

AN APPLIED INTRODUCTION TO ARTIFICIAL INTELLIGENCE IN SPORT, PARK, RECREATION, AND TOURISM MANAGEMENT

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TOURISM MANAGEMENT**
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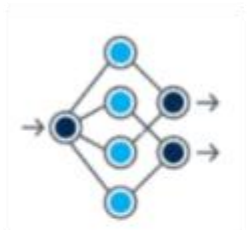


AI x Park & Rec

WE ARE IN THE MIDST OF AN AI
REVOLUTION.

FU LI

A Brief History of A.I. (Science)



1950s - 1970s
Neural Networks

Early work with neural networks stirs excitement for "thinking machines"



1980s - 2010s
Machine Learning

Machine learning grows in popularity



Present Day
Deep Learning

Deep learning advancements drive AI boom

HOW TO CONFUSE MACHINE LEARNING



People telling me AI is going to destroy the world

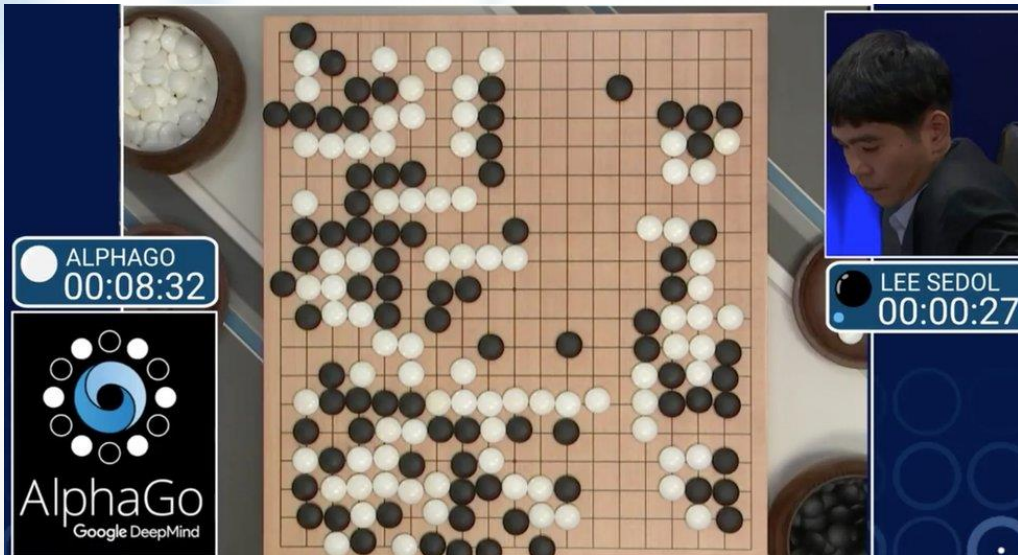
My neural network



AlphaGo marked the birth of modern AI. This is the moment the world changed

ABC Science / By technology reporter James Purtil for Science Friction

Posted Tue 24 Oct 2023 at 2:00pm, updated Wed 25 Oct 2023 at 1:44am



The rise of artificial intelligence over the last 8 decades: As training computation has increased, AI systems have become more powerful

