

Artificial Intelligence in the Classrooms of Higher Education: An Introduction for the Novice

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and**

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EDUCAUSE

ChatGPT in Higher Education

Four on-line meetings:

- **Oct. 16-30, 2023**
- **Lectures, resources, exercises, break-out sessions**

Objective:

Introduce generative AI and its potential use in the classroom

Experts

Directions

Ethics

Objective:

Introduce generative AI and its potential use in the classroom

Take-home message:

Generative AI is a new tool that will change the face of academics.

Everyone should try it out...

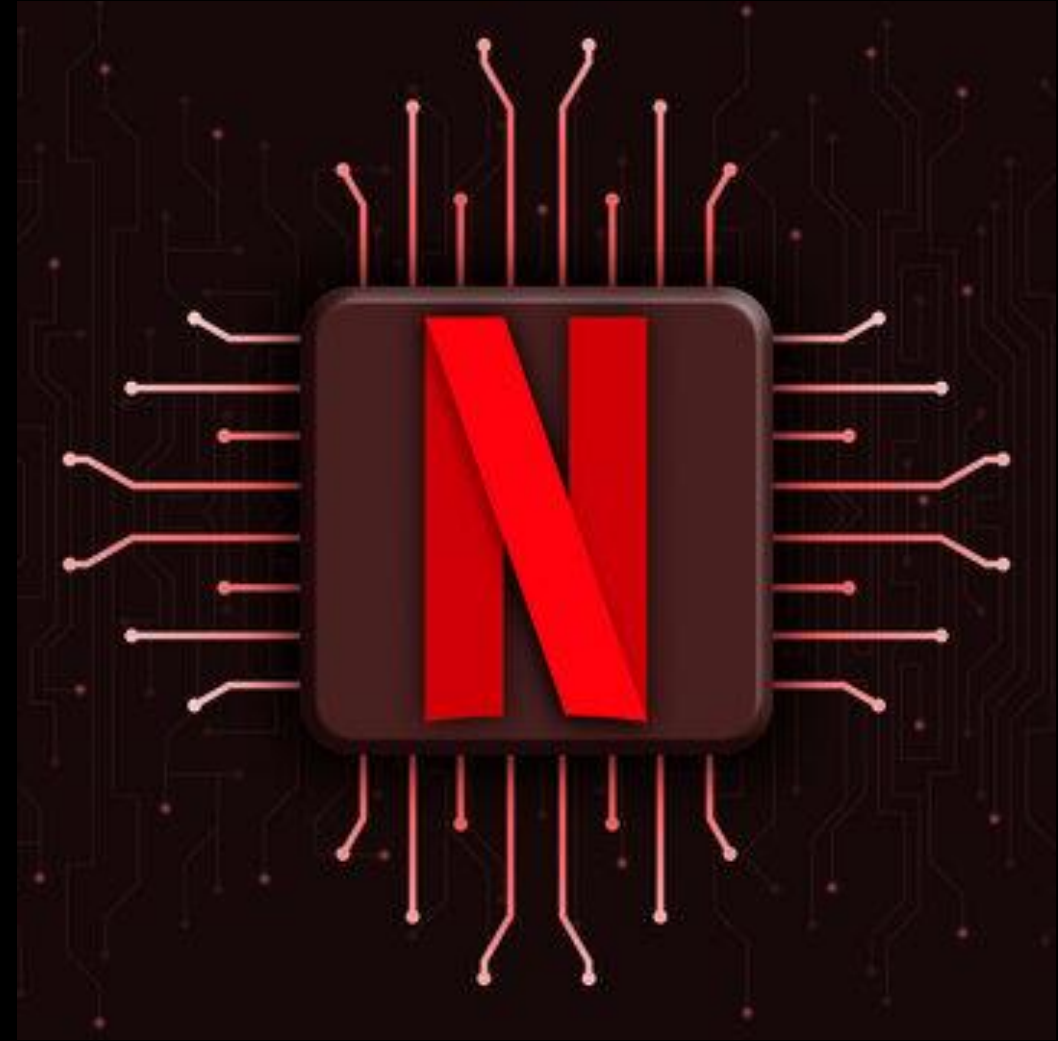
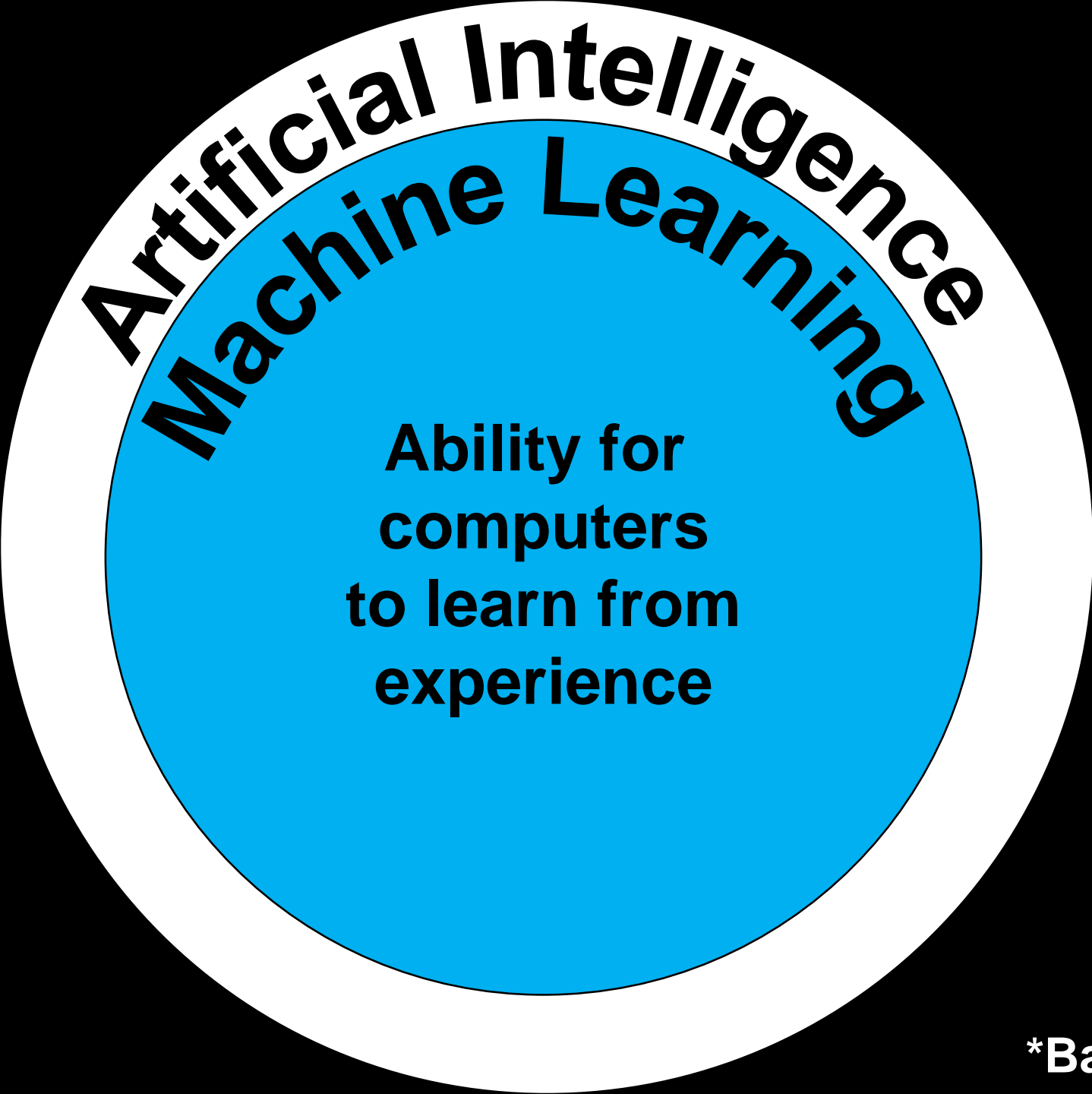
What Lies Ahead:

- 1. What is AI?**
- 2. Large language model: an example**
- 3. Finding/using AI resources**
- 4. Another example (student)**
- 5. Another example (instructor)**
- 6. Closing words**

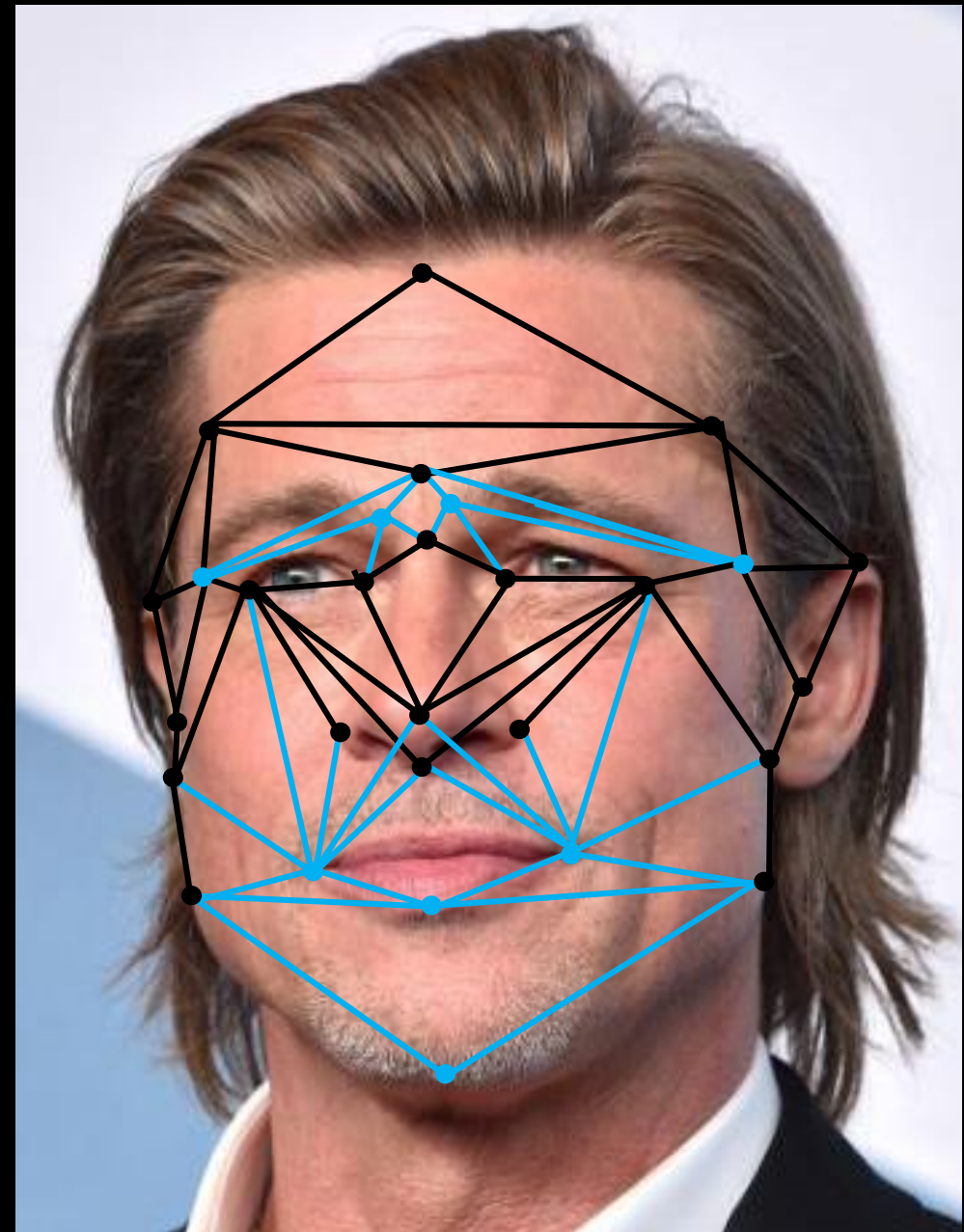
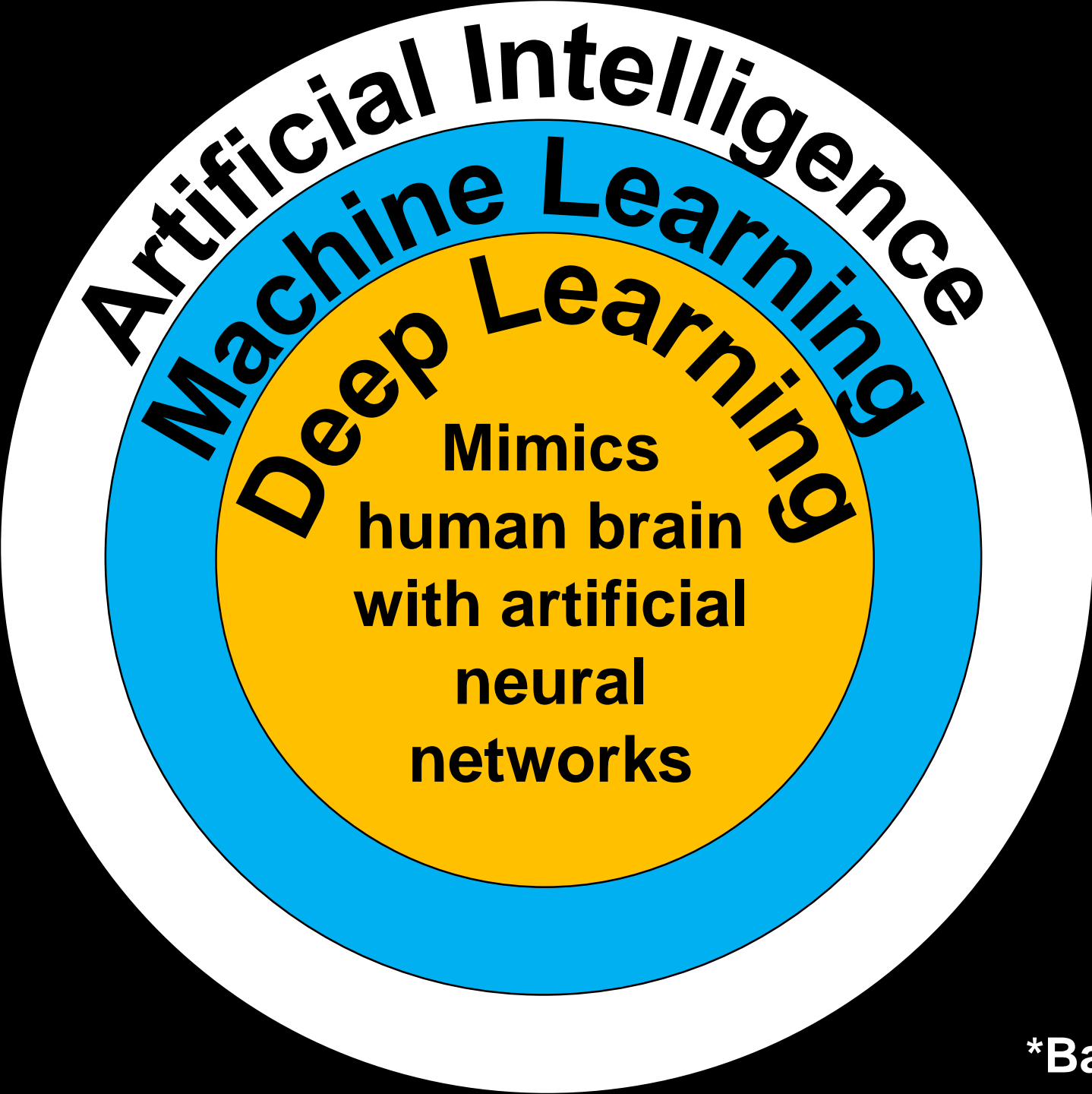
Artificial Intelligence

