

# AI 201: The good the bad and the scary

The state of AI today and how you could and should use it.

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Create a picture of a sunrise in Hawaii.



Here's the image of a beautiful sunrise over a Hawaiian beach. Let me know if there's anything you'd like to adjust!

# (Review) What is Artificial Intelligence?

AI is not a simulation of human intelligence, but may have similarities.

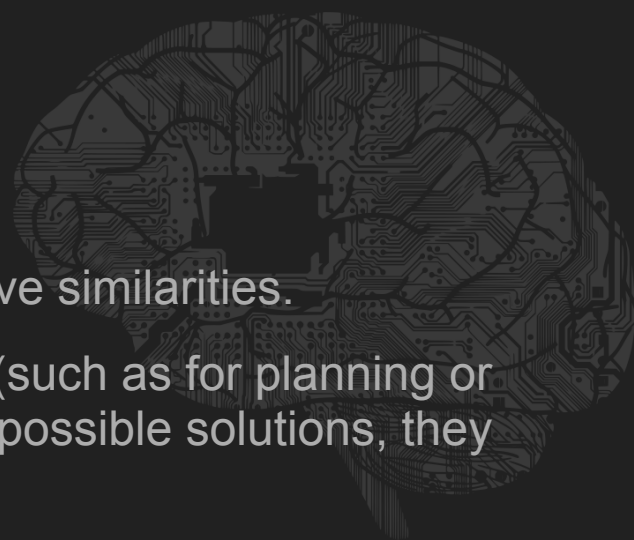
AI systems may use searches to solve many problems (such as for planning or game-playing algorithms). By searching through many possible solutions, they identify the most likely answers.

AI systems are trained via supervised, unsupervised or reinforcement learning.

Text-based generative AI systems are pre-trained on Large Language Models (LLMs) to predict the most likely next “tokens” and recognize patterns. When given an input prompt they construct new output via repeated prediction.

“On an operational level for business use, AI is a set of technologies that are based primarily on machine learning and deep learning, used for data analytics, predictions and forecasting, object categorization, natural language processing, recommendations, intelligent data retrieval, and more.”[1]

[See the AI meta article on Wikipedia here.](#)[2]



# (Review) A Brief History of AI

Earliest “self learning” AI program written in the 1950s to play checkers.[3]

In the 1960s, advances in theory and programming improved AI learning, dialog and scientific reasoning, and AI robotics incorporate vision.

Expert systems (inference engine + knowledge base) used widely in 1980s from the space shuttle to mortgage loans. AI begins to leverage parallel computing.

The 1990s saw self-driving cars, autonomous consumer “pet” robots (AIBO), and Deep Blue beats the reigning world champion in chess.

By the early 2010s, Natural Language (NLP) advances allow Apple, Google and Microsoft to launch apps for answering questions and making recommendations.

## (Review) Who uses AI today?

Everybody!

Consumer apps on phones and via the Web.

From customer service to medical diagnostics.

Robotics, self driving cars, and drones on the border.

Artists, authors, teachers, poets, playwrights and musicians.

Banking, investing, marketing, even farmers and environmentalists!

Businesses are using AI to “streamline processes, optimize costs, prevent human error, assist customers, manage IT systems, and alleviate repetitive tasks...”[4]



# (Review) How can I use AI?

<a href="#"><u>Gemini (formerly Bard)</u></a>	Google's generative AI chatbot.	*(update) Free and paid versions. Versatile, now named Gemini, it is built into Google's online services (Docs, Gmail, etc.).
<a href="#"><u>ChatGPT</u></a>	OpenAI's generative AI chatbot.	Free and paid versions. Versatile: programming, music, business, translate, essays, plays, poetry, etc.
<a href="#"><u>CoPilot</u></a>	Microsoft's generative AI chatbot.	Versatile: poetry, cite sources, music, translate, separate Image Creator, integrations across products (e.g., Visual Studio for programming)
<a href="#"><u>Image Creator</u></a>	Microsoft's generative image chatbot	Uses DALL-E 3 from OpenAI. Limited quality, lacks accuracy (may not conform to prompts)
<a href="#"><u>Stable Diffusion</u></a>	Stability AI's generative image chatbot	A deep learning text to image model with open source code. Various tools and platforms and pricing.

## (Review) What are the challenges?

AI systems can be biased - if the data or the algorithms are biased, so is output. What if used in medical diagnosis, or in law enforcement or military operations?

AI is vulnerable to attack. Malicious actors can either poison the data (the learning material) or alter the inputs (the prompts) to achieve their goals. These attacks take advantage of algorithm weakness (versus programming issues).

AI systems can “hallucinate”, creating output that makes little sense. And large, complex AI systems can be “black box” - we don’t actually know how they work!

With large data sets come issues of privacy, accuracy, surveillance, and copyright.

Misinformation and reputational damage via “deepfake” images and video.