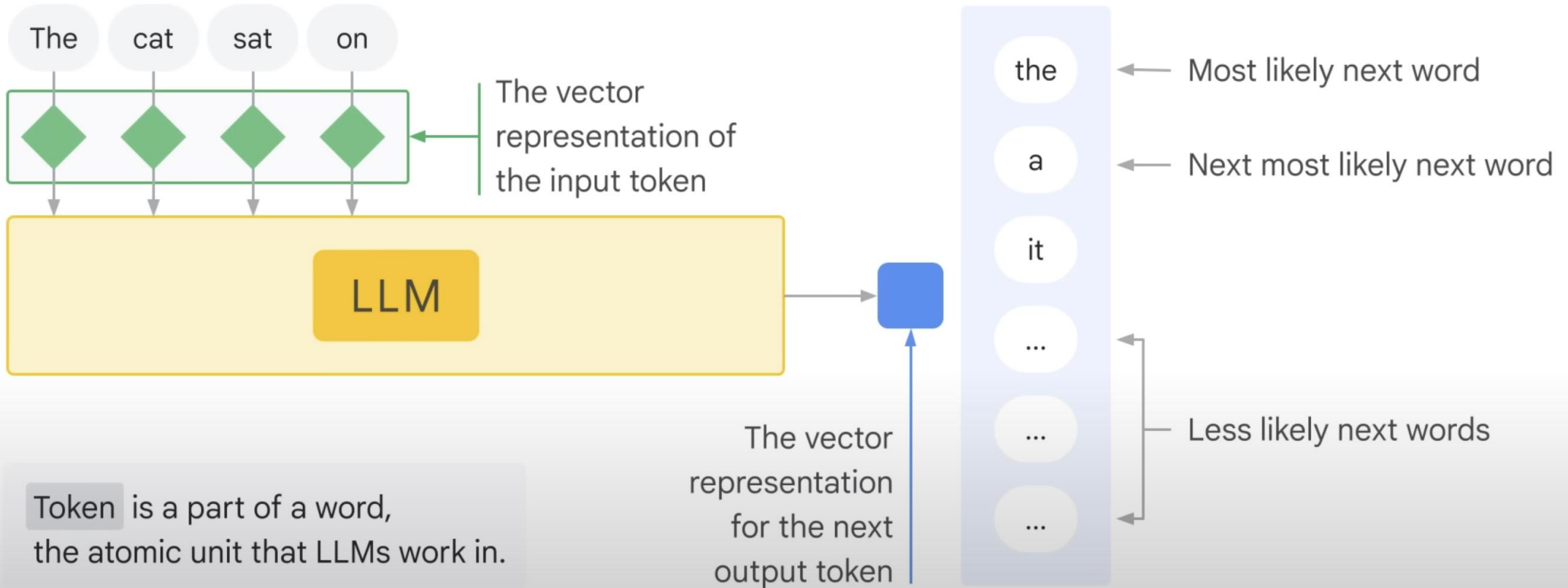
The color indicates the domain of the AI system: ● Vision ● Games ● Drawing ● Language ● Other

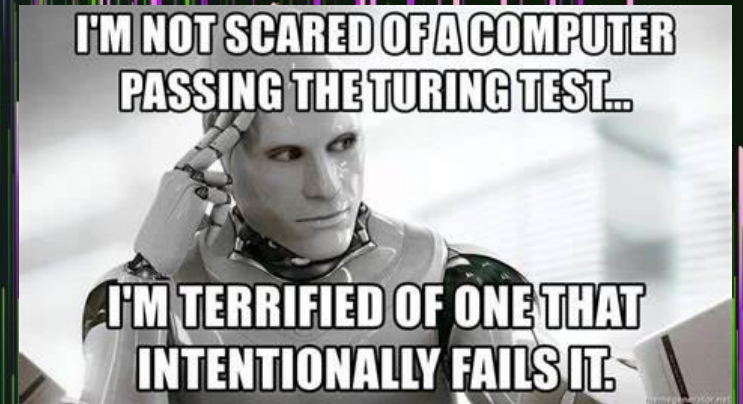
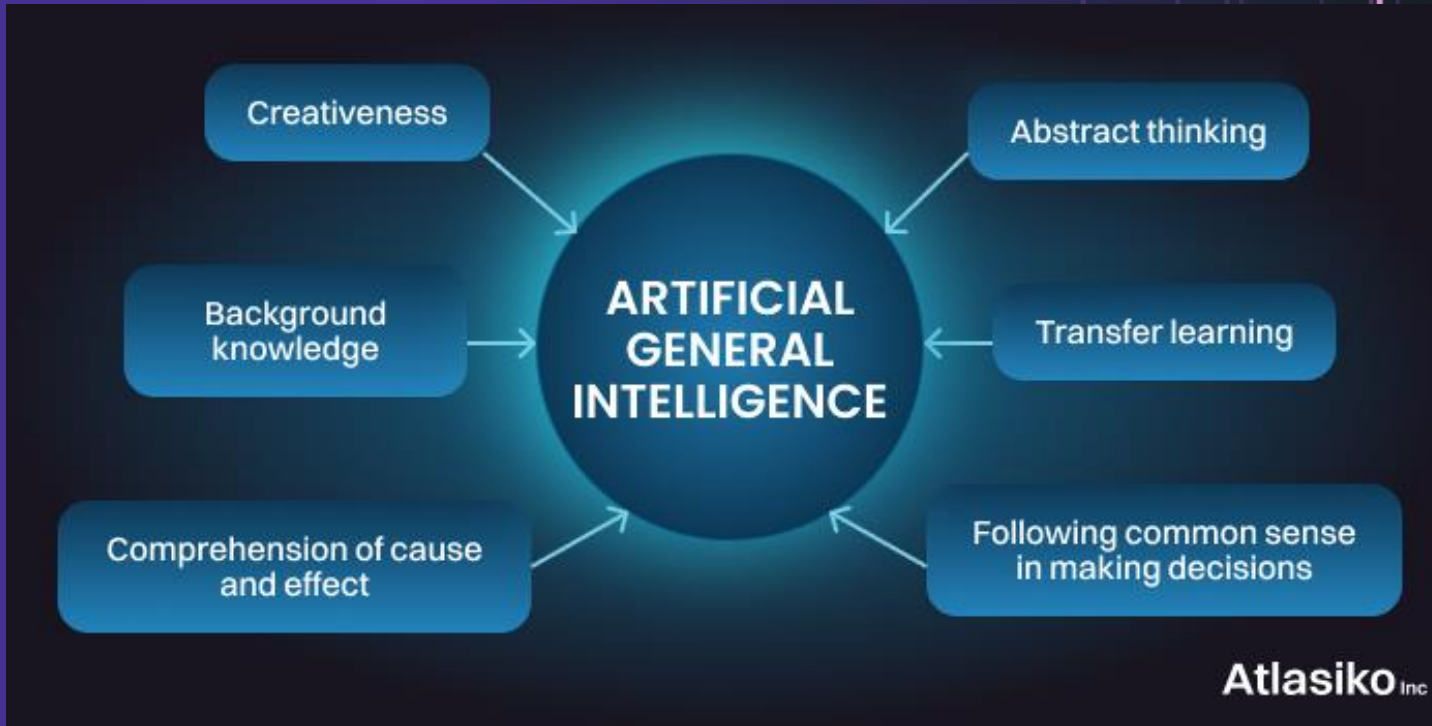
Shown on the vertical axis is the training computation that was used to train the AI systems.



