Webinar Wednesday:
May 31, 2023

Artificial Intelligence in Community Action:
Harnessing the Power and Navigating the Challenges of AI

Presented by: Roger McCann
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Hosted by: National Community Action Partnership
www.communityactionpartnership.com

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Project Director, Organizational Capacity Building
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Helping People. Changing Lives. community Action PARTNERSHIP
AMERICA'S POVERTY FIGHTING NETWORK

The Promise of Community Action

Community Action changes people's lives,
embodies the spirit of hope,
improves communities, and
makes America a better place to live.

We care about the entire community, and
we are dedicated to helping people
help themselves and each other.

Helping People. Changing Lives.
community Action
PARTNERSHIP
AMERICA'S POVERTY FIGHTING NETWORK

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"Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war"

-Center for AI Safety, May 30, 2023

OUR STORY STARTS 40,000 YEARS AGO...

CAVE DRAWINGS & PETROGLYPHS C. 40,000 - 10,000 BC

Among the earliest known forms of human communication, cave drawings and petroglyphs (rock carvings) were used to represent objects, animals, and events.



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CUNEIFORM
C. 3,200 BC

Developed by the Sumerians in Mesopotamia, this is often considered the first form of written language, using a series of wedge-shaped marks made in clay tablets.



HIEROGLYPHICS C. 3,200 BC

This pictorial script was used by the ancient Egyptians for religious, administrative, and literary purposes.



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PHOENICIAN ALPHABET C. 1,200 BC

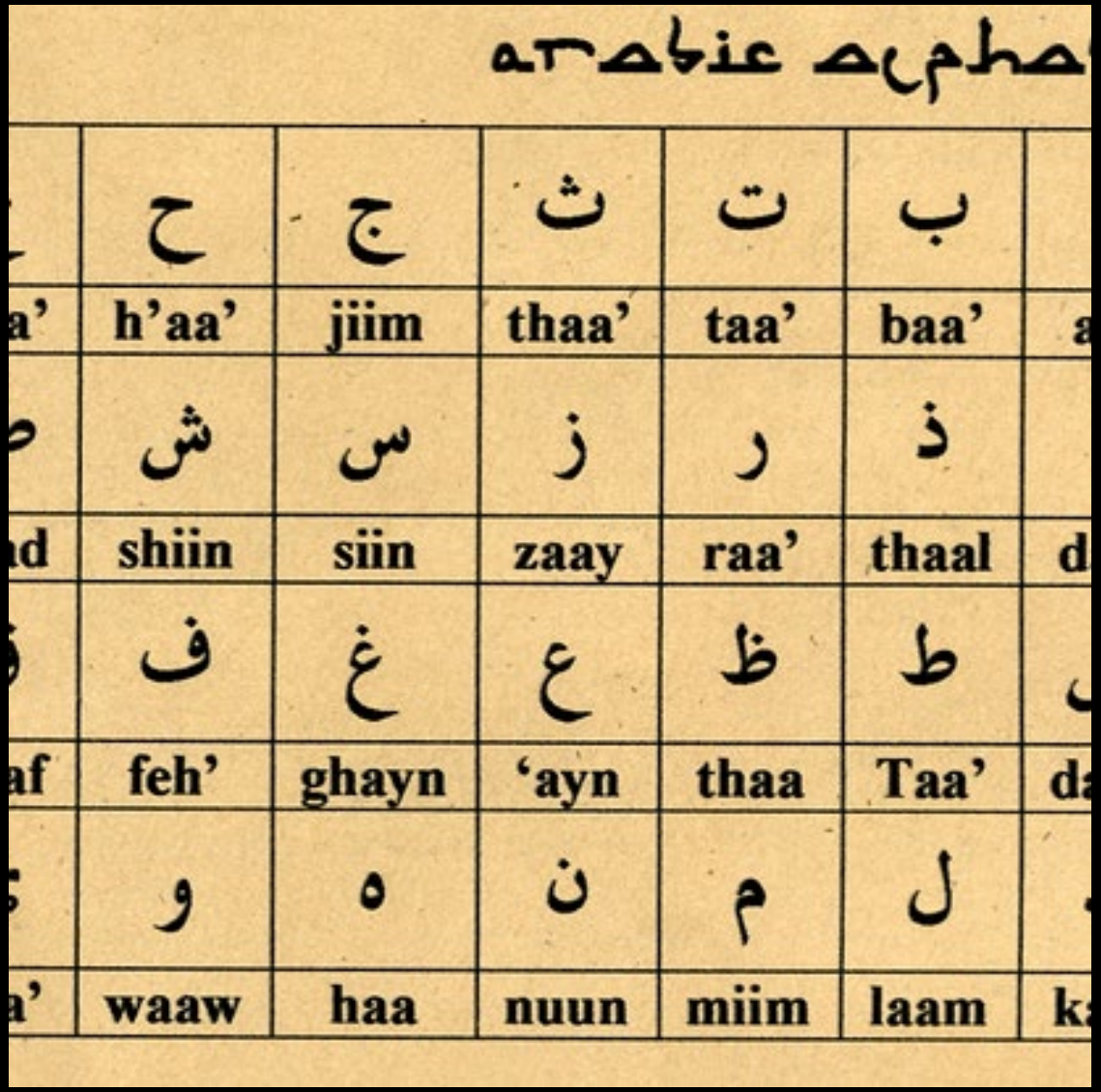
The Phoenicians developed one of the first alphabets, with characters representing individual phonetic sounds. This greatly simplified the process of writing and reading.