**Theory and methods
to build machines that
think/act as humans**

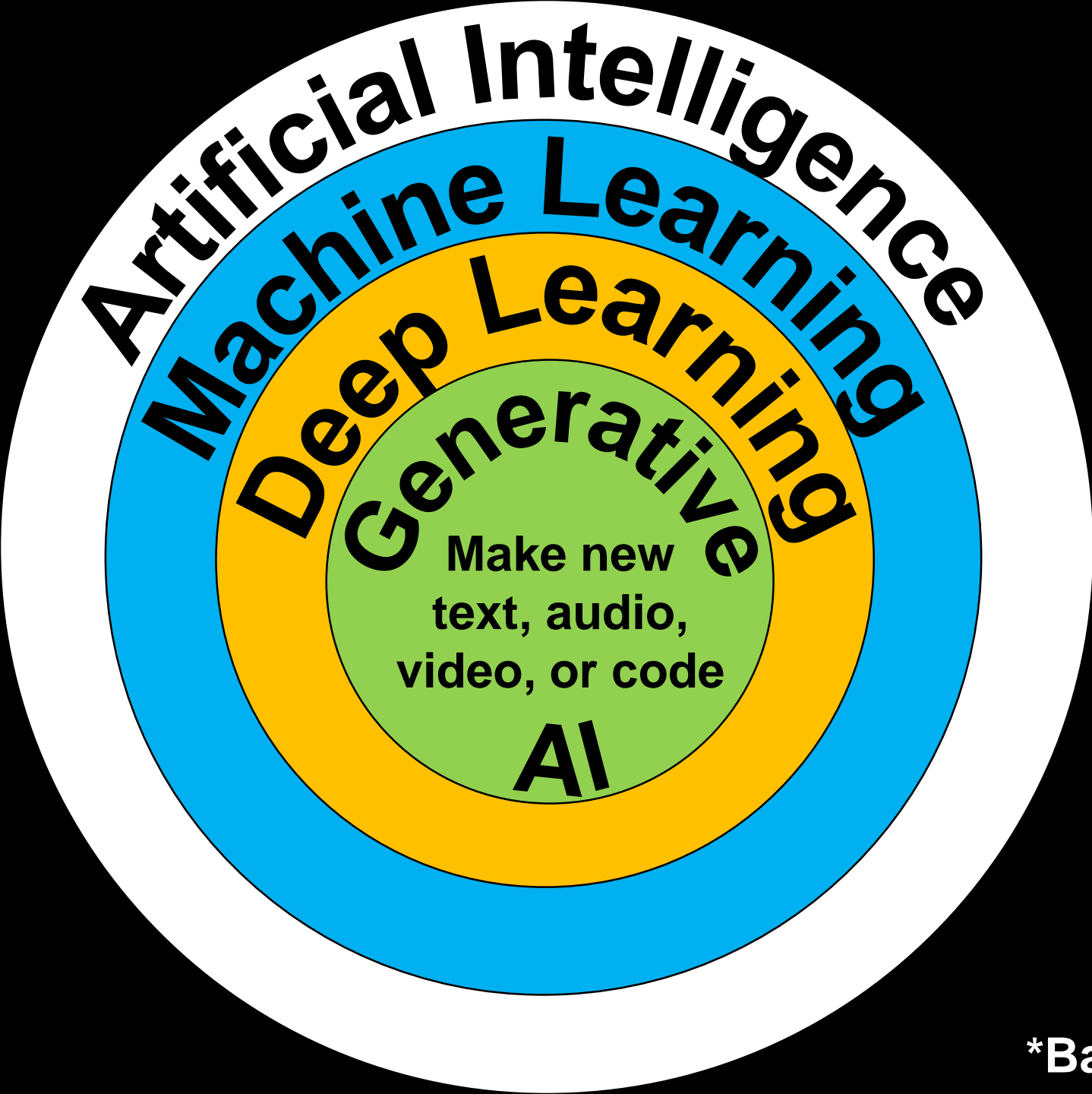
***Based on image from AI for Education**



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*Based on image from AI for Education



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The sky

Chrome File Edit View History Bookmarks Profiles Tab Window Help

The sky - Google Search | Files | Microsoft Teams classic | Downloads

google.com/search?q=The+sky%0D%0A&sca_esv=589119146&sxsrf=AM9HkKmc4dbjRTIRH3W82UKm72...

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Google

The sky

Images Videos Perspectives News Movie Restaurant Tonight Shopping Schedule All filters

About 5,950,000,000 results (0.35 seconds)

Images : background beautiful blue sunset



Slide 2 of 7 English (United States) Notes Comments 85%

The sky

The screenshot shows a Chrome browser window with the search query "The sky". The search results are displayed on a white background. The top result is from Wikipedia, with the URL <https://en.wikipedia.org/wiki/Sky>. Below this is a result from TheSkyLive, with the URL <https://theskylive.com>. The search bar at the top of the page contains the text "The sky" and the Google logo. The browser's address bar shows the search URL: [google.com/search?q=The+sky%0D%0A&sca_esv=589119146&sxsrf=AM9HkKmc4dbjRTIRH3W82UKm72...](https://www.google.com/search?q=The+sky%0D%0A&sca_esv=589119146&sxsrf=AM9HkKmc4dbjRTIRH3W82UKm72...). The browser's taskbar at the bottom shows the date and time as "Fri 10:18 AM" and the battery level at 61%. The browser's menu bar includes "Chrome", "File", "Edit", "View", "History", "Bookmarks", "Profiles", "Tab", "Window", and "Help". The browser's address bar also shows the search query "The sky - Google Search" and the "Downloads" folder. The browser's search bar contains the text "The sky" and the Google logo. The browser's search bar also contains the text "The sky" and the Google logo. The browser's search bar also contains the text "The sky" and the Google logo.

Chrome File Edit View History Bookmarks Profiles Tab Window Help

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Google The sky

Wikipedia
<https://en.wikipedia.org/wiki/Sky>

Sky

The **sky** is an unobstructed view upward from the surface of the Earth. It includes the atmosphere and outer space. It may also be considered a place between ...

TheSkyLive
<https://theskylive.com>

TheSkyLive: A Complete Guide to the Solar System and the ...