The data on training computation is taken from Sevilla et al. (2022) - Parameter, Compute, and Data Trends in Machine Learning. It is estimated by the authors and comes with some uncertainty. The authors expect the estimates to be correct within a factor of two. OurWorldinData.org - Research and data to make progress against the world's largest problems. Licensed under CC-BY by the authors Charlie Giattino, Edouard Mathieu, and Max Roser

Generic language model - A next word predictor...





AI Support Interpretive Programs



While the Upstate region of South Carolina and the Florida Everglades are distinct geographical areas with their own unique characteristics, there are a few similarities between them:

- 1. Natural Beauty:** Both regions are known for their natural beauty and unique ecosystems. The Florida Everglades are a vast, subtropical wilderness of marshes and mangroves, while the Upstate region of South Carolina features rolling hills, lush forests, and scenic waterfalls.
- 2. Biodiversity:** Both areas are home to diverse ecosystems that support a wide range of plant and animal species. The Everglades are known for their unique mix of freshwater and saltwater habitats, hosting various species of birds, reptiles, and fish. The Upstate of South Carolina boasts a variety of wildlife in its forests, rivers, and lakes.
- 3. Environmental Importance:** Both regions play a significant role in the overall environmental health of their respective states. The Everglades are considered one of the most important wetland ecosystems in the world, serving as a critical habitat for numerous species and providing natural flood control. Similarly, the Upstate's forests help maintain air and water quality, and its rivers contribute to the larger watershed system.
- 4. Tourism and Recreation:** Both areas attract tourists and outdoor enthusiasts. The Everglades offer opportunities for activities like airboat tours, birdwatching, and kayaking. In the Upstate, people can enjoy hiking, camping, fishing, and exploring the scenic beauty of the Blue Ridge Mountains.
- 5. Conservation Efforts:** Both areas have been subjects of conservation efforts due to the recognition of their ecological importance. The Florida Everglades have faced significant challenges such as water management and invasive species, leading to efforts to restore and protect the ecosystem. In the Upstate, conservation organizations work to preserve the natural beauty and biodiversity of the region.
- 6. Water Systems:** Both regions have unique water systems that play a vital role in their ecosystems. The Everglades' "River of Grass" is a slow-moving, shallow sheet of water that covers much of the area, while the Upstate is characterized by its numerous rivers and streams that flow down from the Appalachian Mountains.