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CLASSICAL LANGUAGE C. 1,000 BC - 500 AD

The development of languages such as Greek, Latin, Sanskrit, Hebrew, and Arabic, which have significantly influenced many modern languages.



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PAPER
C. 100 BC

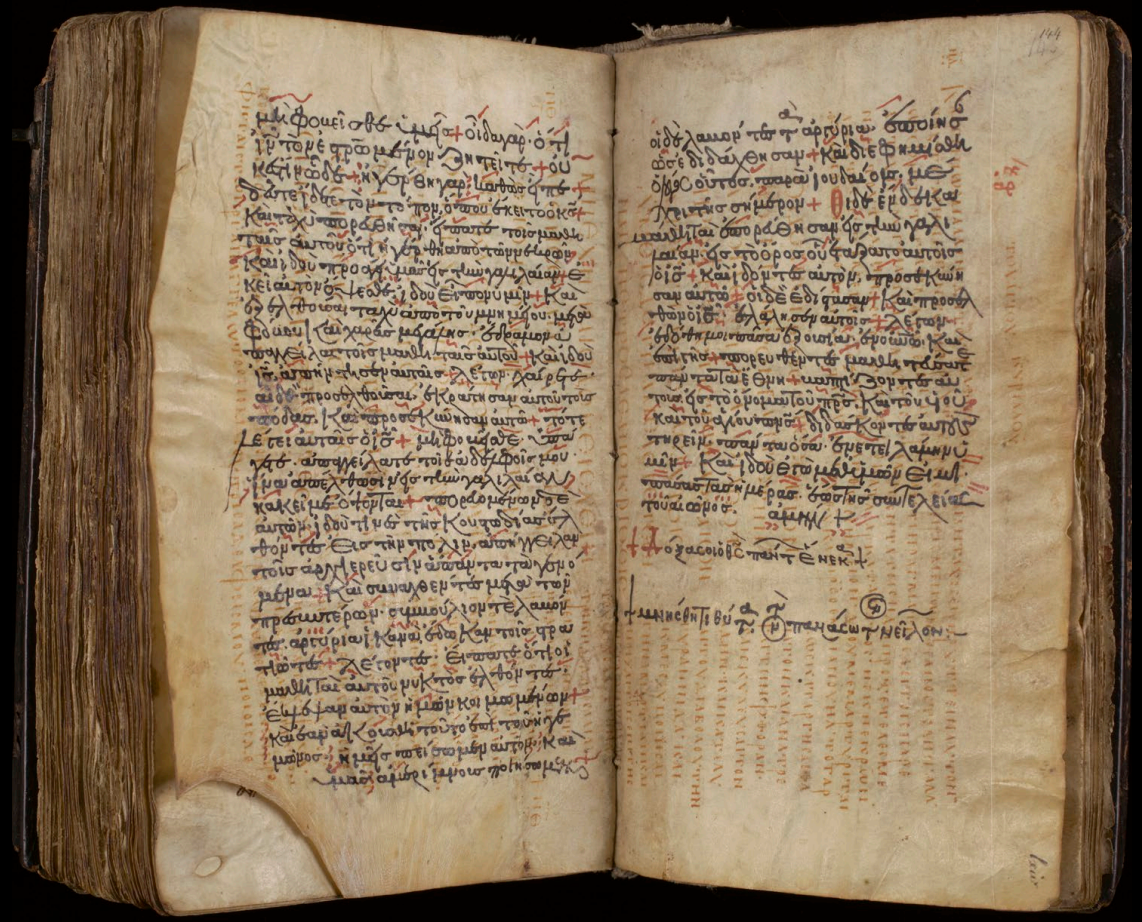
The invention of paper in China revolutionized the preservation and dissemination of language and knowledge.