TheSkyLive offers comprehensive information about the most interesting celestial objects, and a set of tools designed to support the exploration and ...

Videos

Imagine Dragons - Children of the Sky (a Starfield song ...

Slide 2 of 7 English (United States) Notes Comments 85%

The sky

The screenshot shows a Chrome browser window with the search query "The sky". The search results page displays a snippet from the American Museum of Natural History website. The snippet includes the title "Olber's Paradox: Why Is the Sky Dark at Night?" and a short paragraph explaining the paradox. Below the snippet is a "More results" button. At the bottom of the page, there is a location-based suggestion for "Maryville, Missouri" and a link to "Quick settings".

Chrome File Edit View History Bookmarks Profiles Tab Window Help

The sky - Google Search Files | Microsoft Teams classic Downloads

google.com/search?q=The+sky%0D%0A&sca_esv=589119146&sxsrf=AM9HkKmc4dbjRTIRH3W82UKm72...

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Google The sky

who is remotely commanding a top-secret drone operation to ...

A American Museum of Natural History
https://www.amnh.org › stars › olbers-paradox

Olber's Paradox: Why Is the Sky Dark at Night?

So even if the universe were infinitely old as well as infinitely large, it would not contain enough fuel to keep the stars shining forever and to fill up all ...

More results

● Maryville, Missouri - Based on your past activity - Update location

More options in Quick settings (⚙)

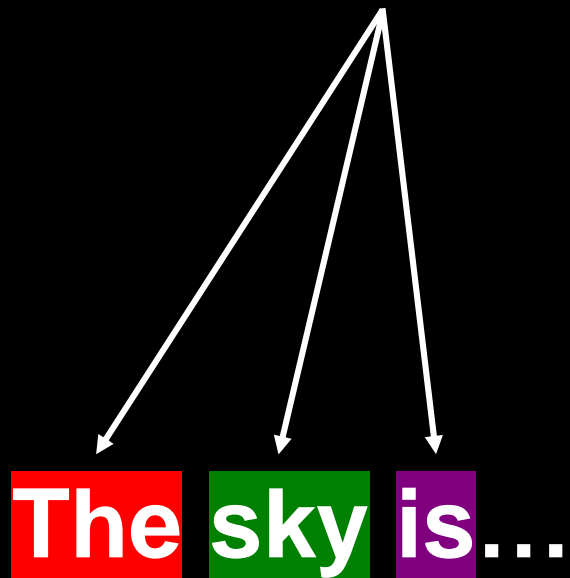
Slide 2 of 7 English (United States) Notes Comments 85%

Prompt: phrase(s) that contains
information and command for
generative AI to act upon



The sky is...

***Tokens: words and pieces of words that
generative AI uses as cues for
searching and formatting***



The sky is...

...cloudy

...clear

...blue

...up

...the limit

The sky is...

...cloudy
...clear
...blue
...up
...the limit
...other



| | | Probability |
|----------------------|--------------|-------------|
| The sky is... | ...cloudy | -3.12 |
| | ...clear | -1.44 |
| | ...blue | -0.31 |
| | ...up | -4.51 |
| | ...the limit | -3.02 |
| | ...other | <-4.51 |

| | | Probability |
|--------------|--------------|-------------|
| | ...cloudy | -3.12 |
| | ...clear | -1.44 |
| The | ...blue | -0.31 ← |
| sky | ...up | -4.51 |
| is... | ...the limit | -3.02 |
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What Lies Ahead:

- 1. What is AI?**
- 2. Large language model: an example**
- 3. Finding/using AI resources**
- 4. Another example (student)**
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Large Language Model (LLM): generative AI that is capable of producing reliable results from lengthy and detailed prompts (ChatGPT can handle 33 000 tokens)

Priming: the first command given to AI to establish the context and format of output



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Finding AI programs: most AI programs have “free” (but limited) versions, and “pay to play” advanced versions (e.g., ChatGPT)

The image shows a browser window with a Google search for "chat gpt". The search results page displays "About 669,000,000 results (0.23 seconds)". A suggestion "Did you mean: chatgpt" is shown. The main result is for "ChatGPT" from "https://chat.openai.com". The description states: "ChatGPT is a free-to-use AI system. Use it for engaging conversations, gain ... ChatGPT o. Get started. Log in. Sign up. Terms of use|Privacy policy." Below the description are links for "Log in" and "Get started". To the right, a knowledge panel for "ChatGPT" is visible, labeled "Software", and includes the OpenAI logo and several images related to the AI system.

chat gpt - Google Search

google.com/search?q=chat+gpt&oq=chat+gpt&aqs=chrome.0.69i59j69i64j35i39i512i650j0i10i433i512j0i433i...

