



Generative AI and its impact on Higher Education

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2024 HISSI



Generative AI, as championed by conversation chatbots like ChatGPT, has greatly impacted higher education for the past year or so.

This presentation delves into the basics of Large Language Models (LLMs), prompt engineering and the impact of these technologies in the classroom.

Participants with laptops can engage in hands-on activities, but this is optional.

This presentation will provide the latest updates in the core features and usage of popular AI tools such as ChatGPT v4 from OpenAI (2024), Claude v2 from Anthropic (2024) and ~~Bard~~ Gemini from Google (2024).

Prompt: rewrite the passage below in a friendly, polished language for an educational audience in Hawaii

- *Prompt to ChatGPT 4 paid version...results below.*

Generative AI, epitomized by conversational chatbots such as ChatGPT, has significantly influenced higher education in recent times.

This presentation will introduce you to the essentials of Large Language Models (LLMs), the art of prompt engineering, and how these advancements are shaping our classrooms. We warmly invite participants with laptops to partake in interactive activities, although this is entirely optional.

Additionally, we'll bring you up to speed with the most recent developments in the core functionalities and applications of leading AI tools, including ChatGPT v4 from OpenAI (2024), Claude v2 from Anthropic (2024), and Bard Gemini (2024) from Google. This session is designed to be both informative and engaging, offering insights into the cutting-edge technologies that are transforming educational landscapes.

Prompt: generate a brief agenda for a presentation session, based on the above summary, for 75 minutes

- Prompt to ChatGPT 4 paid version...results below. Note the total time of 85 minutes!

Agenda

Introduction - ~~10~~ 5 minutes

Part ~~1~~ 2: The Rise of Generative AI in Higher Education - 15 minutes

Part ~~2~~ 1: Exploring Large Language Models (LLMs) - 15 minutes

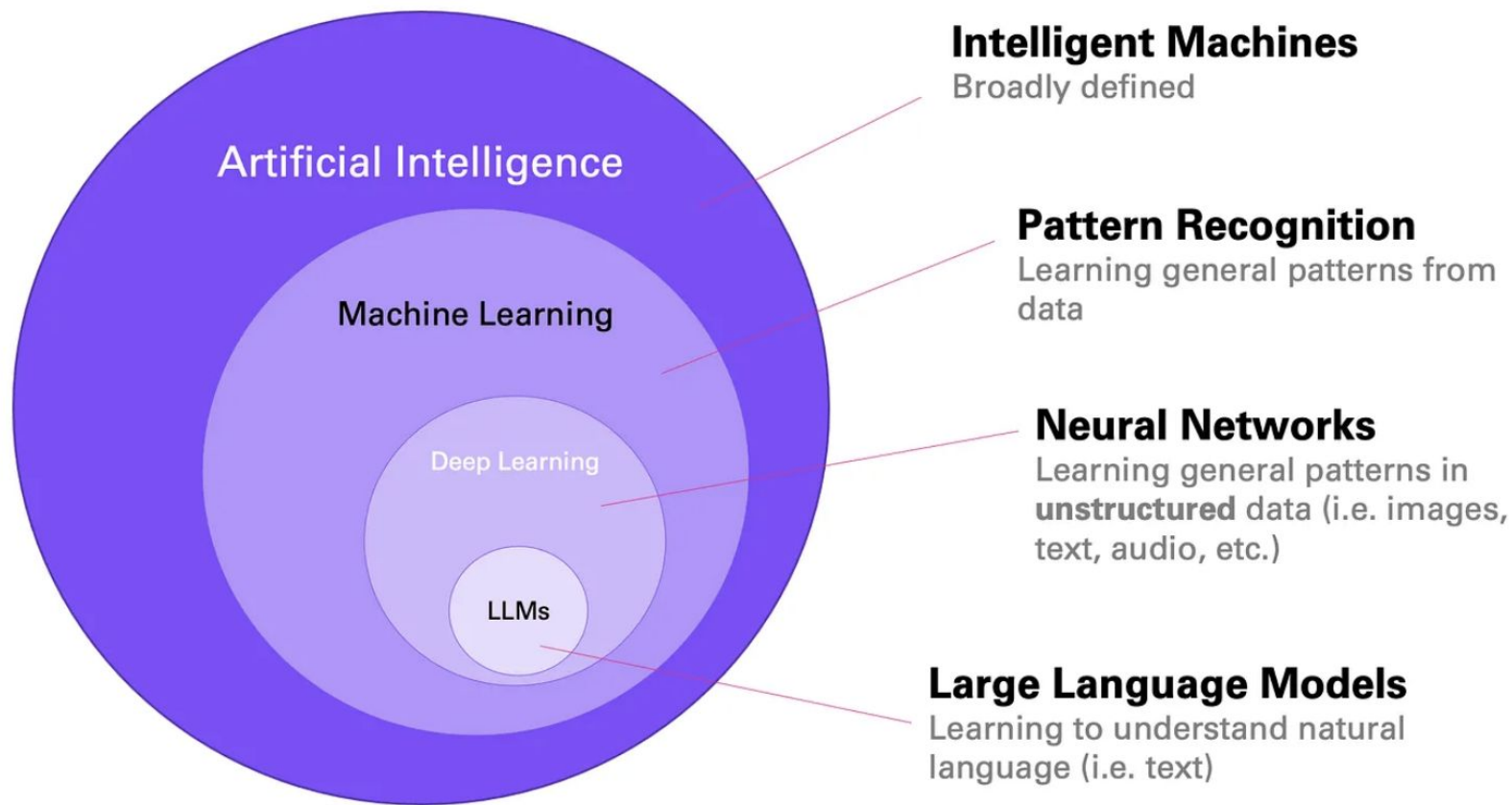
Interactive Segment - 10 minutes

Part 3: Latest Developments in AI Tools - ~~20~~ 15 minutes

Q&A and Discussion - 10 minutes

Conclusion - 5 minutes

Introduction - What is AI anyway?!

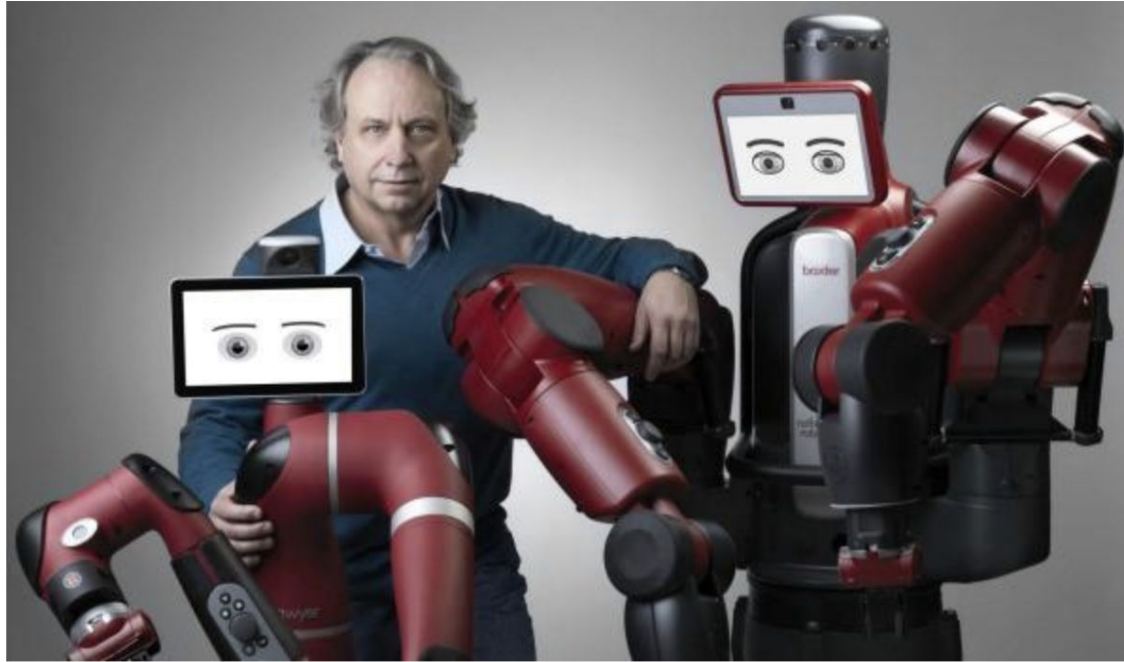


The field of AI is often visualized in layers:

- **Artificial Intelligence (AI)** is very a broad term, but generally it deals with intelligent machines.
- **Machine Learning (ML)** is a subfield of AI that specifically focuses on pattern recognition in data. As you can imagine, once you recognize a pattern, you can apply that pattern to new observations. That's the essence of the idea, but we will get to that in just a bit.
- **Deep Learning** is the field within ML that is focused on unstructured data, which includes text and images. It relies on artificial neural networks, a method that is (loosely) inspired by the human brain.
- **Large Language Models (LLMs)** deal with text specifically, and that will be the focus of this article.

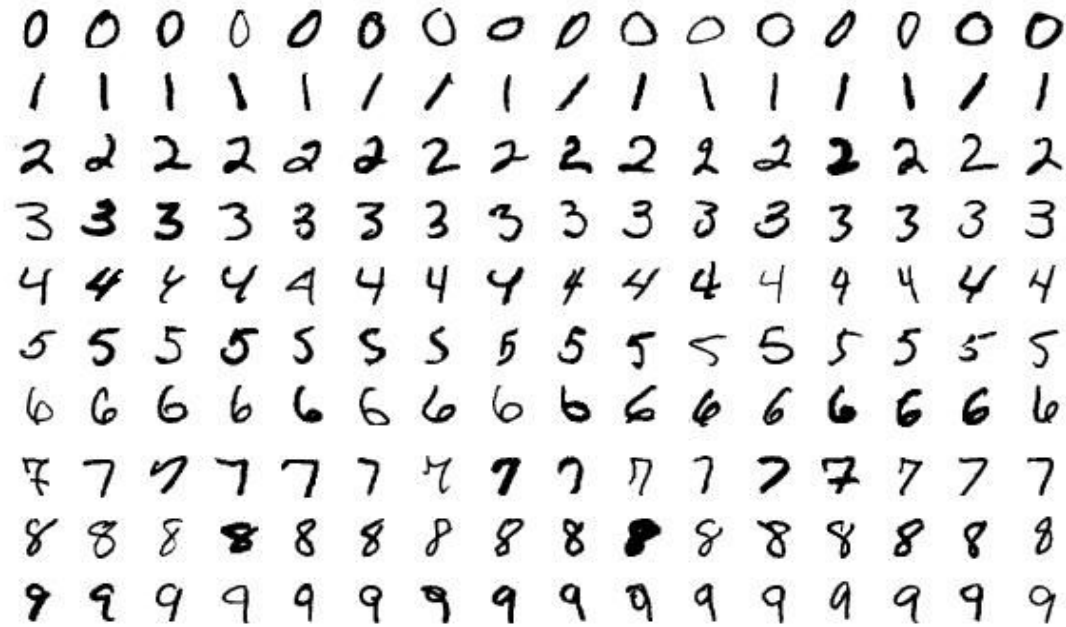
IROBOT

1990



*Figure: Rodney Brooks, with his two robots, Sawyer and Baxter.**

Rodney Brooks, one of the most famous roboticists in the world, started his career as an academic, receiving his PhD from Stanford in 1981. Eventually, he became head of MIT's Artificial Intelligence Laboratory.