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CODEX
C. 1ST
CENTURY AD

The codex, a bound book with pages, replaced the scroll as the primary form of book in the Roman Empire, making texts easier to access and reference.



MOVABLE TYPE C. 1,040 AD

The first known movable type system was created in China by Bi Sheng. This allowed individual characters to be arranged and rearranged for printing.



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PRINTING PRESS C. 1440 AD

Invented by Johannes Gutenberg in Europe, the printing press allowed for the mass production of books, significantly increasing literacy and the spread of ideas.



TELEGRAPH
C. 1837 AD

The telegraph enabled long-distance communication, with Morse code as a new language of dots and dashes representing letters and numbers



TELEPHONE
C. 1876 AD

Invented by Alexander Graham Bell, the telephone revolutionized personal and business communication.



RADIO

C. 1895 AD

Guglielmo Marconi's development of the radio allowed for the broadcast of voice and music, reaching a mass audience



TELEVISION
C. 1927 AD

The first practical demonstrations of television by Philo Farnsworth allowed for visual and audio broadcasting to homes.



INTERNET
C. 1969 AD

The invention of the internet has allowed for global communication and the sharing of information at an unprecedented scale.



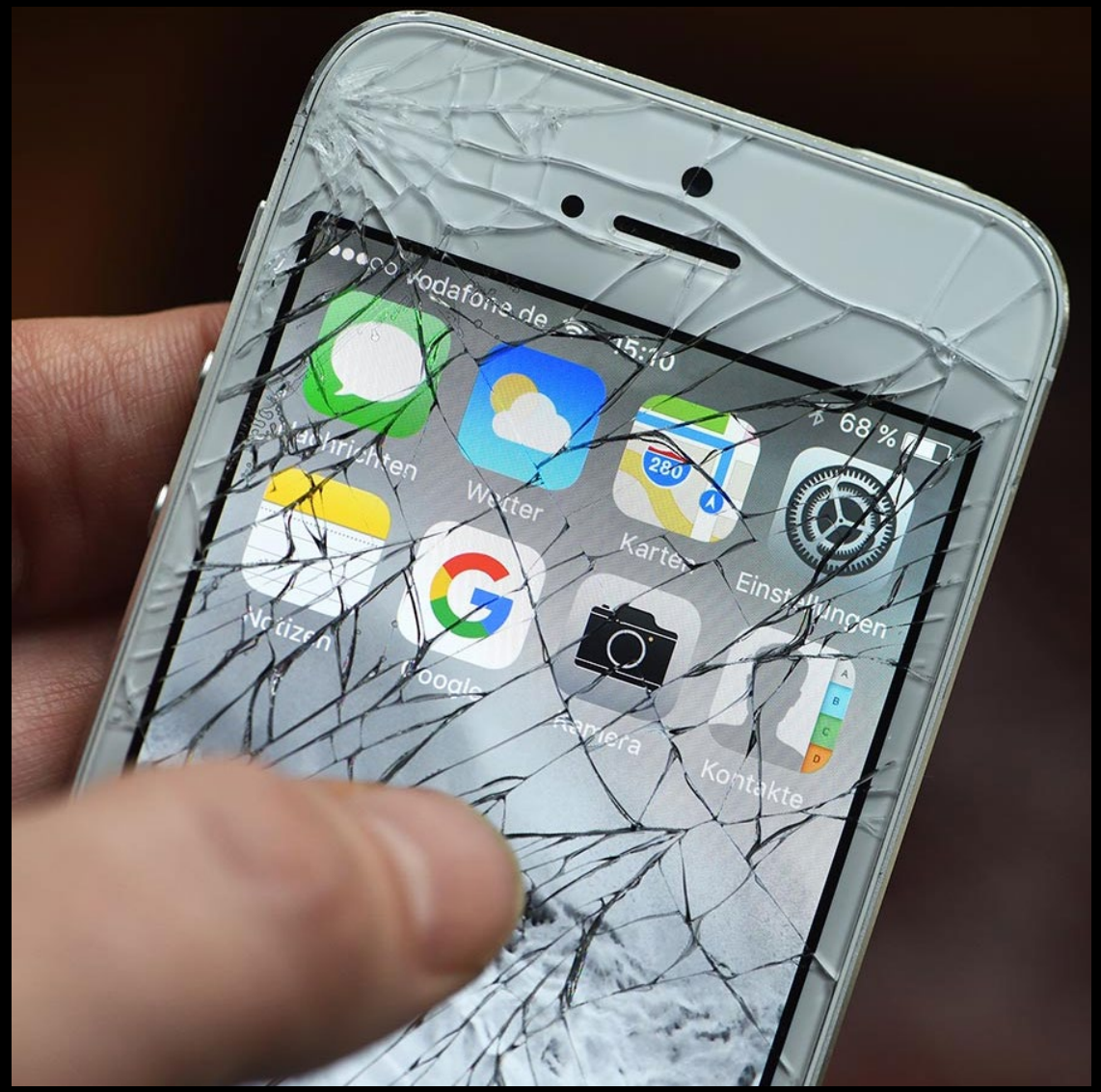
WORLD WIDE WEB
C. 1990 AD

Developed by Tim Berners-Lee, the web has allowed for the creation and sharing of digital text, images, and video, shaping how we communicate and access information today.