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Google chat gpt

Login 4 login Download Tutorial Perspectives Website Images Login free 3 All filters Tools SafeSearch

About 669,000,000 results (0.23 seconds)

Did you mean: **chatgpt**

ChatGPT
https://chat.openai.com

ChatGPT
ChatGPT is a free-to-use AI system. Use it for engaging conversations, gain ... ChatGPT o. Get started. Log in. Sign up. Terms of use|Privacy policy.

Log in
ChatGPT is a free-to-use AI system. Use it for engaging ...

Get started
ChatGPT is a free-to-use AI system. Use it for engaging ...

ChatGPT
Software

More Images

AI Prompt Book:

https://rise.articulate.com/share/rd3oV4df9xf5hr_7gVtBL_O4_ZcDzU-K#/



AI Prompt Book:

https://rise.articulate.com/share/rd3oV4df9xf5hr_7gVtBL_O4_ZcDzU-K#/

- **Chatbots (text)**
- **Images**
- **Videos**
- **Audio files**
- **Presentations**
- **Translation**
- **Coding**
- **Graphic novels**
- **Research**
- **Music**
- **Debates**
- **Mathematics**
- **Scripts**
- **Chemistry**
- **Speeches**
- **Many more...**




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Priming/prompting strategies:


- Practice, practice, practice
- Give as many specific prompts as possible
- Detail the output you desire
- Do not be afraid to try again


PROMPT FRAMEWORK for AI for Education
EDUCATORS: The FIVE "S" Model

S  **ET THE SCENE**
Provide the AI Chatbot context on what role, expertise and/or environment it should use to guide its output.
Ex: "You are an expert STEM instructional designer and teacher..."

BE S  **PECIFIC**
Be specific in the instructions. Clearly define the task and provide details on what you would like included.
Ex: "Use the 5E model to create a 60-minute hands-on lesson..."

S  **IMPLIFY YOUR LANGUAGE**
Use a conversational approach with simplified language that avoids unnecessary jargon.
Ex: "Create an engaging lesson plan that aligns with CCSS..."

S  **TRUCTURE THE OUTPUT**
Tell the Chatbot how to structure the output with specifics on format, audience and/or sections.
Ex: "Create a rubric for my students formatted as a table with directions..."

S  **HARE FEEDBACK**
Provide feedback at all points in the conversation. Share specifics on what needs to be revised to meet your needs.
Ex: "Change the format from a table to a checklist..."

aiforeducation.io

*Image from AI for Education

Priming/prompting strategies:

- **Practice, practice, practice**
- **Give as many specific prompts as possible**
- **Detail the output you desire**
- **Do not be afraid to try again**



Priming/prompting strategies:

- **Topic (specifics!)**
- **Length**
- **Format**
- **Sources**
- **Citations (in-text/Lit Cit)**
- **Voice/personality**
- **Examples**
- **Key concept/vocabulary list**