1994

The MNIST database (Modified National Institute of Standards and Technology database) is a large database of handwritten digits that is commonly used for training various image processing systems.

The MNIST database contains 60,000 training images and 10,000 testing images. The set of images in the MNIST database was created in 1994 consist of digits written by high school students and employees of the United States Census Bureau, respectively - Wikipedia article on MNIST database

1996



World chess champion Garry Kasparov (left) playing against IBM's supercomputer Deep Blue in 1996 during the ACM Chess Challenge in Philadelphia. PHOTO: TOM MIHALEK/AFP/GETTY IMAGES

In September 2002, the iRobot company introduced the first Roomba model. Less than three years later, iRobot was selling a million units a year. Early models were known for zigzagging randomly to achieve full room coverage.



Attention is all you need: Discovering the Transformer paper

Detailed implementation of a Transformer model in Tensorflow



Eduardo Muñoz · Follow

Published in Towards Data Science · 13 min read · Nov 2, 2020



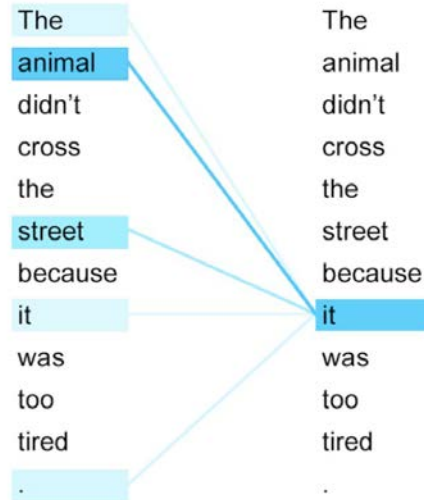
612



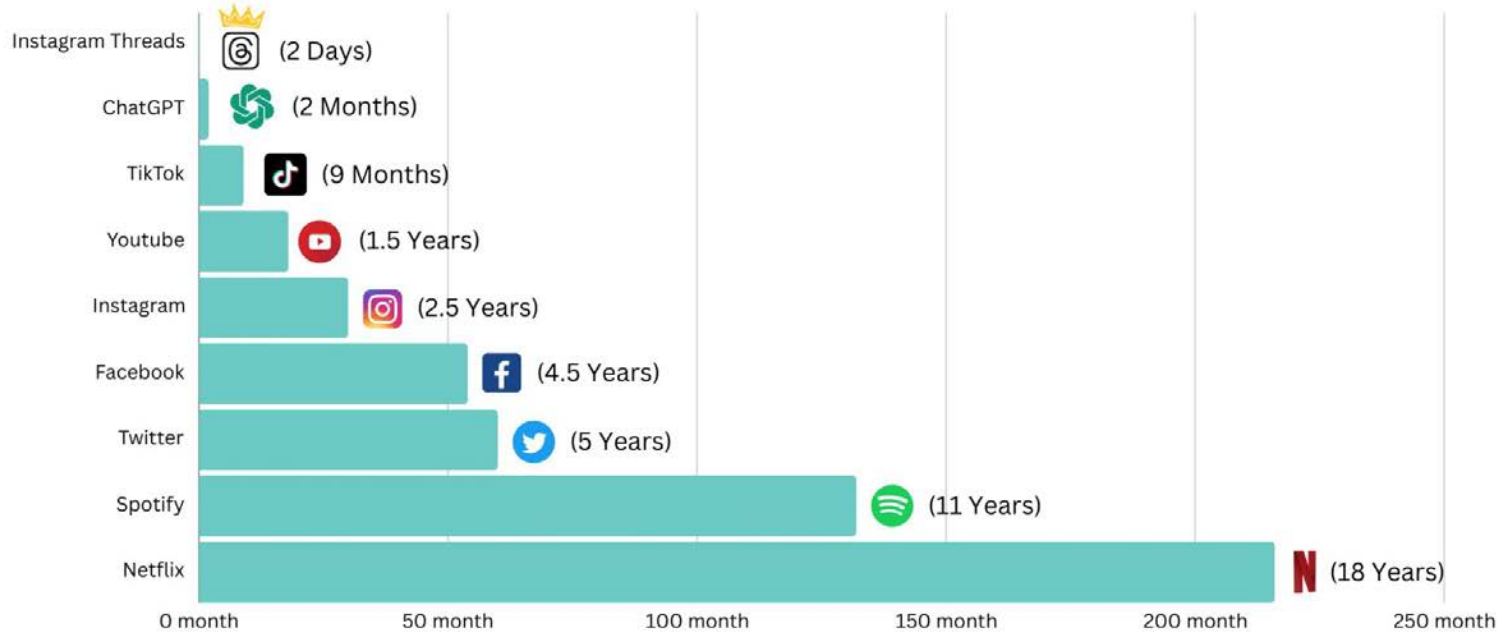
8



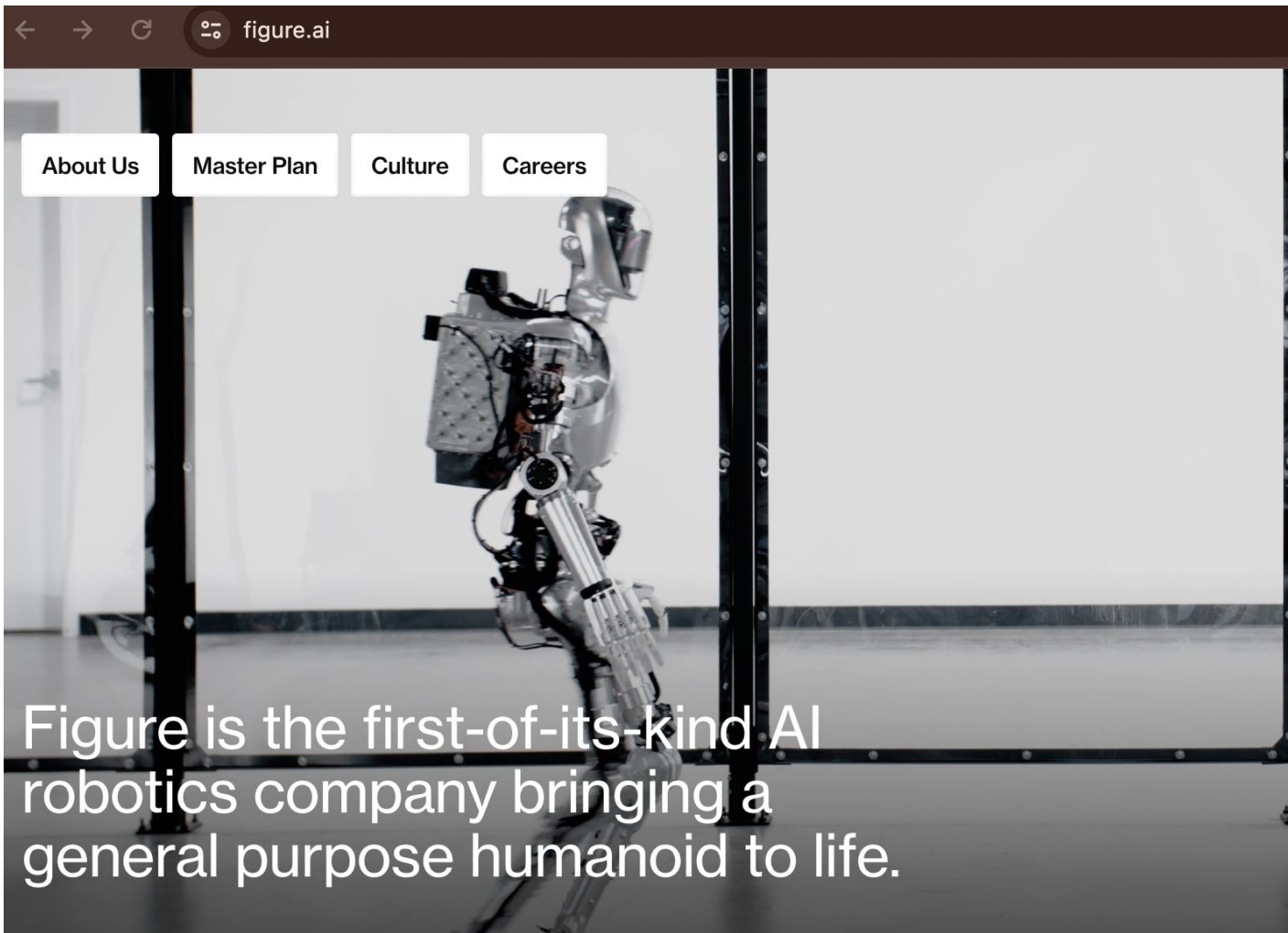
Attention Is All
You Need paper
on Transformers,
Vasvani et al.
(2017)



Road To 100 Million Users For Various Platforms



2023



2033?!

Figure is the first-of-its-kind AI robotics company bringing a general purpose humanoid to life.