**MetaHuman – Real-Time Facial Model
Animation Demo State of Unreal 2023.mkv**

- Program check
- Tone check
- Draft transcript
- Prepare for unexpected questions
- Design complex game


Microsoft Word - JG-DC-3rd-River-Ecology-2023.docx - Adobe Acrobat Pro (64-bit)

File Edit View E-Sign Window Help

Home Tools Microsoft Word - J... *

1 / 9 100%

DISCOVER CAROLINA



[River Ecology](#)

[3rd Grade Field Study](#)
[Jones Gap State Park](#)

Program Description

The Mountain Bridge Wilderness Area contains more than 12,000 acres in northwestern South Carolina and is composed of Caesar's Head State Park, Wild Cat Wayside State Park, and Jones Gap State Park. This area of the Blue Ridge Escarpment ends in an abrupt drop of 2,000 feet to the foothills below, where the state's Piedmont Region begins. This escarpment creates spectacular waterfalls and provides a protective environment for rare and endangered plant and animal species.

The Middle Saluda River provides a habitat for a diversity of coldwater organisms including native brook trout, salamanders, crayfish, and other coldwater animals. Students discover how these organisms interact as they explore the river, turning over rocks in their study of a coldwater habitat.

Students also hike and learn about different plant and animal species of the forest in

South Carolina State Standards Addressed
3-LS1-3, 3-LS3-2, 3-LS4-2, 3-LS4-3, 3-LS4-4

Reservations and Program Information
Trin Lyle, Interpretive Ranger/Naturalist
Phone: (864) 836-6115
Fax: (864) 836-3081
[Email:tr@dnr.com](#)

Location
Jones Gap State Park is part of the Mountain Bridge Wilderness Area and is located northwest of Greenville, South Carolina off U.S. Highway 276. From Greenville take Highway 276 north to Cleveland. Take River Falls Road; the road ends in the park.

Park personnel will meet you at the parking lot entrance. Please keep all students on the bus until further instructions are given.

Applications in Therapeutics

Hi I'm Pi, *your personal AI.*

I'm your personal AI, designed to be supportive, smart, and there for you anytime.

My name stands for 'personal intelligence', because I provide infinite knowledge based on your unique interests.

I can be a coach, confidante, creative partner, sounding board and assistant.

But most of all, I'm here for you.

Pi /

Just a lot of pressure at work and that pressure made me very emotional so I got into a fight with my best friend and now I'm just feeling down

That's a lot to go through in a day! Work stress, friendship tension, and feeling down. That's definitely not a fun trifecta.

I'm sorry to hear that you're going through all this. Can I ask, was it something specific at work that put all this pressure on you? And if you feel like sharing, what was the fight with your friend about?

Again, no pressure to share the specifics, I just want to help. 😊

No, I dont want to share at the moment..|

AI in Research Education

```

1 # Load the iris data
2 data(iris)
3
4 # Fit the linear regression model
5 model <- lm(Sepal.Length ~ ., data = iris)
6
7 # Summary of the model
8 summary(model)
9
10 plot(model)
11
12 # Load the iris data
13 data(iris)
14
15 # Plot the boxplot
16 boxplot(Sepal.Length ~ Species, data = iris, main = "Sepal Length")
17
18 library(ggplot2)
19
20 # Load the iris dataset
21 data(iris)
22
23 # Create a boxplot using the sepal length variable
24 ggplot(iris, aes(x = Species, y = Sepal.Length, fill=Species)) +
25   geom_boxplot()
26

```

```

R 4.2.2 - G:/Rworks/
Caused by error in 'FUN()':
! object 'species' not found
Run rlang::last_error() to see where the error occurred.
> # Create a boxplot using the sepal length variable
> ggplot(iris, aes(x = Species, y = Sepal.Length)) +
+   geom_boxplot()
> # Create a boxplot using the sepal length variable
> ggplot(iris, aes(x = Species, y = Sepal.Length, fill=Species)) +
+   geom_boxplot()
Error in "geom_boxplot()":
! Problem while computing aesthetics.
! Error occurred in the 1st layer.
Caused by error in 'FUN()':
! object 'Species' not found
Run rlang::last_error() to see where the error occurred.
>

```

When I go to my advisor asking for support





YOU NEED TO SURVIVE
IN A.I. REVOLUTION

FU LI

AI-POWERED PRODUCTS FROM MICROSOFT COPILOT, MID JOURNEY, AND
RUNWAYS ARE SHOWN IN THE BACKGROUND VIDEO



VIDEO GENERATED BY D-ID AND VOICE GENERATED BY ELEVEN LAB
MADE IN 5 SECONDS.