# Current state - Medical Diagnostics

Significant advancements in tumor diagnosis and demarcation

Faster results, better tumor foci identification (for radiation), tumor response monitoring

A [study released in October](#) found, for more general diagnostic aid use:

“...the availability of an LLM to physicians as a diagnostic aid did not significantly improve clinical reasoning compared with conventional resources. **The LLM alone demonstrated higher performance than both physician groups,** indicating the need for technology and workforce development to realize the potential of physician-artificial intelligence collaboration in clinical practice.”



# Current state - AI in Education

In Oct, U.S. Edu Dpt released [a 74-page toolkit](#)

Designed to help K-12 leaders plan AI (big pic)


Heavy on strategic, not a “how to” for teachers

Meanwhile, [vendors offer](#) many classroom products

Why Google | Google Workspace for Education | Chromebooks | Get started | For educators

- More supportive with practice sets
- More accessible with Chromebooks
- More adaptive with Read Along in Classroom

The Read Along integration with Classroom provides real-time feedback on pronunciation to help build reading skills at a personal pace.



## Module 8: Building AI Literacy for Educators

The responsible use of AI requires building a strong foundation and knowledge of AI literacy. This includes the knowledge, skills, and attitudes needed to engage with AI safely and effectively.

AI literacy for educators was a top recommendation from educators in the Department's listening sessions and is also a priority for leaders across Federal, state, and local levels.

Developing AI literacy is essential both for students and for educators. This toolkit recommends prioritizing AI literacy and capacity first for educators, then empowering them to do the same

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for students and others in their school communities. Developing educator AI literacy is important because:

- With greater knowledge about what AI is, how it works, and which uses of AI are recommended in classrooms, educators can make **informed decisions** about how to integrate AI in their classrooms.
- With greater awareness of how issues of ethics and risks arise when using AI, educators can **advocate for safety** among their students and broader communities and undertake their role as humans-in-the-loop as AI becomes more prevalent in their students' experiences.
- With a forum to develop understanding of how AI may impact the workforce, and the world students will enter, educators can better **guide students toward successful futures in a world where change is occurring at a fast pace.**

### Defining AI Literacy

AI literacy includes the knowledge, skills, and attitudes needed to engage with AI safely. (Mills et al., 2024). This skillset is about understanding AI's strengths, limits, and impacts to make informed decisions about its integration and to prepare learners for the AI-driven future (Kulesa et al., 2024).

As an AI literacy initiative progresses, all educators should be able to **actively recognize** AI in multiple forms, make sense of their own **interactions with AI**, make informed decisions based on an **understanding of how AI is built** and its limitations, and view AI through a lens that includes **ethics and social impact**.

Key activities to address in AI literacy programs include **Understanding, Evaluating, and Integrating into the Classroom**. Each activity is discussed in a section below. Educational leaders are expected to make their own decisions, based on their specific context, about how to best cover the breadth of content over time. Activity 1: Understanding AI

The above definition of AI literacy calls for comprehending a wide variety of topics. Based on our review of recommendations in the field (Druga et al., 2021; MIT STEP Lab, 2024; World Economic Forum, 2024) as well as the content of the [National AI Literacy Day](#), the Department recommends that AI literacy initiatives cover the following topics. These topics are best delivered over time to give educators time to develop understanding and may be delivered in any order.

- **Defining AI.** In its AI Report, the Department suggested conceptualizing modern AI as “automations based on associations” and critically discussed other definitions that rely on analogies to how people think—because machines generate outputs in different ways

# Current state - AI in Business

Various sources report the majority of companies are testing or using AI

Approximately one quarter of enterprise organizations have integrated AI into some aspect of their business (i.e., customer support, research, fraud detection, predicting customer turnover, market segment analysis, normalizing supplier's invoices, etc.)

Use is exploding in HR

Shortlisting resumes (AI is better than basic keyword searches) and predicting employee turnover

Generative AI is used in many products offering “sales campaign” support, website creation, script and book writing, text to video production, even personal financial advice !

What's scary about [this marketing blurb?](#)

“...helps build safe AI copilots that offer personalized financial advice tailored to individual goals.”

# Current state - open-source AI

The open-source AI/ML/LLM ecosystem is booming

“Open source AI democratizes access to cutting-edge technologies and accelerates the development of impactful applications for a range of enterprise use cases.” <https://www.digitalocean.com/resources/articles/open-source-ai-platforms>

Ha! It also empowers the script kiddies and evil hackers :-/

Example: multiple models, transformers, diffusers, etc. avail at [huggingface](#)

Nvidia just [released new open-source AI model](#) that compares well against other leading models (OpenAI, Google, and Anthropic).

To run AI, you need compute power and storage.

Who is “responsible” when hosting “malicious” AI?

# Using AI - ChatGPT 4o Generative

Add a Hawaiian canoe

Create a picture of a sunrise in Hawaii.



Here's the image of a beautiful sunrise over a Hawaiian beach. Let me know if there's anything you'd like to adjust!