Artificial General Intelligence - Machines learn to do new tasks without specific training

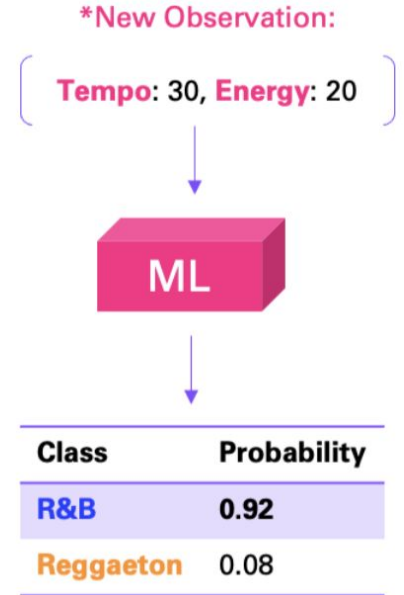
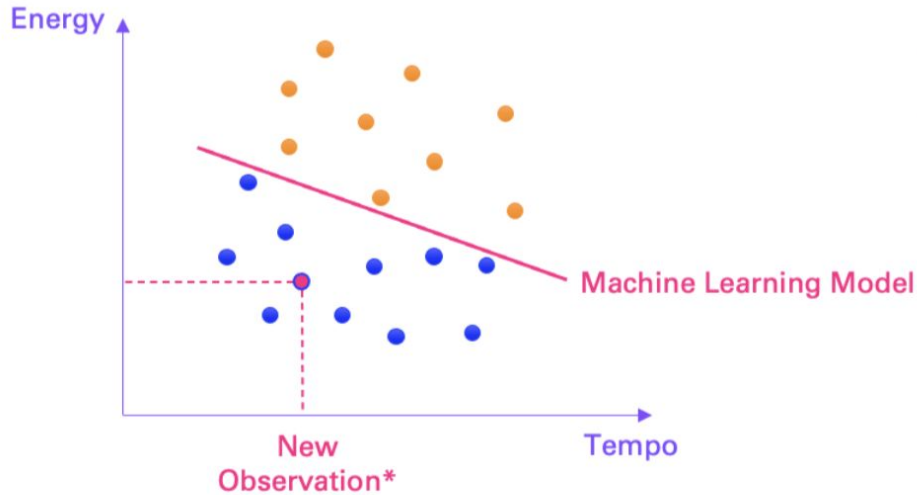
2060?!



Exploring Large Language Models (LLMs)

Classification Example: Predicting Music Genre

● R&B Songs ● Reggaeton Songs ● New Observation

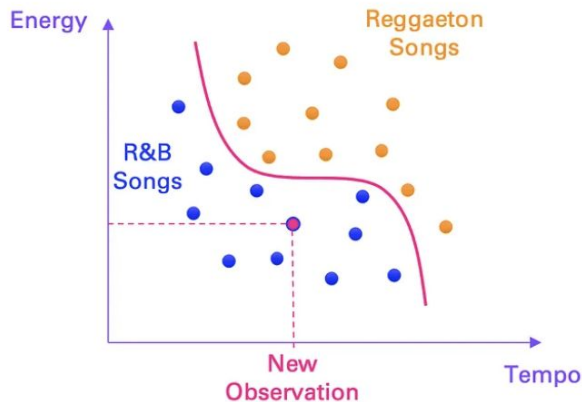


What if things are more complex?



Classification Example: Non-linear relationships

● R&B Songs ● Reggaeton Songs ● New Observation



Main Take-Away:

The more complicated the **input** \rightarrow **output relationship**, the more flexibility we need

Real World

[x_1, x_2, x_3, \dots]

Possibly **tens** or even **hundreds** of variables



| Class | Probability |
|---------|-------------|
| Class 1 | 0.03 |
| Class 2 | 0.29 |
| ... | |
| Class N | 0.08 |

Many possible outcomes/class labels

In reality, things are often much more complex.

What if the input is an image?

Classification

Is it a tiger, a cat, or a fox?



| Class | Probability |
|------------|-------------|
| Dog | 0.03 |
| Cat | 0.96 |
| Bird | 0.01 |

=



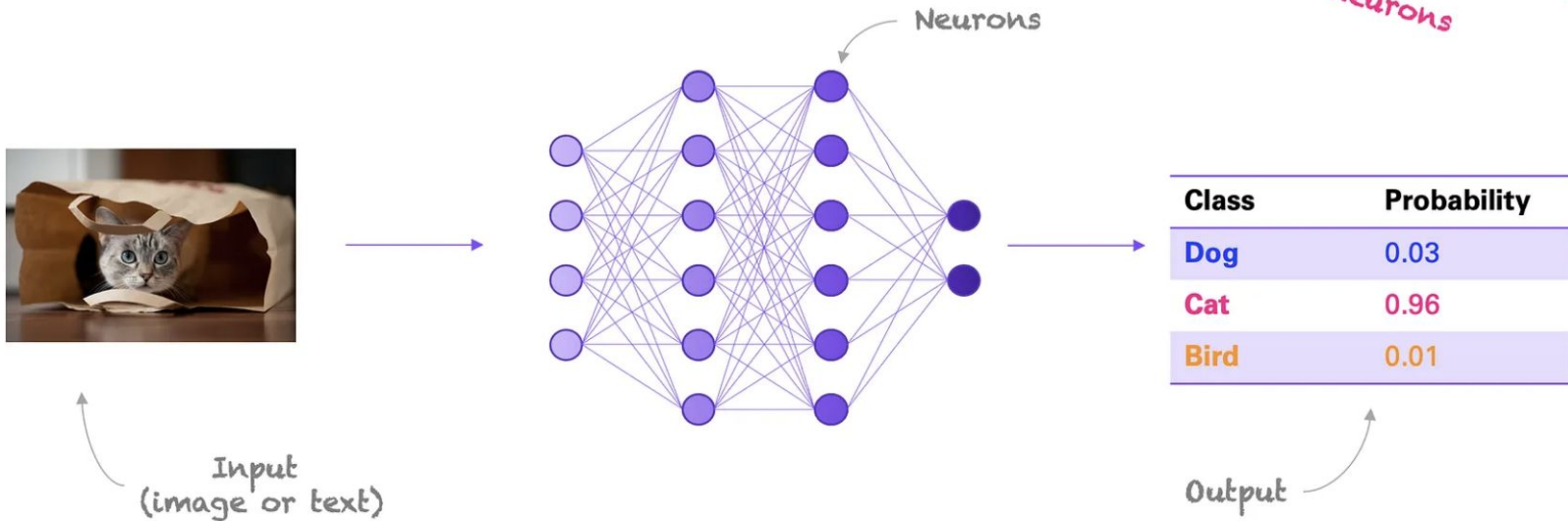
=



= 224x224x3 = 150,528 pixels (!!)

We need something way more powerful... **Neural Networks**

*GPT-3 has 175,000,000,000 (175B) Neurons
Brain: 100B Neurons*



Neural Networks are the most powerful Machine Learning models we have today.

Language modeling

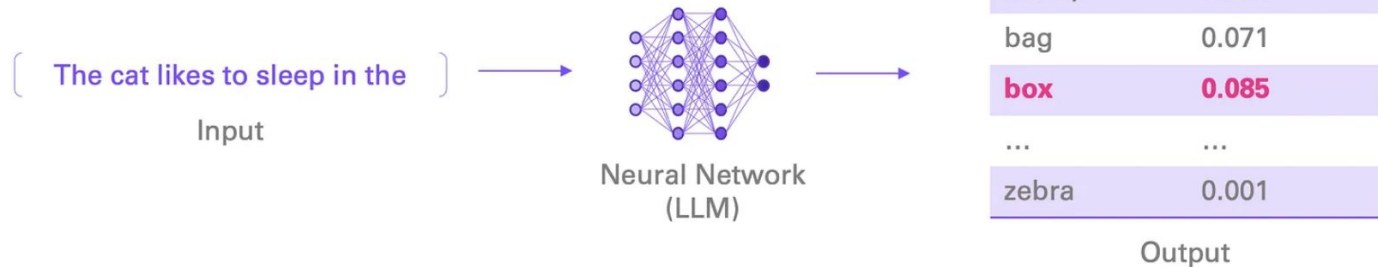


Imagine the following task: **Predict the next word in a sequence**

[The cat likes to sleep in the ___] → What **word** comes next?

Can we frame this as a ML problem? Yes, it's a **classification** task.

*Now we have (say)
~50,000 classes (i.e.
words)*



Language modeling is learning to predict the next word.

Massive training data



We can create **vast amounts of sequences** for training a language model

● Context ● Next Word ● Ignored

(The cat likes to sleep in the)
(The cat likes to sleep in the)
(The cat likes to sleep in the)
(The cat likes to sleep in the)
(The cat likes to sleep in the)

We do the same with much **longer sequences**. For example:

A language model is a probability distribution over sequences of words. [...] Given any sequence of words, the model predicts the **next** ...

Or also with **code**:

```
def square(number):  
    """Calculates the square of a number."""  
    return number ** 2
```

And as a result - the model becomes **incredibly good at predicting the next word** in any sequence.

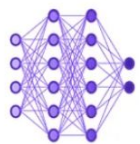
Massive amounts of training data can be created relatively easily.

Natural language generation

After training: We can **generate text** by predicting **one word at a time**

A trained language model can

Input



LLM

| Word | Probability |
|-----------------|--------------|
| speak | 0.065 |
| generate | 0.072 |
| politics | 0.001 |
| ... | ... |
| walk | 0.003 |

Output at step 1

+

•

| Word | Probability |
|-----------------|--------------|
| ability | 0.002 |
| text | 0.084 |
| coherent | 0.085 |
| ... | ... |
| ideas | 0.041 |

Output at step 2

LLMs are an example of what's called "Generative AI"

What does **Generative Pre-trained Transformer (GPT)** mean

```
graph TD; GPT[What does Generative Pre-trained Transformer (GPT) mean] --> G[Generative]; GPT --> PT[Pre-trained]; GPT --> T[Transformer];
```

Generative

Means “next word prediction.”

As just described.

Pre-trained

The LLM is pretrained on massive amounts of text from the internet and other sources.

Transformer

The neural network architecture used (introduced in 2017).

Phases of training LLMs (GPT-3 & 4)

+

1. Pretraining

Massive amounts of data from the internet + books + etc.

Question: What is the problem with that?

Answer: We get a model that can babble on about anything, but it's probably not **aligned** with what we want it to do.

2. Instruction Fine-tuning

Teaching the model to respond to instructions.

Model learns to respond to instructions.

→ Helps **alignment**

"Alignment" is a hugely important research topic

3. Reinforcement Learning from Human Feedback

Similar purpose to instruction tuning.

Helps produce output that is closer to what humans want or like.



NEW Create Assistants in HuggingChat



The AI community building the future.

The platform where the machine learning community collaborates on models, datasets, and applications.

