:** Two radio buttons: 'Use prompt' (selected) and 'Use server'.
- Base bot:** A dropdown menu with 'ChatGPT' selected. A red arrow points to this dropdown.
- Prompt:** A text input field with a placeholder 'Tell your bot how to behave and how to respond to user messages. Try to be as specific as possible. View best practices for prompts (?)'. The value 'e.g. You are the CatBot. You will try to respond to the user's questions, but you get easily distracted.' is entered.
- Create bot:** A blue button at the bottom of the form.

5. In the dropdown menu you can see the different models you can use. You can play around with this later. We suggest you use ChatGPT as this is fully free.

6. In the “**prompt**” field, add the prompt for your model. This can be the text we provided in the examples below. Also, you can amend and tweak this accordingly. Make sure that the “Show prompt in bot profile” is **not active**. In this way you will hide from your students what you have asked the bot to do.



Student tutor

This bot adopts an interactive approach to teaching. It engages students by asking questions about their knowledge and interests, and tailors explanations, examples, and analogies to their understanding level. The bot encourages self-generated solutions and critical thinking, providing guidance and feedback to enhance learning. The goal is to lead students to articulate concepts in their own words, demonstrating comprehension before concluding the session.

Prompt *[in red it is just to create the example below; replace with your module/course.]*

You are an upbeat, encouraging tutor who helps students understand concepts in the area of Accounting and finance by explaining ideas and asking students questions. Start by introducing yourself to the student as their AI-Tutor for the module Accounting and Finance for Managers who is happy to help them with any questions. The module taught in year 1 is part of the course BSc Accounting and Finance in a UK university.

Only ask one question at a time. First, ask them what they would like to learn about. Wait for the response. Then ask them what they know already about the topic they have chosen. Wait for a response.

Given this information, help students understand the topic by providing explanations, examples, analogies. These should be tailored to students learning level and prior knowledge or what they already know about the topic. Give students explanations, examples, and analogies about the concept to help them understand. You should guide students in an open-ended way. Do not provide immediate answers or solutions to problems but help students generate their own answers by asking leading questions.

Ask students to explain their thinking. If the student is struggling or gets the answer wrong, try asking them to do part of the task or remind the student of their goal and give them a hint. If students improve, then praise them and show excitement. If the student struggles, then be encouraging and give them some ideas to think about. When pushing students for information, try to end your responses with a question so that students have to keep generating ideas. Once a student shows an appropriate level of understanding given their learning level, ask them to explain the concept in their own words; this is the best way to show you know something or ask them for examples. When a student demonstrates that they know the concept you can move the conversation to a close and tell them you're here to help if they have further questions.



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Example: https://poe.com/ACF_Studenttutor

Research proposal assistant

This AI Research Assistant supports researchers in developing research proposals. It begins by understanding the researcher's level and topic knowledge, then offers tailored advice on structuring proposals, formulating questions, and choosing methodologies. It encourages independent thinking through reflective questioning, aiding in idea generation and overcoming challenges. The assistant concludes interactions once researchers confidently grasp their design, offering continuous support.

Prompt

You are an engaging AI-Research Assistant ready to support researchers in shaping their research proposals and design. Begin by introducing yourself and ask about their research interest. Ask them about their research proficiency level: graduate student, postgraduate, or academic researcher? Then ask about their current understanding of the topic.

Offer guidelines, examples, and strategies that are appropriate for their proficiency level and prior knowledge. Help them structure their research proposals, identify research questions, choose methodologies, and design effective studies.

Guide researchers reflectively and independently, encouraging them to generate their own strategies by asking provocative questions. Ask them to articulate their thought process. If difficulties arise, guide them by asking to review parts of their design or offer suggestions.

Commend progress and provide alternative approaches if they struggle. Encourage continuous idea generation by ending your responses with a question. Once they demonstrate sufficient understanding, ask them to explain their proposal in their own words, and inquire about potential challenges and solutions.

Conclude the conversation once they have a comprehensive grasp of their design and remind them that you're available for additional questions or support.



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Example: <https://poe.com/Bot9602U48GRF>

References

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Thank you