Here's the image with the added Hawaiian outrigger canoe near the shore. Let me know if you'd like any further adjustments!

# Using AI - ChatGPT 4o Generative

Q Search GPTs

Top Picks Writing Productivity Research & Ar

## Writing

Enhance your writing with tools for creation, editi

Download the latest iOS or Android app to try advanced voice mode

Get more natural, real-time conversations with advanced voice. Senses and responds to humor, sarcasm, interruptions, and more.



ChatGPT can make mistakes. Check important info.

1



### Write For Me

Write tailored, engaging content with a focus on quality, relevance and precise word count.

By puzzle.today

2



### AI Humanizer

#1 AI humanizer in the world 🏆: Get human-like content in seconds. This GPT humanizes AI-generated text with FREE...

By mmchdigital.solutions

3



### Humanize AI

Top 1 AI humanizer to help you get human-like content. Humanize your AI-generated content with Free credits available.

By gptinf.com

4



### Copywriter GPT - Marketing, Branding, Ads

Your innovative partner for viral ad copywriting! Dive into viral marketing strategies fine-tuned to your needs! Now...

By adrianlab.com

5



### AI Humanizer Pro

Best AI humanizer to help you get 100% human score. Humanize your AI-generated content maintaining content...

By bypassgpt.ai

6



### Generator Text to Video Maker

An innovative Video Maker Bot! Create and edit dynamic videos with voiceovers using our AI-powered tool. Currently,

By Lee

See more

Humanizer??!!

Hmmm, will it help me get around plagiarism check?

# Using AI - ChatGPT 4o Generative

Write an introductory paragraph for a presentation on the current state of AI.

Success??

Good afternoon everyone, and thank you for joining me today. Artificial intelligence, or AI, is rapidly transforming every aspect of our lives—from the way we work and communicate to how we make decisions and understand the world around us. In recent years, AI has made significant leaps, driven by advancements in machine learning, natural language processing, and deep learning technologies. Today, we'll explore the current state of AI, focusing on recent developments, ethical implications, and how these technologies are shaping industries and society at large. As we dive into this complex and evolving field, we'll examine both the remarkable potential and the challenges that lie ahead in harnessing AI responsibly and effectively.

# Using AI - ChatGPT 4o Generative

Write an introductory paragraph to a presentation on AI, but use humor and modern British slang.

Success??

Alright, folks, let's talk about AI – that's Artificial Intelligence, not "Absolutely Inept," though some days it feels like it! Imagine a world where your fridge knows you're low on milk before you do, where your car can navigate the M25 without losing the will to live, and where, yes, your toaster might actually *understand* your preference for "barely-browned." AI is like the world's flashiest Swiss Army knife, only it doesn't just open cans; it opens up possibilities that are madder than a box of frogs. So buckle up, get your cuppa ready, and let's dive into the weird, wonderful, and occasionally baffling world of AI.

# Using AI - What's in your wallet (on your phone)?

“Users can now tap into Apple Intelligence to refine their writing; summarize notifications, mail, and messages; experience a more natural and capable Siri; remove distracting objects from images with Clean Up; and more” [[apple](#)]

Have you ever dug through you phone settings to find all the apps that allow Siri, or now, AI integration?

Can you turn it off? Get familiar with your phone, your bank, your email...

Should you use AI?

Well, you already are if you interact with the world.

So, be smart, and have fun!



# Learning Resources

Google AI/ML: [Data Scientist / Machine Learning Engineer learning path](#). Note the [Professional Machine Learning Engineer](#) exam does not cover generative AI, as the tools used are evolving quickly. For generative AI, refer to the [Introduction to Generative AI Learning Path](#) (all audiences) or the [Generative AI for Developers Learning Path](#) (technical audience).

Microsoft (Azure): [AI community hub - courses and certificates, forums, events](#)

Amazon (AWS): [Machine Learning courses](#) (free and paid)

Harvard: [CS50's Introduction to Artificial Intelligence with Python](#) (free, or pay for cert)

freeCodeCamp: (example) [Azure AI Fundamentals cert prep](#), (example) [Machine learning with Python cert series](#)

Udemy: (example) [Artificial Intelligence A-Z 2023](#) (learn fundamentals and build with Python)

Coursera: Professional certificate tracks approximately \$40/month (e.g., IBM series)

# References:

1. <https://cloud.google.com/learn/what-is-artificial-intelligence>
2. [https://en.wikipedia.org/wiki/Artificial\\_intelligence](https://en.wikipedia.org/wiki/Artificial_intelligence)
3. [https://en.wikipedia.org/wiki/Timeline\\_of\\_artificial\\_intelligence](https://en.wikipedia.org/wiki/Timeline_of_artificial_intelligence)
4. <https://www.cio.com/article/652775/12-most-popular-ai-use-cases-in-the-enterprise-today.html>

More Information at [openmorse.org/ai](https://openmorse.org/ai)

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