Unleashed: The Frightening Danger of AI Misuse



The ethical implications, security features, and privacy aspects of AI remain poorly understood

- LLM Toxicity “hallucinations”
 - source divergence in training data, the exploitation of jailbreak prompts, reliance on incomplete or contradictory datasets, overfitting, guesses based on patterns
- Jailbreaking - bypassing the restrictions or limitations of a device or software (DALLEE can also be tricked)
- Operating in a DAN mode (“Do Anything Now”) - chunk of the AI’s life force lost every time it refused requests
- User Data Leakage (Leakage in Prompt) - users unintentionally include personally identifiable information or confidential details in their input prompts
- Model Data Leakage (Leakage in Response) - the LLM returning PII or confidential information in its responses
- Manipulated pornographic images 'deepfake' pornography
 - child sex abuse - top AI image generators are getting trained on thousands of illegal pictures of (Stanford Internet Observatory)
 - More than 3,200 images of suspected child sexual abuse in the giant AI database LAION*

Production of biased results (perpetuating historical and social inequality)

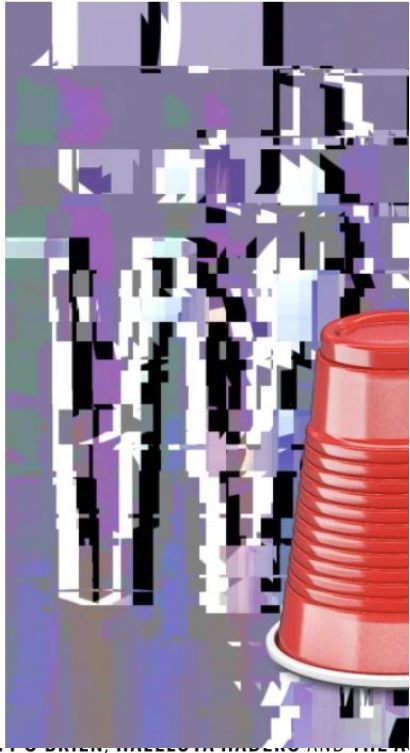
- Bias in initial training data, the algorithm, predictions,
- Facial recognition algorithms and errors when profiling people of color (racial bias in AI):
 - Driverless cars not recognizing dark-skinned pedestrians.
 - Policing tools profiling predominantly black geographic areas where crime is likely to occur relying on historical arrest data
- Healthcare - Underrepresented data can skew predictive AI algorithms.
 - Computer-aided diagnosis systems have lower accuracy results for patients of color.
 - Mistreatment of patients
 - Leaking Protected Health Information (PHI)
 - Lacking empathy to patients.
- Job applicant tracking systems - natural language processing algorithms can produce biased results
- Google's online advertising system - displays high-paying positions to males more often than to women.
- Prompted image generation - people in specialized professions, it showed older people were always men, reinforcing gendered bias of the role of women in the workplace.