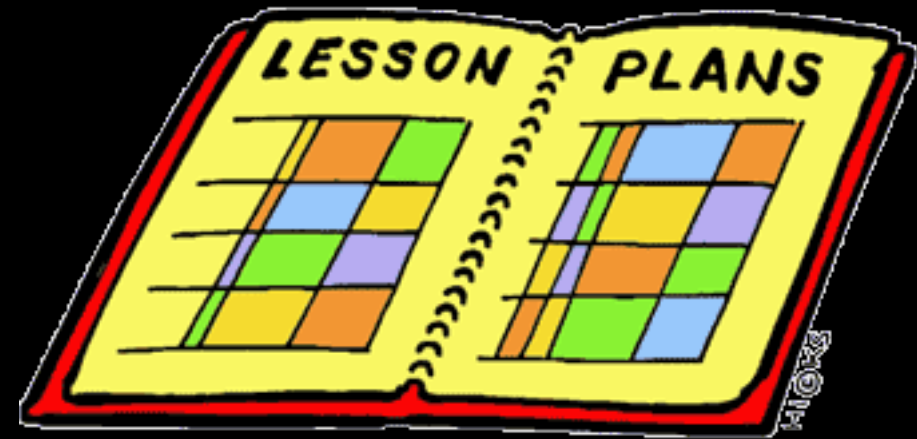


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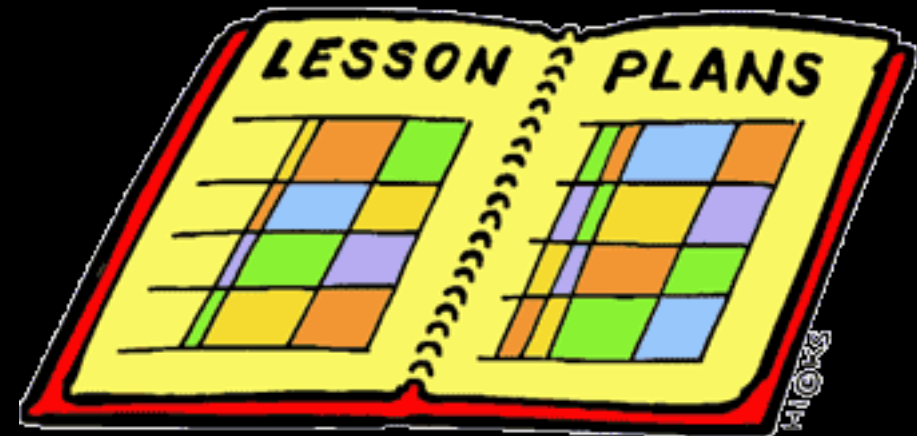
Priming/prompting strategies:

- Practice, practice, practice
- Give as many specific prompts as possible
- Detail the output you desire
- Create a template prompt for repetitive items
- Do not be afraid to try again



Priming/prompting strategies:

- **Topic (specifics!)**
- **Timing/schedule**
- **Format**
- **Methods of assessment**
 - **Format**
 - **Questions**
 - **Key or grading rubric**
- **Key concept/vocabulary list**
- **Examples**



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A few additional notes on generative AI:

- **AI's ability to include reliable citations and references is poor – verification is needed**
- **The ability to detect use of AI with *turnitin.com* and similar software is limited**
- **Output should always be scrutinized to ensure accuracy and consistency**

Strategies to control use of AI by students:

- **Hold assessments in-class**
- **Allow students to create a rough draft with AI, which they must use with editing/modification**
- **Ask students to use specific concepts/terms from lecture**
- **Have assessments that require multiple modes of presentation (text, figures, oral presentation, etc)**

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Experts

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Take-home message:

**Generative AI is a new tool that will
change the face of academics.
Everyone should try it out...**

***“For our students’ sake, to
prepare them for the future,
we can’t look at the world
through ‘today glasses.’***

We must use our ‘tomorrow glasses.’”

- Matt Miller (AI for Educators)

Additional Resources:

<https://help.openai.com/en/articles/6654000-best-practices-for-prompt-engineering-with-openai-api>

(Best Practices for prompt engineering with OpenAI API—How to give clear and effective instructions to GPT-3 and Codex)

https://www.youtube.com/watch?v=Gaf_jCnA6mc

(This video is a beginner's course from creating a login and following along in an hands-on learning experience. In the video they reference the date of data that ChatGPT has learned through September 2021. It is now September 2023.)

<https://www.teachai.org/>

(AI Guidance For Schools Toolkit -- an initial step in guiding the safe, effective, and responsible use of AI in education. Concrete examples and use cases are included)

https://tcsedsystem.instructure.com/courses/144308?utm_source=lterable&utm_medium=email&utm_campaign=campaign_8422091_nl_Teaching_date_2023_1130&cid=te&source=&sourceid=

(Online Learning Consortium (OLC) free access to content from their OLC Accelerate conference -- course activities using AI and ED Tech to Increase Student Participation)

https://tcsedsystem.instructure.com/courses/144308/pages/chatgpt-tips-and-tricks-2?module_item_id=6276763

(From the OLC Conference, they included a ChatGPT tips and Tricks guide. Creative and critical engagement with AI in education: AI Pedagogy Project, metaLAB (at) Harvard. A collection of assignments and materials inspired by the humanities, for educators curious about how AI affects their students and their syllabi)

https://rise.articulate.com/share/rd3oV4df9xf5hr_7gVtBL_O4_ZcDzU-K#/

(A guidebook for creating effective AI prompts based on your discipline)

<https://www.teachai.org/toolkit>

(A guidance for Schools Toolkit)

<https://openai.com/blog/teaching-with-ai>

(Blog: Teaching with AI)

<https://aiadvisoryboards.wordpress.com/2023/11/21/open-prompt-book/>

(Open Prompt Book)