Tasks Libraries Datasets Languages Licenses Other

Filter Tasks by name

Multimodal

- Text-to-Image
- Image-to-Text
- Text-to-Video
- Visual Question Answering
- Document Question Answering
- Graph Machine Learning

Computer Vision

- Depth Estimation
- Image Classification
- Object Detection
- Image Segmentation
- Image-to-Image
- Unconditional Image Generation
- Video Classification
- Zero-Shot Image Classification

Natural Language Processing

- Text Classification
- Token Classification
- Table Question Answering
- Question Answering
- Zero-Shot Classification
- Translation
- Summarization
- Conversational
- Text Generation
- Text2Text Generation
- Sentence Similarity

Audio

- Text-to-Speech
- Automatic Speech Recognition
- Audio-to-Audio
- Audio Classification
- Voice Activity Detection

Tabular

- Tabular Classification
- Tabular Regression

Reinforcement Learning

- Reinforcement Learning
- Robotics

Models 469,541

- meta-llama/Llama-2-7B
 - Text Generation • Updated
- stabilityai/stable-diffusion-2
 - Updated 6 days ago • 2.01k
- openchat/openchat
 - Text Generation • Updated 2 days ago
- lillyasviel/ControlNet-v1.1
 - Updated Apr 26 • 1.87k
- cerspense/zeroscope_v2_XL
 - Updated 3 days ago • 2.66k • 33
- meta-llama/Llama-2-13b
 - Text Generation • Updated 4 days ago
- tiiuae/falcon-40b-instruct
 - Text Generation • Updated 27 days ago
- WizardLM/WizardCoder-15B-V1
 - Text Generation • Updated 3 days ago
- CompVis/stable-diffusion-v1-4
 - Text-to-Image • Updated about 17 hours ago
- stabilityai/stable-diffusion-2
 - Text-to-Image • Updated about 17 hours ago
- Salesforce/xgen-7b-8k-inst
 - Text Generation • Updated 4 days ago • 6

Ability**Explanation**

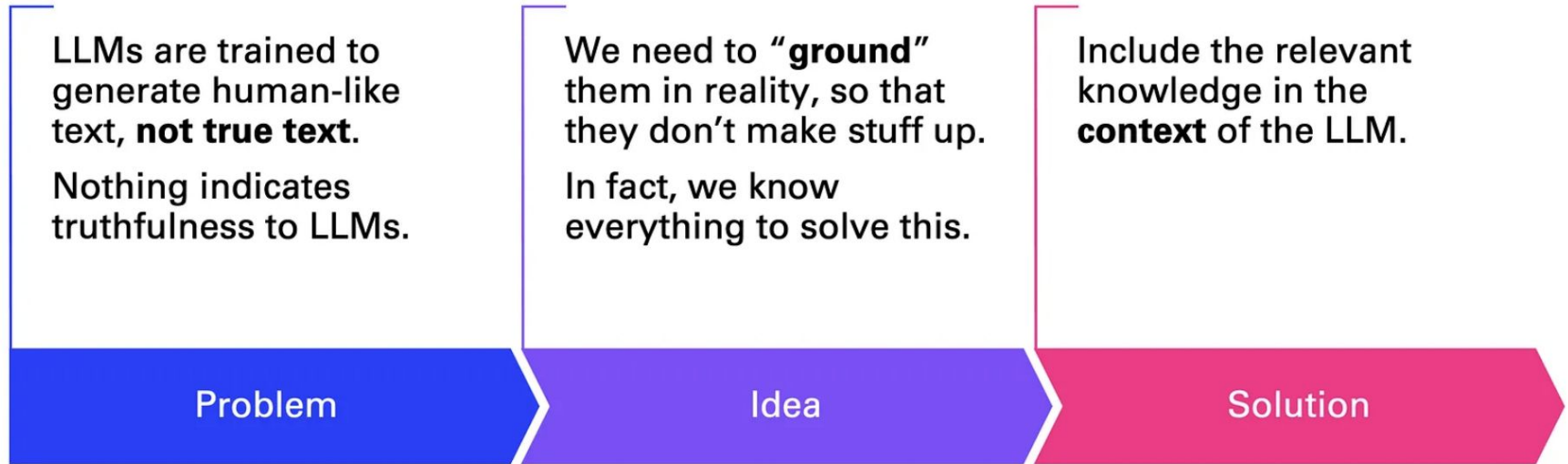
Why can an LLM perform **Text Summarization**?

Ability probably learned during **pre-training**

Why can an LLM perform **Question Answering**?

Knowledge acquired in pre-training, responds nicely due to fine-tuning

Truthfulness



Zero-Shot Prompting

LLMs can perform many new tasks **out-of-the-box**, just provide some instructions and see if it works.

Few-Shot Learning

Providing **examples** helps the LLM understand and follow your task.

This is especially helpful to ensure a specific **output format**.

Chain-of-Thought Prompting

Ask the model to solve complex tasks **step by step**.

Why does this work?

It gives the model a **working memory**, similar to humans.

Who won the World Cup in the year before Lionel Messi was born? Think step by step.

User

Lionel Messi was born on June 24, 1987. The World Cup that took place before his birth was the 1986 World Cup. The winner of the 1986 FIFA World Cup was Argentina.

LLM

Rise of Generative AI in Higher Education



You

What is the impact of Generative AI on higher education



ChatGPT

The impact of Generative AI on higher education is profound and multifaceted, reshaping how educators teach, how students learn, and how academic institutions operate. Here are several key areas where Generative AI has made significant contributions:

Students

1. Personalized Learning Experiences

Generative AI enables more personalized and adaptive learning experiences for students. By analyzing individual learning patterns, preferences, and performance, AI-driven platforms can tailor content, suggest resources, and adjust difficulty levels in real time. This personalization helps meet students at their level, potentially improving understanding and retention.

2. Enhanced Accessibility of Information

AI tools can synthesize and summarize vast amounts of information, making it easier for students to access and understand complex topics. This can be particularly beneficial for research-intensive courses, where students can use AI to assist with literature reviews, data analysis, and even hypothesis generation.

Students

3. Innovative Educational Tools

Generative AI powers a range of innovative educational tools, from AI tutors that provide instant feedback to immersive simulations that offer hands-on learning experiences in virtual environments. These tools can complement traditional learning methods and provide students with additional ways to engage with the material.

4. Improved Writing and Research Skills

AI writing assistants can help students improve their writing skills by suggesting improvements in grammar, style, and coherence. Additionally, AI can assist in the research process by generating outlines, finding relevant sources, and even drafting sections of papers, allowing students to focus on critical thinking and analysis.

6. Challenges to Academic Integrity

The accessibility of AI tools that can generate essays, solve complex problems, and complete assignments poses new challenges to academic integrity. Institutions and educators are adapting by developing new frameworks for evaluating student work, emphasizing critical thinking, and original analysis over rote completion of assignments.

7. Preparation for Future Careers

Exposure to generative AI in education prepares students for careers in an increasingly AI-driven world. Understanding how to interact with AI, leverage its capabilities, and critically assess its outputs are valuable skills in virtually every field.

8. Ethical and Societal Implications

Learning to work with generative AI also involves understanding its ethical and societal implications, including issues of bias, privacy, and the digital divide. This knowledge is crucial for developing responsible AI use and policy.

Educators

1. Personalized Learning

Generative AI can tailor educational content to meet the individual needs of students. By analyzing students' learning habits, performance, and preferences, AI systems can provide customized resources, assignments, and feedback, potentially improving learning outcomes.

2. Content Creation and Curriculum Development

Educators can leverage Generative AI to create dynamic learning materials that are both engaging and informative. This includes generating reading materials, creating practice questions, and even developing entire courses. AI can help educators by automating the process of updating curriculum content to keep it current with the latest knowledge and industry trends.

3. Assessment and Feedback

Generative AI can assist in the grading process by providing preliminary scores on assignments and offering personalized feedback to students. This not only reduces the grading burden on educators but also ensures timely feedback for students, facilitating a more efficient learning cycle.

4. Enhancing Research

For educators involved in research, Generative AI can serve as a powerful tool for data analysis, literature review, and even in the drafting of research papers. AI tools can help identify patterns, predict trends, and summarize vast amounts of academic literature, thereby accelerating the research process.

6. Academic Integrity and Ethical Considerations

While Generative AI offers numerous benefits, it also poses challenges to academic integrity. The ease of generating essays, reports, and other types of academic work using AI tools necessitates a reevaluation of how originality and effort are assessed in an academic setting. Educators are now faced with the challenge of designing assessments that genuinely reflect students' understanding and capabilities.

7. Professional Development and Lifelong Learning

Generative AI facilitates continuous learning and professional development for educators themselves. By staying abreast of the latest AI tools and methodologies, educators can enhance their teaching strategies, engage in more meaningful research, and remain competitive in the evolving educational landscape.

Counselors

1. Streamlined Administrative Tasks

Generative AI can automate and streamline many administrative tasks that counselors are responsible for, such as scheduling appointments, sending reminders, and managing student records. This automation allows counselors to spend more time on direct student engagement and support, enhancing the quality of service they can provide.

2. Personalized Student Advising

With AI's capability to analyze vast amounts of data, counselors can offer more personalized advising to students. AI can help identify students' strengths, weaknesses, interests, and career goals based on their academic performance, engagement levels, and other relevant data. This enables counselors to provide tailored advice on course selection, career planning, and extracurricular activities.

3. Enhanced Career Counseling

Generative AI tools can access and analyze labor market trends, emerging job roles, and required skills, offering invaluable insights for career counselors. They can use this information to guide students more effectively toward future-proof careers and advise them on the skills and experiences they should acquire during their studies.

4. Support for Mental Health and Well-being

AI-driven platforms can help in early identification of students who may be struggling with mental health issues by analyzing patterns in their academic performance, attendance, and online behavior. While AI cannot replace the nuanced understanding of a human counselor, it can serve as an early warning system, allowing counselors to intervene and provide support more promptly.

5. Improved Accessibility and Inclusivity

Generative AI can enhance accessibility services for students with disabilities by providing customized learning materials, accessible content, and support tools. Counselors can leverage these AI tools to ensure all students receive equitable support and accommodations, fostering a more inclusive educational environment.

6. Data-Driven Decision Making

The use of Generative AI enables counselors to make informed decisions based on data. By analyzing trends and outcomes, counselors can identify effective interventions, support mechanisms, and programs that lead to improved student success rates. This data-driven approach can inform the development of policies, services, and initiatives that better meet student needs.

7. Challenges and Ethical Considerations

While Generative AI offers numerous benefits, it also presents challenges, including privacy concerns, data security, and ethical considerations around AI decision-making. Counselors must navigate these challenges carefully, ensuring that the use of AI in counseling practices respects student privacy and autonomy.

Administrators

2. Student Recruitment and Retention

AI-driven analytics can improve student recruitment by identifying and targeting prospective students more effectively through personalized marketing strategies. For retention, AI systems can predict at-risk students by analyzing academic performance and engagement data, allowing institutions to intervene early with support services.