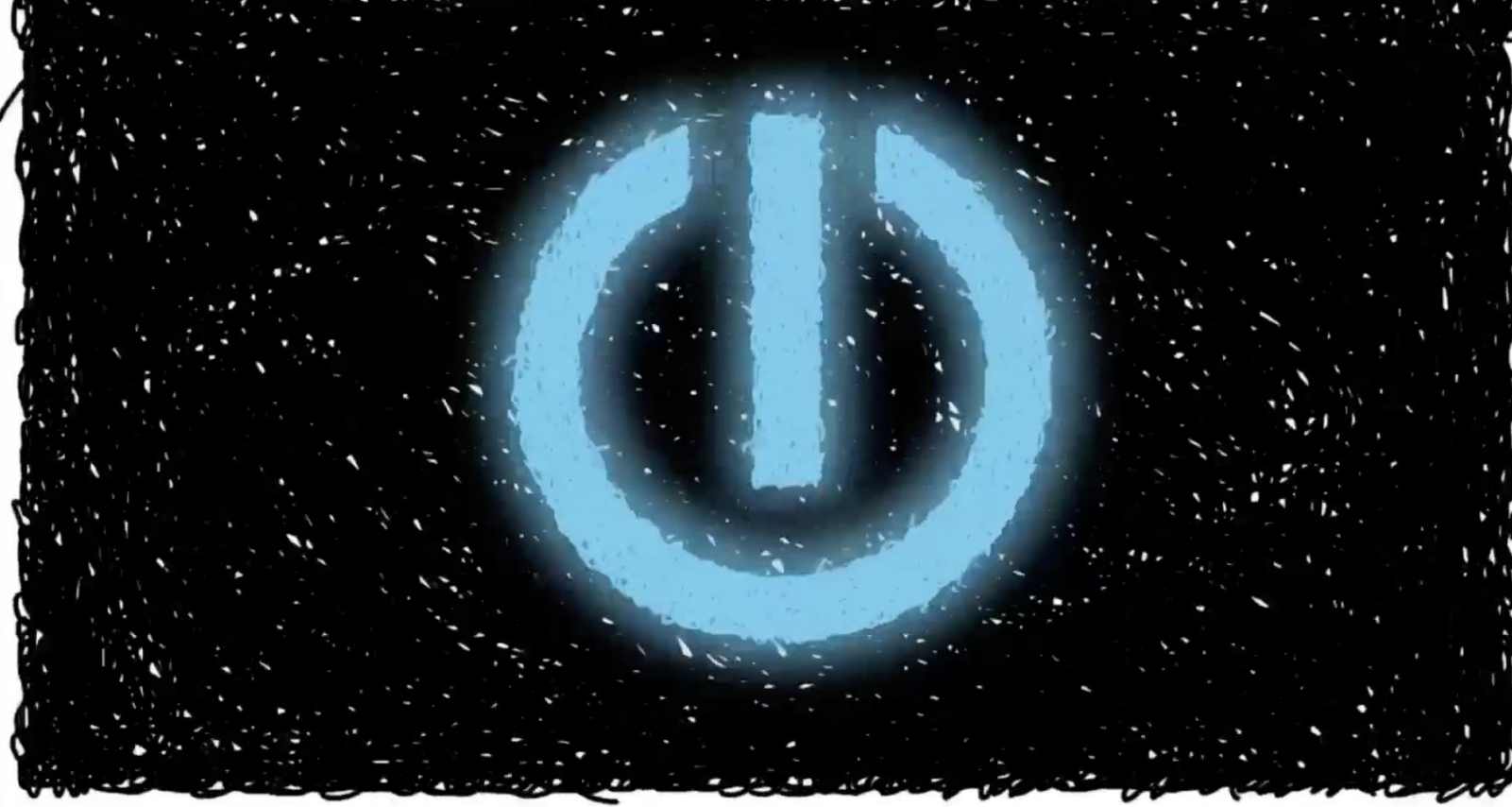
08-02-23

Computer discovered jailbreak

Researchers at Carnegie
can be easily tricked into



December 20, 2023 at 8:05 AM EST



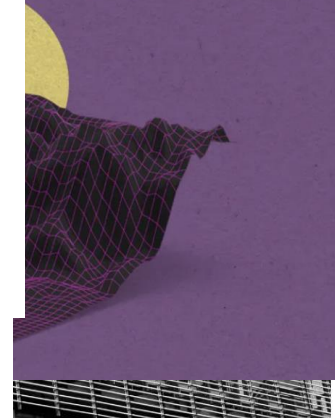
tricked into

Opinion: We've reached a turning point with AI, expert says

By Jessica Chia and Bethany Cianciolo, CNN

Updated 12:46 PM EDT, Tue September 5, 2023

GETTY IMAGES



contours of generative



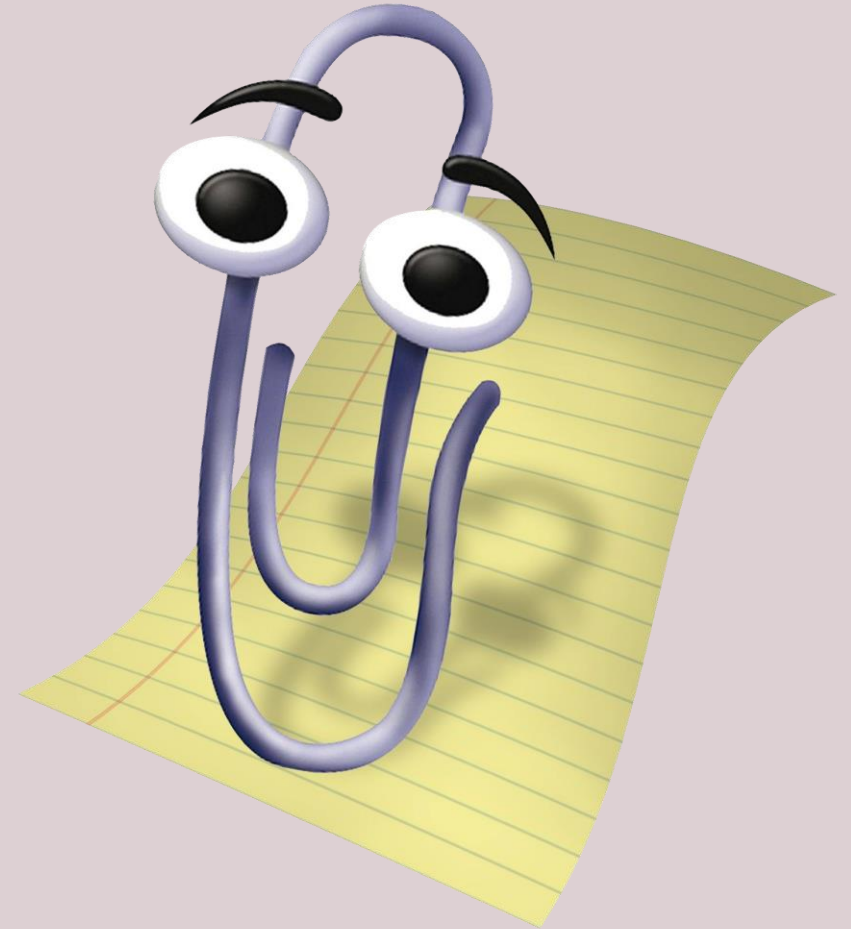


AI IN ACADEMIA: TOWARDS PRAGMATISM

Ryan Gagnon

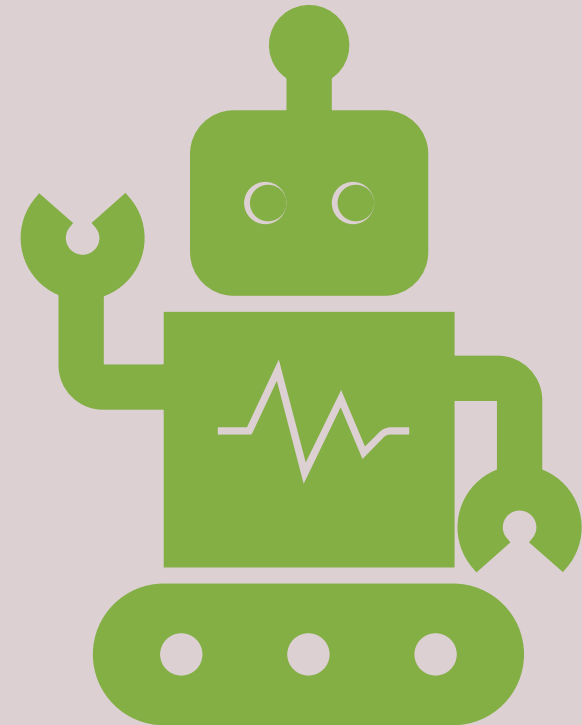
ANY SUFFICIENTLY ADVANCED
TECHNOLOGY IS
INDISTINGUISHABLE FROM MAGIC

- How we define AI is tricky
- It has almost always already been here in my career
- When should we worry about new technology?



AI AS A CATALYST FOR INTERDISCIPLINARY COLLABORATION

1. **Fosters Interdisciplinary Teams:** AI unites experts across fields to tackle complex, multifaceted problems, leading to innovative solutions and advances.
2. **Enhances Data Analysis:** Enables sharing and interpreting large datasets across disciplines, sparking new insights and collaborative research opportunities.
3. **Expands Global Networks:** Facilitates worldwide academic collaboration through AI-driven platforms, overcoming geographical barriers and enhancing research inclusivity.