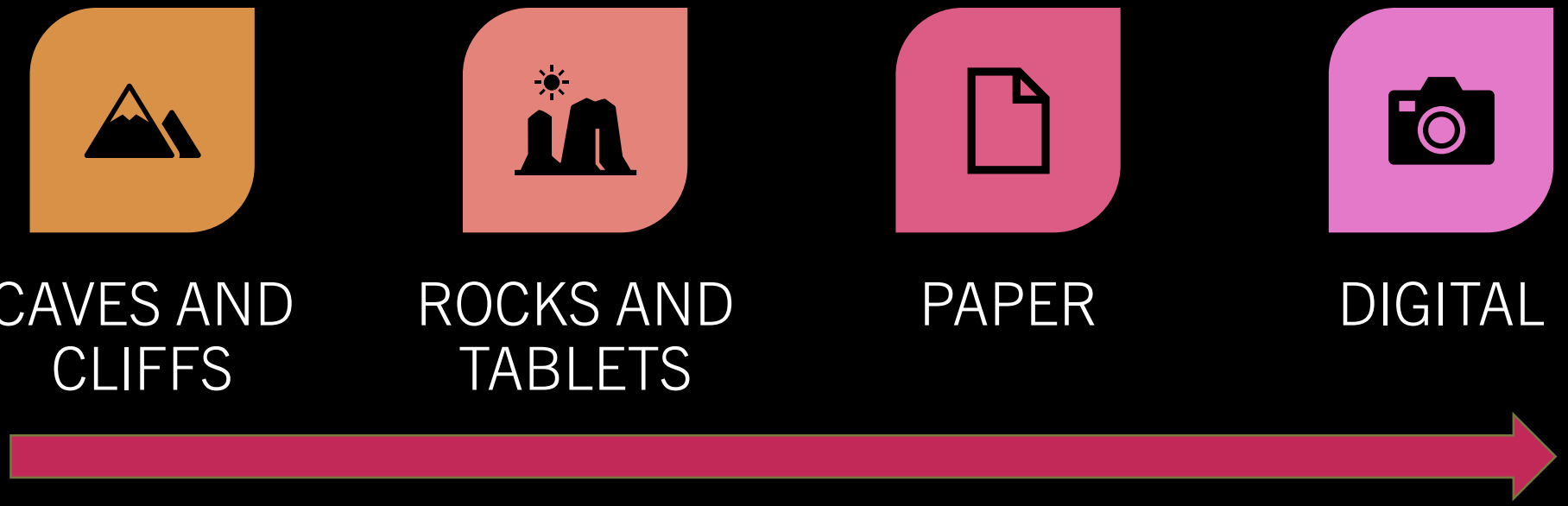


IPHONE
2007 AD

The invention of the internet has allowed for global communication and the sharing of information at an unprecedented scale.



INFORMATION TECHNOLOGY



40,000 YEARS OF PROGRESS



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RELIGION
WAR
TRADE
JOBS
HEALTH
WEALTH
POVERTY

IMPORTANT WORDS & CONCEPTS

ARTIFICIAL GENERAL INTELLIGENCE

- TURING TEST

  A machine and a human both converse unseen with a second human, who must evaluate which of the two is the machine, which passes the test if it can fool the evaluator a significant fraction of the time. Note: Turing does not prescribe what should qualify as intelligence, only that knowing that it is a machine should disqualify it.

- The Coffee Test (Wozniak)

  A machine is required to enter an average American home and figure out how to make coffee: find the coffee machine, find the coffee, add water, find a mug, and brew the coffee by pushing the proper buttons.

ARTIFICIAL GENERAL INTELLIGENCE

- The Robot College Student Test (Goertzel)

  A machine enrolls in a university, taking and passing the same classes that humans would, and obtaining a degree.

- The Employment Test (Nilsson)

  A machine performs an economically important job at least as well as humans in the same job.

ANTHROPOMORPHISM

Anthropomorphism is the attribution of human traits, emotions, or intentions to non-human entities. It is considered to be an innate tendency of human psychology (Wikipedia)

an interpretation of what is not human or personal in terms of human or personal characteristics (Merriam-Webster)