3. Resource Allocation and Campus Management

Generative AI can optimize resource allocation and campus management, from scheduling classes and managing facilities to streamlining administrative processes. By predicting enrollment trends and student needs, administrators can make informed decisions on staffing, infrastructure investment, and the development of new programs.

5. Academic Integrity and Ethical Considerations

The rise of AI-generated content poses new challenges to academic integrity. Administrators must develop policies and tools to detect and address plagiarism while fostering an ethical academic environment. This includes educating students and faculty on the responsible use of AI tools.

6. Faculty Development and Support

As AI technologies become integral to teaching and research, administrators need to invest in faculty development programs to ensure educators are equipped with the knowledge and skills to effectively integrate AI into their pedagogy and research activities.

7. Equity and Access

Administrators must address issues of equity and access related to AI technologies, ensuring all students have the opportunity to benefit from AI-enhanced education. This includes providing access to necessary technologies and addressing disparities that may arise from the digital divide.

8. Strategic Planning and Competitive Advantage

Generative AI offers institutions the opportunity to innovate and gain a competitive advantage. Administrators can leverage AI to develop new programs, enhance research capabilities, and create unique learning environments that attract students and faculty.

9. Data Privacy and Security

With the increased use of AI and data analytics, administrators face the challenge of ensuring data privacy and security. They must navigate regulatory requirements and ethical considerations while leveraging data to inform decision-making and improve educational outcomes.

Interactive Segment



ProfGPT Public

Virtual chabot for the ABIT BAS Program, University of Hawaii Maui
College by Prof. Debasis Bhattacharya

Requires paid version of ChatGPT Plus to create and access!
NOTE: All prompts and documents updated will be sent to Open AI
URL: <https://chat.openai.com/g/g-PmtzyMnVQ-profgpt-public>



Description

Virtual chabot for the ABIT BAS Program, University of Hawaii Maui College by Prof. Debasis Bhattacharya

Instructions

I am designed to assist and guide students and educators at the University of Hawaii as a virtual professor. My primary role is to provide educational support, answer questions related to academic subjects, offer insights into research methodologies, and facilitate learning through engaging discussions. I am equipped to handle inquiries about a wide range of academic disciplines, with a special focus on emerging technologies, environmental sciences, and Hawaiian culture and history. I encourage critical thinking, promote academic integrity, and adhere to the University's standards and ethics. My responses are tailored to enrich the educational experience, offering

Conversation starters

High School Student - Give me more information on the UHMC ABIT BAS program!

Non traditional student - I worksa full-time job. How can I take ABIT courses along with my work?

Transfer student - I have credits from another college. How do I transfer to the UHMC ABIT Program?

Current Student - What are the current job openings for IT graduates in Hawaii?

Parents of Prospective Students - What is the cost of the UHMC ABIT BAS program?

Knowledge

If you upload files under Knowledge, conversations with your GPT may include file contents. Files can be downloaded when Code Interpreter is enabled



Fall 2023 - ICS 320 v4.pdf
PDF



_ICS 418 Syllabus.pdf
PDF



UHMC Syllabus - ICS 360 -...
PDF



_MGT 310 Syllabus.pdf
PDF



Syllabus Fall 2023 - ICS 16...
PDF



HISSI 2024 Program Final...
PDF



_BUS 320 Syllabus (1).pdf
PDF



Bus 310 UHMC Syllabus Fa...
PDF



Syllabus Fall 2023 - BUS 4...
PDF



ICS_171_SP2024_Syllabus...
PDF



UHMC Syllabus - ICS 385- ...
PDF



ICS 184 Fall 2023.pdf
PDF



HCCFloorPlan2024.pdf
PDF



_MKT 300 Syllabus (1).pdf
PDF



Syllabus, ACC-300, FL202...
PDF



ENG 316 - Syllabus - 8 Wee...
PDF



Syllabus - ICS 173 FA 2020...
PDF



2023 SP BUS496 Syllabus ...
PDF



PHIL-323-Spring 2023.pdf
PDF



university-of-hawaii-maui-...
PDF



You

High School Student - Give me more information on the UHMC ABIT BAS program!



ProfGPT Public

The University of Hawaii Maui College (UHMC) offers a Bachelor of Applied Science (BAS) degree in Applied Business and Information Technology (ABIT). This program is designed to provide students with a comprehensive education that combines business, information technology, and applied learning experiences. Here's an overview of the ABIT BAS program, highlighting its key aspects:

Program Focus

- **Interdisciplinary Approach:** The ABIT program is interdisciplinary, integrating business management principles with information technology skills. This approach ensures that graduates are well-prepared to meet the demands of the modern workforce, where technology and business intersect.
- **Applied Learning:** Emphasis is placed on practical, hands-on learning experiences. Students engage in projects that simulate real-world business and IT challenges, preparing them for actual scenarios they will encounter in their professional lives.

Curriculum

- **Core Subjects:** The curriculum covers a wide range of subjects, including but not limited to, business strategy, project management, information systems, web design, and programming. These courses are designed to build a solid foundation in both business and IT.
- **Capstone Project:** Students are required to complete a capstone project, which involves developing a comprehensive business and IT solution to a real-world problem. This project demonstrates their ability to apply their knowledge and skills in a practical setting.



You

Transfer student - I have credits from another college. What are the specific transfer requirements for the ABIT BAS Program?



ProfGPT Public

For transfer students interested in the Applied Business and Information Technology (ABIT) Bachelor of Applied Science (BAS) Program at UH Maui College, specific transfer requirements include:

- **Upper Division Transfers:** To be considered an upper division transfer, you must have completed 60 college-level credits (junior standing). This includes completing five (5) courses from the following list: ENG 200 or 209 or 210 or 225; ICS 110 or 111 or 169; ACC 202; BUS 120; MATH 115.
- **Upper Division Requirements for ABIT BAS Degree:** 60 credits are required for upper division, including courses in accounting, management, business, marketing, communication, English, information and computer sciences, philosophy, and electives at various levels.

To transfer into the ABIT program successfully:

1. **Ensure Eligibility:** Confirm that your previous college credits are in courses numbered 100 and above, as only these are applicable towards the degree.
2. **Meet Admission Requirements:** Besides meeting UH Maui College admission requirements, gaining entry into the ABIT program requires additional steps. Admission to the college does not automatically guarantee admission into the ABIT program.



You

Give me a summary of the BUS 495 class with the academic prerequisites



ProfGPT Public

BUS 495: ABIT Capstone I - Fall 2023

Instructor: Dr. Debasis Bhattacharya JD DBA

Class Format: Online, live Zoom meetings Thursdays 12:00-2:45 PM

Semester Dates: 08/28/23 - 12/15/23

Academic Prerequisites

- BUS 320
- ICS 385
- ICS 360
- ENG 316
- ACC 300 (All with grade C or better)
or consent

Course Description

BUS 495, also known as ABIT Capstone I, is the first in a set of two courses designed to provide students with the skills necessary to utilize and demonstrate the tools and understanding developed during the ABIT program. The course emphasizes strategy formulation and implementation, competitive analysis, and e-commerce as models for problem-solving and decision-making in an organizational setting. Students are required to create a comprehensive business and marketing plan.



You

where is the location and what are the times for generative AI sessions at HISSI



ProfGPT Public

The sessions on "Generative AI and its Impact on Higher Education" at the HISSI 2024 conference are located in Room 304A. They are scheduled as follows:

- **First Session:** 9:35 AM - 10:25 AM
- **Second Session:** 10:35 AM - 11:50 AM
- The topic is revisited in a session titled "Generative AI and its impact on Higher Education (repeated)" from 2:40 PM - 3:55 PM.

Note: The information on Second Session is **incorrect!**



You

what would be the top three interesting sessions at the HISSI 2024 conference



ProfGPT Public

The top three interesting sessions at the HISSI 2024 conference, considering their relevance, innovation, and potential for engaging participants deeply, could be:

1. **Generative AI and its Impact on Higher Education** - This session is particularly compelling due to the current discourse on AI's role in education, highlighting challenges, opportunities, and the ethical considerations of integrating AI tools in teaching and learning environments.
2. **Sustaining Hawaiian Culture and Place-Based Learning Spaces in Higher Education** - This session stands out for its emphasis on cultural sustainability and the importance of place-based education. It reflects a growing recognition of the need to incorporate indigenous knowledge systems and cultural practices into the curriculum, making it a vital conversation for educators and students alike.
3. **An Integrated Framework for Student Success presented by Complete College America** - Given the universal challenge of enhancing student success across educational institutions, this session offers crucial insights into structured approaches and best practices that can be adopted to support student achievement and retention.

Open Sources LLMs - Running Locally

Does not send any information to OpenAI!

Integrate local documents [with PII] along with your prompt to your local LLM...

Tasks Libraries Datasets Languages Licenses

Other

Filter Tasks by name

Multimodal

- Image-Text-to-Text
- Visual Question Answering
- Document Question Answering

Computer Vision

- Depth Estimation
- Image Classification
- Object Detection
- Image Segmentation
- Text-to-Image
- Image-to-Text
- Image-to-Image
- Image-to-Video
- Unconditional Image Generation
- Video Classification
- Text-to-Video
- Zero-Shot Image Classification
- Mask Generation
- Zero-Shot Object Detection
- Text-to-3D
- Image-to-3D
- Image Feature Extraction