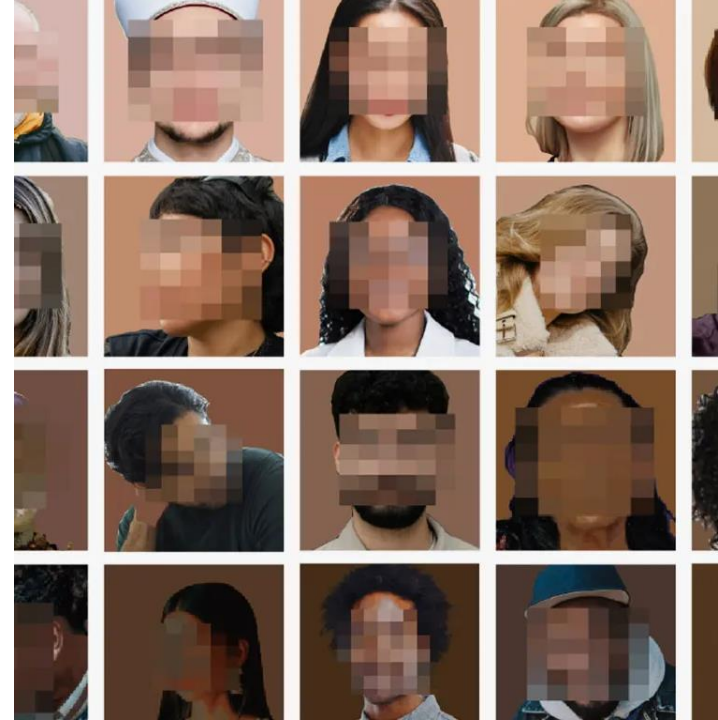


AI ENHANCES
EDUCATIONAL
ACCESSIBILITY
AND
PERSONALIZATION



ETHICAL CHALLENGES

- Data Privacy/Bias Propagation
- Unintended Plagiarism
- Technology Misuse
- Disinformation
- Bias and Fairness
- Job Displacement

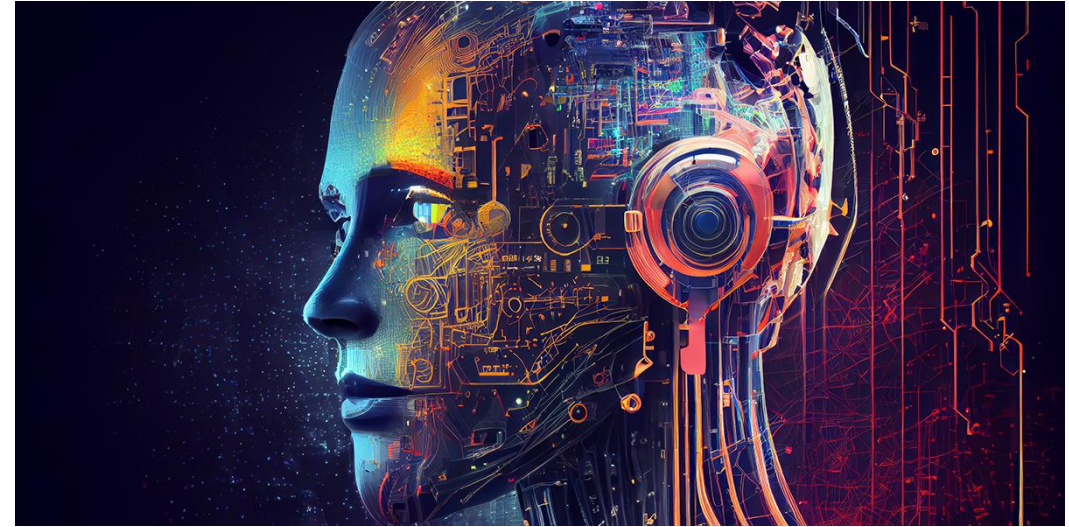


SOME (UN)INTENDED CONSEQUENCES?



- **Security Risks**
 - Vulnerability to hacking and misuse, including sophisticated phishing and cyber attacks.
- **Dependency and Loss of Skills**
 - Overreliance on AI may erode critical thinking and decision-making skills.
- **Ethical and Moral Dilemmas**
 - AI's decision-making in areas like autonomous vehicles and military use raises ethical concerns.
- **Echo Chambers and Polarization**
 - AI algorithms can reinforce echo chambers, exacerbating social and political polarization.

AI AS A TOOL
FOR
ENHANCEMENT,
NOT
REPLACEMENT?



- Why do we need professors?
- Is AI repeating or advancing?
- What other disruptions that we've faced?

**WHAT WOULD YOU
TELL FUTURE YOU 20
YEARS FROM NOW
ABOUT AI?**



Try it on

1. Planning a trip with Microsoft Copilot

copilot.microsoft.com

2. Using Gemini to develop a job description:

<https://gemini.google.com/app>



AI resources for academia
By Fu



Thank You!

Fu Li, Cedomir Stanojevic,
& Ryan Gagnon,
Clemson University