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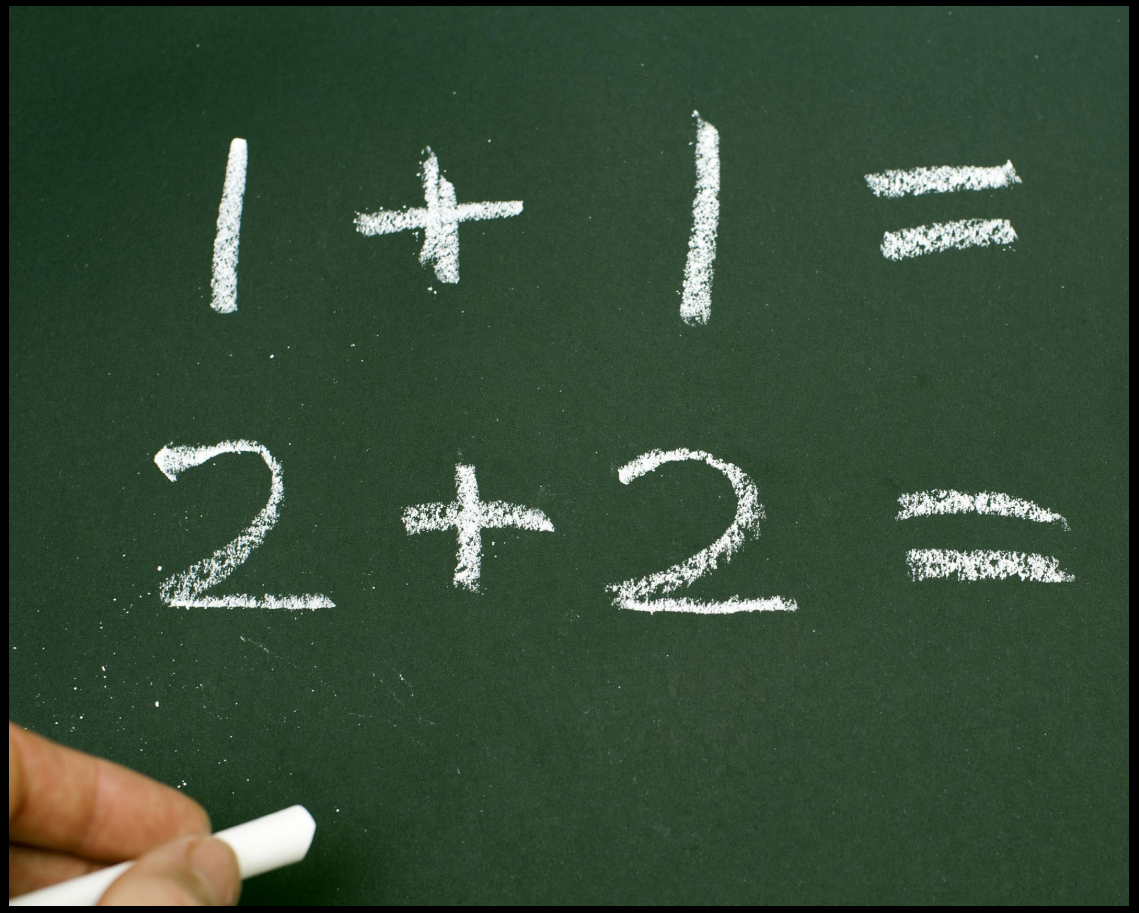
PAREIDOLIA

the tendency for perception to impose a meaningful interpretation on a nebulous stimulus, usually visual, so that one sees an object, pattern, or meaning where there is none. (Wikipedia)



DETERMINISTIC

Of or relating to a process or model in which the output is determined solely by the input and initial conditions, thereby always returning the same results (opposed to stochastic). (dictionary.com)



STOCHASTIC

Of or relating to a process or model in which the output is determined solely by the input and initial conditions, thereby always returning the same results (opposed to stochastic). (dictionary.com)



PROMPT

- The initial input provided by a human
- Serves as the basis for the AI to generate output.
- Could be in the form of a command or question

HALLUCINATION

- a hallucination or artificial hallucination (also occasionally called confabulation or delusion) is a confident response by an AI that does not seem to be justified by its training data, either because it is insufficient, biased or too specialized.