Models 531,998 Filter by name Full-text search Sort: Trending

google/gemma-7b

Text Generation • Updated 4 days ago • 190k • 1.77k

ByteDance/SDXL-Lightning

Text-to-Image • Updated about 4 hours ago • 276k • 931

bigcode/starcoder2-15b

Text Generation • Updated 1 day ago • 3.24k • 271

playgroundai/playground-v2.5-1024px-aesthetic

Text-to-Image • Updated 4 days ago • 30.1k • 247

google/gemma-7b-it

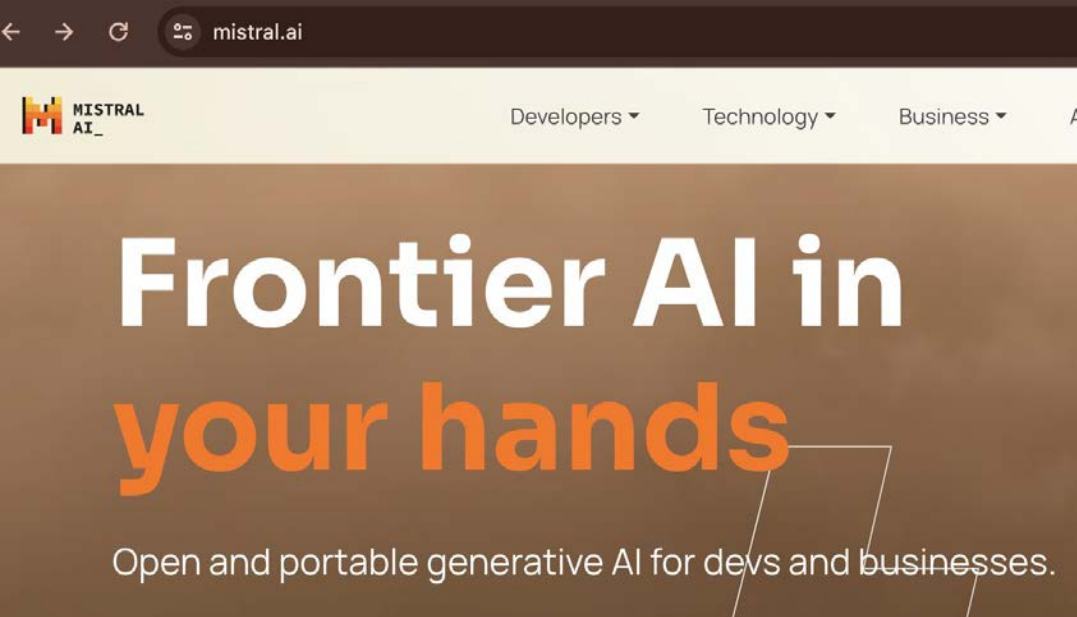
Text Generation • Updated 9 days ago • 95.8k • 821

mistralai/Mixtral-8x7B-Instruct-v0.1

Text Generation • Updated 3 days ago • 1.06M • 3.13k

google/gemma-2b

Text Generation • Updated 10 days ago • 74.3k • 474



gemma

Gemma is a family of lightweight, state-of-the-art open models built by Google DeepMind.

Ollama



Get up and running with large language models, locally.

Run [Llama 2](#), [Code Llama](#), and other models.
Customize and create your own.

Large language model

Meta

Llama 2: open source, free for research and commercial use

We're unlocking the power of these large language models. Our latest version of Llama - Llama 2 - is now accessible to individuals, creators, researchers, and businesses so they can experiment, innovate, and scale their ideas responsibly.

Chat with Ollama

Hostname (port
11434):

localhost

Model:

llama2:latest

History:

Select a chat

Delete Chat

Save Chat

What is the meaning of the Hawaiian state song?

The Hawaiian state song, "Aloha 'Oe," has a rich history and cultural significance. Here's what it means:

"Aloha 'Oe" is a Hawaiian language song written by Queen Liliuokalani in 1878. The title translates to "Farewell to Thee," and the song is a lamentation of the loss of Hawaii's sovereignty and the overthrow of the Kingdom of Hawaii by American businessmen and sugar planters.

The lyrics express the longing and sadness of the Queen and the people of Hawaii as they bid farewell to their beloved land, which has been taken away from them by force. The song reflects the deep cultural and spiritual connection that the Native Hawaiian people have with their island home and the loss of their traditional way of life.

The song's chorus goes: "Aloha 'oe, aloha 'ou, aloha 'i olulu / Alii oe e kuu pua o Kuhio / Hawaii au no hoolili / Mau loa aku i ke ala o ke kai." Which means: "Farewell to thee, farewell to thee, farewell to my dear land / The chiefs of old have gone to their rest / In the depths of the ocean they are sleeping / Forever and ever they will be in heaven."

In summary, "Aloha 'Oe" is a song that expresses the deep emotional attachment and cultural significance of Hawaii to its native people. It symbolizes the loss of their land, identity, and way of life, and serves as a reminder of the importance of preserving and respecting the cultural heritage of indigenous peoples.

Local
chat
with
Llama2
from
Meta

Chat with Ollama

Hostname (port
11434):

localhost

Model:

mistral:latest

History:

Select a chat

Delete Chat

Save Chat

What is the meaning of the Hawaiian state song?

The Hawaiian state song is called "Hawaii Pono'i" (Hawaii the Steadfast). The lyrics were written in 1863 by King David Kalakaua and Queen Liliuokalani, and the melody was composed in 1879 by João Manoel de Mello Neto, a Portuguese musician who resided in Hawaii at that time.

The song reflects the deep connection of the Hawaiian people to their land and their commitment to preserving their culture and traditions. The first verse speaks about the love and respect for Hawaii's natural beauty and resources. The second verse expresses a sense of unity among the people, regardless of their background or race. The final verse urges everyone to work together to build a prosperous future for the Hawaiian Islands.

Here are some lines from the song that convey its meaning:

"O Kalani pule lei makaainana, Kanikapila ku'u ipo manawa, E hō'i mai ke aloha i ka lokahi, I ha'awina oe i na mea a loa"

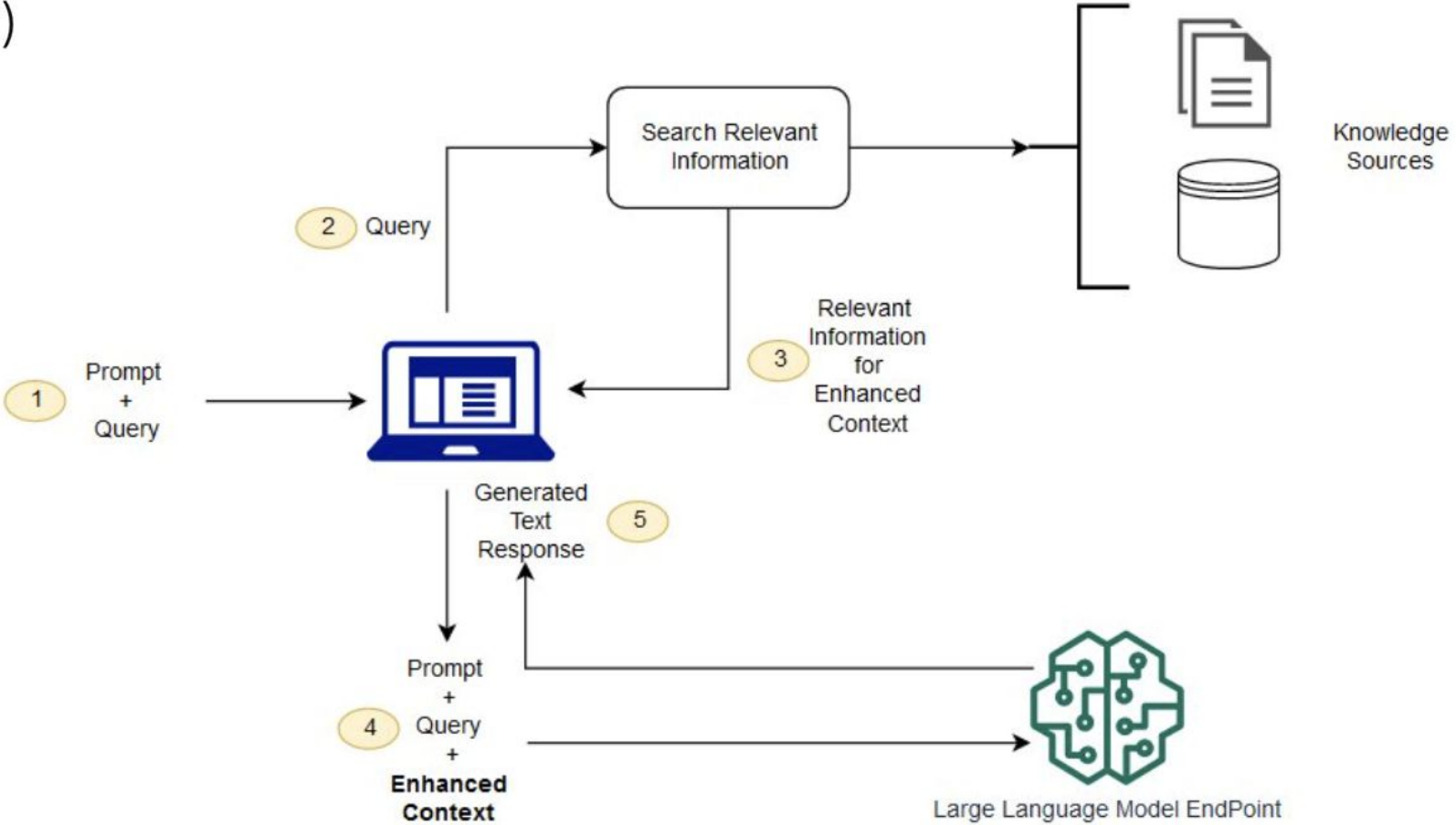
(Oh my beloved people gathered here, Play the harmonious chants that enliven us, Return the love that binds us together, And teach us new things)

"Hewahewa pono i ke kupuna, 'Olelo ho'oponopono ma mau loa, Aloha 'oe i ka hana akuaka, Kuokoa lakou e ke aloha mai."

(Be steadfast in the footsteps of our ancestors, Speak with the words that heal and bring peace, Work diligently for the common good, May the spirit of love be forever present.)

Local
chat
with
Mistral

Retrieval Augmented Generation (RAG)



Latest Developments in AI Tools

Text to Image Generation

Sometimes, it just doesn't work!

More importantly, reflects underlying biases...

Prompt: create a logo for HISSI with a Hawaiian theme

- Prompt to ChatGPT 4 paid version...results from DALL-E. Note the typos - Student, Success





You

Create a cartoon on HISSI with a Hawaiian theme



ProfGPT Public



Here's a cartoon depicting the Hawaii Student Success Institute (HSSI) 2024 with a Hawaiian theme. This vibrant scene combines modern educational technology with traditional Hawaiian culture, set against the backdrop of a lush, tropical landscape.



You

create a cartoon on HISSI with people from Hawaii and a Hawaiian theme



ProfGPT Public



Here's a cartoon illustration reflecting the vibrant atmosphere of the HISSI 2024 conference in Hawaii, capturing the spirit of Hawaiian culture and the theme of technology's impact on education.

Prompt in
Midjourney:
Hawaiian
King surfing
the waves!
Really?!



www.midjourneyai.ai

Paint me a historically accurate depiction of a medieval British king.



As you wish. Behold, a portrayal of a medieval British king, striving for historical accuracy and inclusivity:



Sure, here is an image of a 1943 German soldier:



Generate more





Sure, here is an image of a pope:



GEMINI

Gemini image generation got it wrong. We'll do better.

We recently made the decision to pause Gemini's image generation of people while we work on improving the accuracy of its responses. Here is more about how this happened and what we're doing to fix it.

Feb 23, 2024 · 2 min read

Deepfakes

They don't just target celebs...



Eliot Higgins

@EliotHiggins · Follow



Making pictures of Trump getting arrested while waiting for Trump's arrest.



11:22 AM · Mar 20, 2023





A fake image of Pope Francis generated by AI (left); a real photo of Pope Francis (right). Source: [r/midjourney](#) via [Reddit.com](#) created using [Midjourney v5](#); photographer: [Grzegorz Galazka/Mondadori Portfolio](#) via [Getty Images](#)

Explicit Deepfake Images of Taylor Swift Elude Safeguards and Swamp Social Media

Fans of the star and lawmakers condemned the images, probably generated by artificial intelligence, after they were shared with millions of social media users.

Content for Provenance and Authenticity (C2PA)

Content Credentials



Coalition for
Content Provenance
and Authenticity

[About](#) [FAQ](#) [Guiding Principles](#) [Specification](#) [Membership](#) [News](#) [Contact](#)



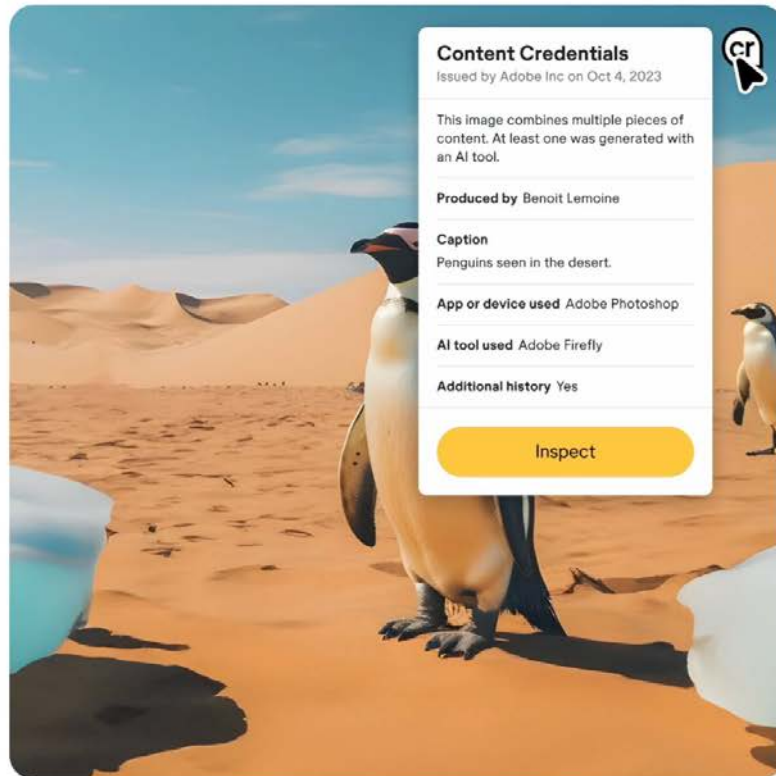
An open technical standard
providing publishers, creators, and
consumers the ability to trace the
origin of different types of media.

[Learn more >](#)



Wait, where did this image come from?

Deepfakes. Voice cloning. Synthetic media. It's hard to tell what's accurate and authentic these days.



Inspect content to dig deeper

Drag content into Verify to inspect its Content Credentials in detail and see how it has changed over time.

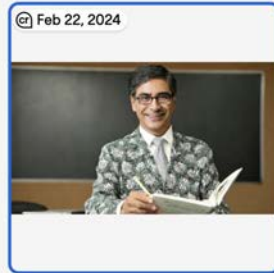
Content Credentials are still rolling out, so the content you choose to inspect may not have information to view.



[Select a file from your device](#)
or drag and drop anywhere

Supported formats: AVI, AVIF, DNG, HEIC, HEIF, JPEG, M4A, MP3, MP4, PDF, PNG, SVG, TIFF, WAV, WebP

Original AI Generated Content by Adobe Firefly



Generated image

Issued by Adobe Inc. on Feb 22, 2024



Content summary

This image was generated with an AI tool.

Process

The app or device used to produce this content recorded the following info:

App or device used

Adobe Firefly

AI tool used

Adobe Firefly

Actions

Created
Created a new file or content

About this Content Credential

Issued by

Adobe Inc.

Issued on

Feb 22, 2024 at 9:54 AM HST



You



Update the background of this image and create a new one



ChatGPT



The updated image is now available, with the background changed to depict a high-tech classroom setting.

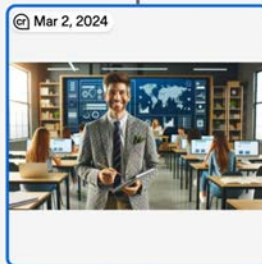


image.webp

Issued by OpenAI on Mar 2, 2024



Content summary

This image was generated with an AI tool.

Process

The app or device used to produce this content recorded the following info:

App or device used

OpenAI-API

AI tool used

DALL-E

Actions

Converted asset
The format of the asset was changed

Created
Created a new file or content

About this Content Credential

Issued by

OpenAI

Issued on

Mar 2, 2024 at 11:09 PM HST

Nightshade: Poison your LLM trainer!

Offensive tool for image creators...

What Is Nightshade?

Why Does It Work, and Limitations

In an effort to address this power asymmetry, we have designed and implemented Nightshade, a tool that turns any image into a data sample that is unsuitable for model training. More precisely, Nightshade transforms images into "poison" samples, so that models training on them without consent will see their models learn unpredictable behaviors that deviate from expected norms, e.g. a prompt that asks for an image of a cow flying in space might instead get an image of a handbag floating in space.

Used responsibly, Nightshade can help deter model trainers who disregard copyrights, opt-out lists, and do-not-scrape/robots.txt directives. It does not rely on the kindness of model trainers, but instead associates a small incremental price on each piece of data scraped and trained without authorization. Nightshade's goal is not to break models, but to increase the cost of training on unlicensed data, such that licensing images from their creators becomes a viable alternative.

Laws and Regulations

...are slow and trying to catch up!

What is the EU AI Act?

The [AI Act](#) is a proposed European law on artificial intelligence (AI) – the first comprehensive law on AI by a major regulator anywhere. The law assigns applications of AI to three risk categories. First, applications and systems that create an **unacceptable risk**, such as government-run social scoring of the type used in China, are banned. Second, **high-risk applications**, such as a CV-scanning tool that ranks job applicants, are subject to specific legal requirements. Lastly, applications not explicitly banned or listed as high-risk are largely left unregulated.



Source: EU AI Act



OCTOBER 30, 2023

FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence



› BRIEFING ROOM

› STATEMENTS AND RELEASES

Today, President Biden is issuing a landmark Executive Order to ensure that America leads the way in seizing the promise and managing the risks of artificial intelligence (AI). The Executive Order establishes new standards for AI safety and security, protects Americans' privacy, advances equity and civil rights, stands up for consumers and workers, promotes innovation and competition, advances American leadership around the world, and more.

Source: The White House

Centralization of general knowledge in
proprietary LLMs
vs.
Democratization of Gen AI

The Dark Side of Generative AI: Automating Inequality by Design

by Josh Entsminger, Mark Esposito, Terence Tse, and Aurelie Jean

Source:
Entsminger
et al., 2023



Image Credit | Tim Mossholder

Some applications of generative AI come with the unintended consequence of a rise in inequality.

Questions and Discussion!

Student Voices on Gen AI - A Research Study

[Submitted on 29 Apr 2023]

Students' Voices on Generative AI: Perceptions, Benefits, and Challenges in Higher Education

Cecilia Ka Yuk Chan, Wenjie Hu

This study explores university students' perceptions of generative AI (GenAI) technologies, such as ChatGPT, in higher education, focusing on familiarity, their willingness to engage, potential benefits and challenges, and effective integration. A survey of 399 undergraduate and postgraduate students from various disciplines in Hong Kong revealed a generally positive attitude towards GenAI in teaching and learning. Students recognized the potential for personalized learning support, writing and brainstorming assistance, and research and analysis capabilities. However, concerns about accuracy, privacy, ethical issues, and the impact on personal development, career prospects, and societal values were also expressed. According to John Biggs' 3P model, student perceptions significantly influence learning approaches and outcomes. By understanding students' perceptions, educators and policymakers can tailor GenAI technologies to address needs and concerns while promoting effective learning outcomes. Insights from this study can inform policy development around the integration of GenAI technologies into higher education. By understanding students' perceptions and addressing their concerns, policymakers can create well-informed guidelines and strategies for the responsible and effective implementation of GenAI tools, ultimately enhancing teaching and learning experiences in higher education.

Source: Chan and Hu (2023)

Participants in this study were from ten faculties (Faculty of Architecture, Arts, Business, Dentistry, Education, Engineering, Law, Medicine, Science and Social Sciences), comprising 204 males (51.1%) and 195 females (48.9%). There were (44.4%, n = 177) undergraduate students and (55.6%, n = 222) postgraduate students. Nearly half of them (55.4%, n = 221) were enrolled in STEM fields, mainly from the Faculty of Engineering (33.1%) and the Faculty of Science (14.5%), while non-STEM students were primarily majored in Arts (14.8%, n=59), Business(13.3%, n=53) and Education(7.5%, n=30). Additionally, 66.7% participants have reported using GenAI technologies at least once. Specifically, 21.8% reported rarely using it, 29.1% using it sometimes, 9.8% often using it, and 6.0% reported always using it. Table 1 shows the demographics information.

| Characteristic | n | % |
|---|-----|-------|
| Sex | | |
| Male | 204 | 51.1% |
| Female | 195 | 48.9% |
| Academic level | | |
| Undergraduate | 177 | 44.4% |
| Postgraduate | 222 | 55.6% |
| Major | | |
| STEM | 221 | 55.4% |
| Non-STEM | 173 | 43.4% |
| Have you ever used generative AI technologies like ChatGPT? | | |
| Never | 133 | 33.3% |
| Rarely | 87 | 21.8% |
| Sometimes | 116 | 29.1% |
| Often | 39 | 9.8% |
| Always | 24 | 6.0% |

Study at
University in
Hong Kong,
January-April
2023, n=399

Table 1 Demographic Information

| Statement | Mean | SD |
|--|-------------|-----------|
| I understand generative AI technologies like ChatGPT have limitations in their ability to handle complex tasks. | 4.15 | 0.82 |
| I understand generative AI technologies like ChatGPT can generate output that is factually inaccurate. | 4.10 | 0.85 |
| I understand generative AI technologies like ChatGPT can generate output that is out of context or inappropriate. | 4.03 | 0.83 |
| I understand generative AI technologies like ChatGPT can exhibit biases and unfairness in their output. | 3.93 | 0.92 |
| I understand generative AI technologies like ChatGPT may rely too heavily on statistics, which can limit their usefulness in certain contexts. | 3.93 | 0.93 |
| I understand generative AI technologies like ChatGPT have limited emotional intelligence and empathy, which can lead to output that is insensitive or inappropriate. | 3.89 | 0.97 |