G P T

- GENERATIVE
- PRE-TRAINED
- TRANSFORMER

L L M

- LARGE
- LANGUAGE
- MODEL

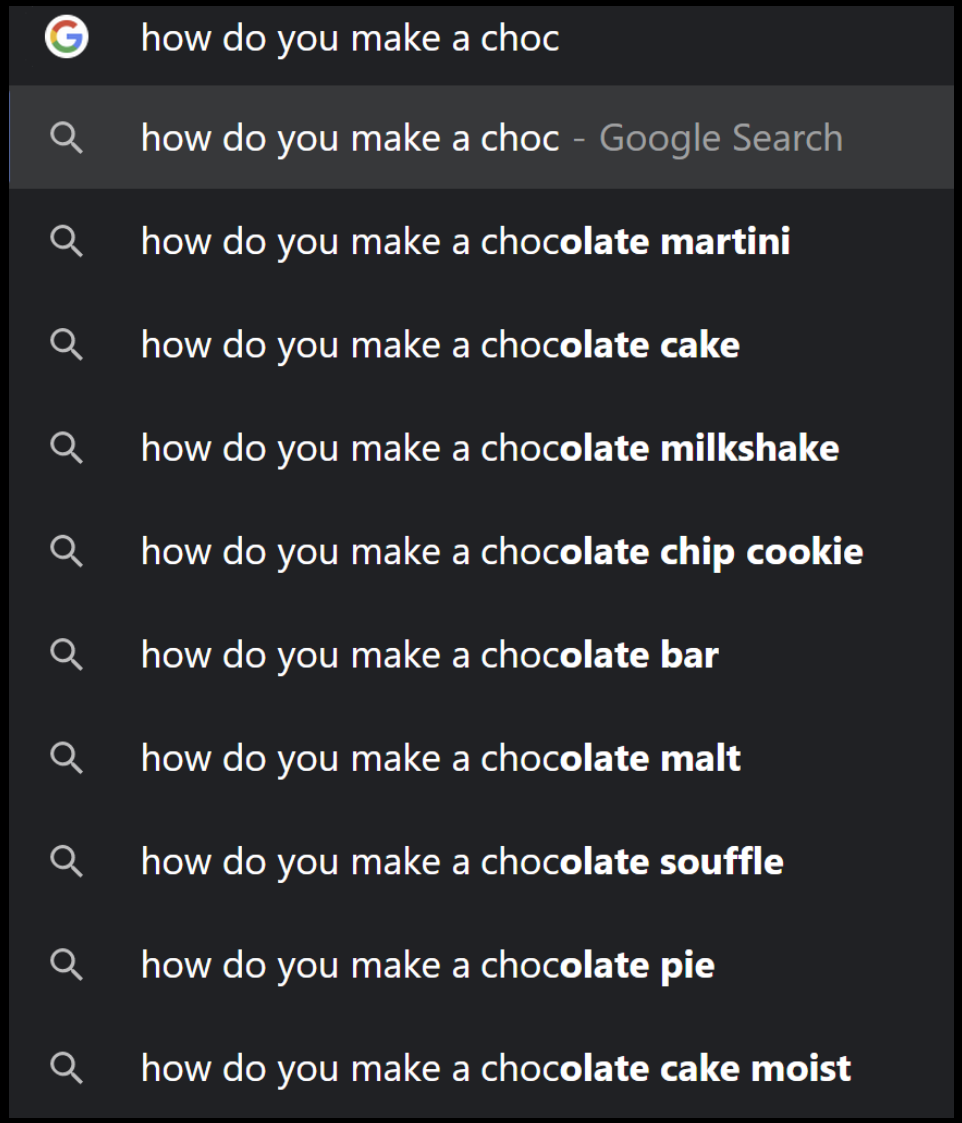
HOW DOES IT WORK?

I SAY CHOCOLATE YOU SAY...