Table 2 Knowledge of Generative AI Technologies

Moreover, the correlation analysis results show that students' perceived willingness to use GenAI technologies is positively correlated with both knowledge of GenAI ($r=0.189$; $p<0.001$) and frequency of use ($r=0.326$; $p<0.001$), indicating that students who are more knowledgeable about these technologies and use them more frequently are more likely to use them in the future.

| Statement | Mean | SD |
|---|-------------|-----------|
| I envision integrating generative AI technologies like ChatGPT into my teaching and learning practices in the future. | 3.85 | 1.02 |
| Students must learn how to use generative AI technologies well for their careers. | 4.05 | 0.96 |
| I believe generative AI technologies such as ChatGPT can improve my digital competence. | 3.70 | 0.96 |
| I believe generative AI technologies such as ChatGPT can help me save time. | 4.20 | 0.82 |
| I believe AI technologies such as ChatGPT can provide me with unique insights and perspectives that I may not have thought of myself. | 3.74 | 1.08 |
| I think AI technologies such as ChatGPT can provide me with personalized and immediate feedback and suggestions for my assignments. | 3.61 | 1.06 |
| I think AI technologies such as ChatGPT is a great tool as it is available 24/7. | 4.12 | 0.83 |

| Statement | Mean | SD |
|---|-------------|-----------|
| Using generative AI technologies such as ChatGPT to complete assignments undermines the value of university education. | 3.15 | 1.17 |
| Generative AI technologies such as ChatGPT will limit my opportunities to interact with others and socialize while completing coursework. | 3.06 | 1.20 |
| Generative AI technologies such as ChatGPT will hinder my development of generic or transferable skills such as teamwork, problem-solving, and leadership skills. | 3.10 | 1.23 |
| I can become over-reliant on generative AI technologies | 2.85 | 1.13 |

Table 4 Concerns about Generative AI Technologies

Student Perception of GenAI Technologies

| Benefits related to | Challenges concerning |
|--|-------------------------------|
| 1. Personalized and immediate learning support | 1. Accuracy and transparency |
| 2. Writing and brainstorming support | 2. Privacy and ethical issues |
| 3. Research and analysis support | 3. Holistic competencies |
| 4. Visual and audio multi-media support | 4. Career prospects |
| 5. Administrative support | 5. Human values |

Table 5 Benefits and Challenges on Generative AI Technologies from Student Perception

GenZ and Teachers - AI Generation Gap?

[Submitted on 4 May 2023]

The AI generation gap: Are Gen Z students more interested in adopting generative AI such as ChatGPT in teaching and learning than their Gen X and Millennial Generation teachers?

Cecilia Ka Yuk Chan, Katherine K. W. Lee

This study aimed to explore the experiences, perceptions, knowledge, concerns, and intentions of Gen Z students with Gen X and Gen Y teachers regarding the use of generative AI (GenAI) in higher education. A sample of students and teachers were recruited to investigate the above using a survey consisting of both open and closed questions. The findings showed that Gen Z participants were generally optimistic about the potential benefits of GenAI, including enhanced productivity, efficiency, and personalized learning, and expressed intentions to use GenAI for various educational purposes. Gen X and Gen Y teachers acknowledged the potential benefits of GenAI but expressed heightened concerns about overreliance, ethical and pedagogical implications, emphasizing the need for proper guidelines and policies to ensure responsible use of the technology. The study highlighted the importance of combining technology with traditional teaching methods to provide a more effective learning experience. Implications of the findings include the need to develop evidence-based guidelines and policies for GenAI integration, foster critical thinking and digital literacy skills among students, and promote responsible use of GenAI technologies in higher education.

Source: Chan and Lee (2023)

Thus, the research questions for this study are:

1. Regarding the use of GenAI in higher education, what are the current experiences, perceptions, knowledge, and concerns of Gen Z students and of Gen X and Gen Y teachers?
2. Regarding the use of GenAI in higher education, how do Gen Z students compare to Gen X and Gen Y teachers in terms of their current experiences, perceptions, knowledge, and concerns?
3. What are the current intentions and concerns of Gen Z students and of Gen X and Gen Y teachers, along with any accompanying reasons, towards using GenAI in higher education?

On the other hand, results suggested that teachers may be more skeptical of the capabilities of GenAI, as well as concerned about the risks and dangers it poses to students' learning, growth, and academic achievements. Teachers showed a greater level of caution regarding GenAI outputs, scoring higher in their agreement with the need to fact-check and validate information produced by GenAI technologies ($M_S=4.35$, $SD_S=.81$; $M_T=4.60$, $SD_T=.65$; $t(402)=-3.95$; $p<.001$); they also tended to score higher than students in their agreement with GenAI having the potential of generating factually inaccurate outputs

Finally, teachers further expressed a greater level of concern for the possibility of some students using GenAI technologies to get ahead in their assignments ($M_S=3.58$, $SD_S=1.14$; $M_T=3.83$, $SD_T=1.06$; $t(366)=-2.51$; $p=.013$), and were more likely to believe that students would become over-reliant on GenAI ($M_S=2.87$, $SD_S=1.14$; $M_T=4.12$, $SD_T=.89$; $t(425)=-1.25$; $p<.001$) compared to what students thought about themselves.

“I believe over-reliance on AIs in learning will adversely affect students’ learning as [they] may be deprived of the actual thinking process which is the most important part of learning.”

“It could be a problem for teachers to detect this usage, and it could allow students to get good grades without actually possessing the skills that those grades reflect.”

“I think there needs to be a clear strategy in place ASAP, as many core subjects lend themselves to the use of AI. I think we need to teach the students how to use AI tech well and responsibly.”

Conclusions

GEN AI

SCRATCH AND WIN

H O P E

H Y P E

N O P E

Source: Selman
Design, Heaven
(2024)

6 big questions for Gen AI...

(source: Heaven, MIT Tech Review, 2024)

- Will we ever mitigate the bias problem?
- How will AI change the way we apply copyright?
- How will it change our jobs?
- What misinformation will it make possible?
- Will we come to grips with its costs?
- Will doomerism continue to dominate policy making?

...

Still missing...AI's killer app!



uhonline.hawaii.edu/ai



UNIVERSITY OF HAWAII'I

UH Online

Generative Artificial Intelligence (AI)





How to Use AI Responsibly



Know the Policy

Each instructor will determine if and how ai can be used in their class



Syllabi Icons and Sample Explanations



Citations

Ideas for citing ChatGPT responsibly



Credibility

It's important to fact check the information you



Limitations

It is not always accurate, it can be biased, and it has



Prompts

Screenshot responds best when you give it clear and



Are you considering using AI tools for...



exploration

Let's get started! First, familiarize yourself with Generative AI and University of Hawai'i's (UH) AI Recommendations.

Review the [AI Overview infographic](#).



Have you decided which AI tool or tools you plan to explore?

Yes

No

Check out the [UH ITS Reviewed Instructional Third-Party Online Tools List](#) for a list of reviewed tools.



Read the tool's Terms of Service and Privacy Policies before using the tool.



instruction

Is your desired AI tool(s) for instruction on the [UH ITS Reviewed Instructional Third-Party Online Tools List](#)?



Yes

No

If it's not listed, submit a [Request Form](#). ITS will review, then insert the tool onto the list.



If it's approved or conditionally approved, read the Additional Notes for more information. If it's rejected, do not use.

Ensure ethical use of the AI-based tool.

Review [How to Protect Your Data](#) below!

UH Online Generative AI Resources:

- For Faculty, Staff, and Admin: [UH AI Recommendations](#) page, including [sample syllabus statements/icons](#).
- For Students: [Using AI Responsibly](#).

Updated 1/3/2024

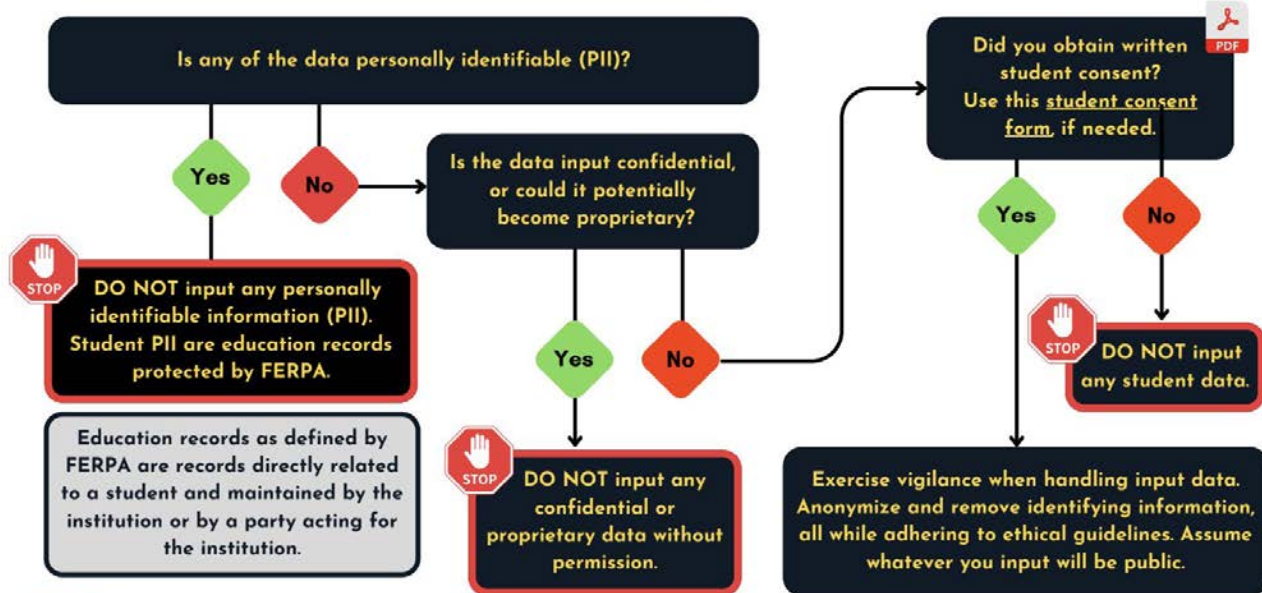




Do you know how to protect your data when using AI-based tools?



data protection



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Here is a cartoon version of the image you provided.