- Chip Cookie
- Bunny
- Ice Cream Sundae
- Pie
- Milkshake
- Cake

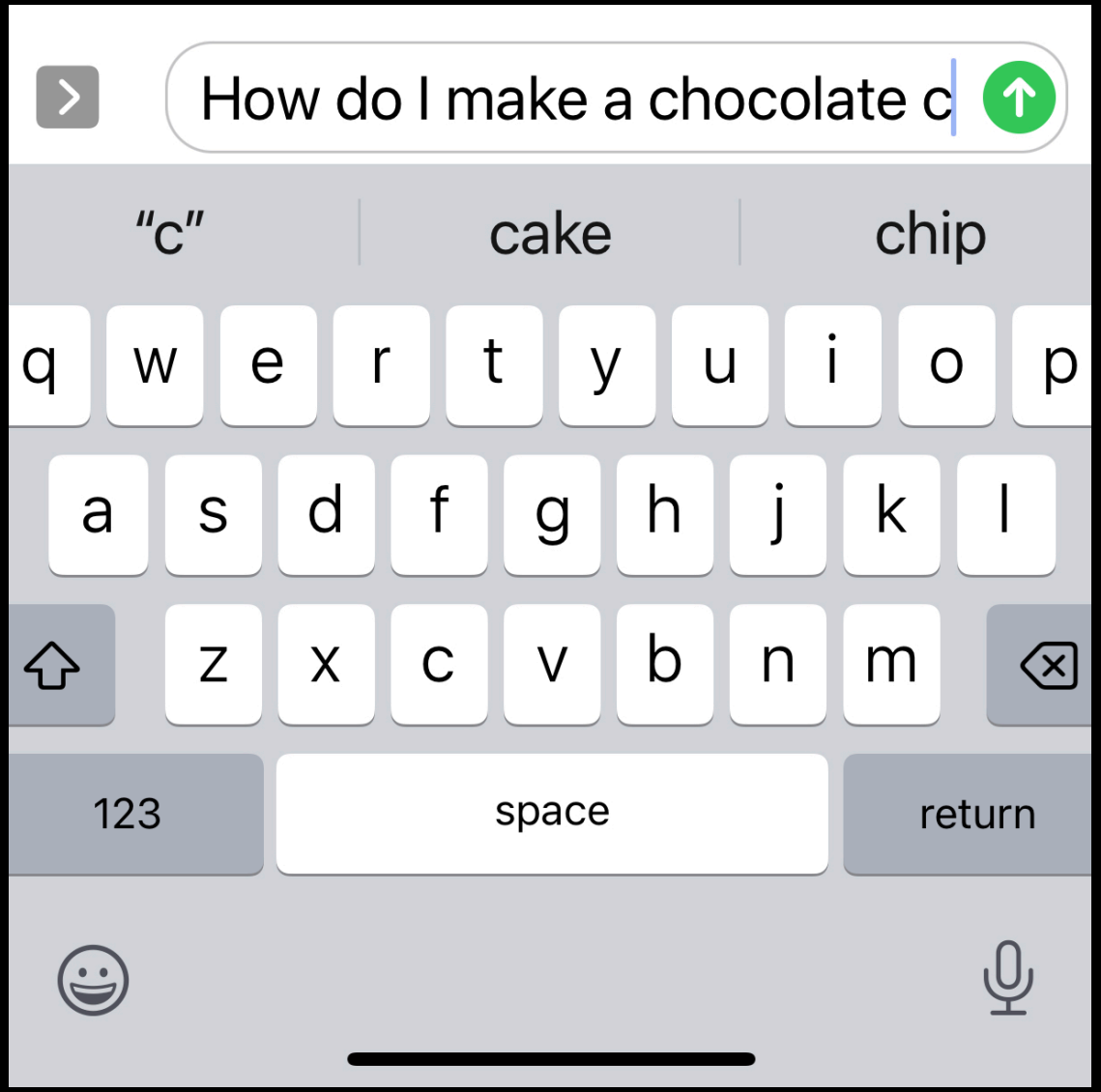
AUTOCOMPLETE

Google Search Auto Complete



PREDICTIVE TEXT

iPhone Predictive Text



AUTOCOMPLETE

- Suggests the next word based on:
  - What other people searched
  - What you typed before

- Limited
  - Only works off what the prior word
  - Doesn’t complete the sentence
  - Basic Words

GENERATIVE AI

- Uses statistics to determine the next word.
- Draws upon it’s training to calculate the probability of what the next words should be.
- Based on the input words or “prompt” it generates a “completion”.

- Training + Prompt = Result

LANGUAGE TRAINING - HUMANS

Humans

- 12-month-old – First Words
- 36 months – 900 Words
- Age 20 – 40,000 words.

- Humans learn through “lessons”
- Capable of self-study

LANGUAGE TRAINING - AI

GPT-1 – 117 Million Parameters

7000 Books

GPT-2 – 1.5 Billion Parameters

8 million documents, from 45 million webpages upvoted on Reddit.

GPT-3 - 175 billion Parameters

499 Billion tokens consisting of Common Crawl (570 GB), Web Text, English Wikipedia

GPT-3.5 and GPT-4 – “Undisclosed”

LANGUAGE TRAINING - AI

How do you learn millions of words, phrases and books?

- “Machine Learning”

We might ask the AI to finish a sentence

“I want to make a chocolate _____”

LANGUAGE TRAINING - AI

We might ask the AI to finish a sentence…

“I want to make a chocolate _____”

Trial and Error until the AI gets it right

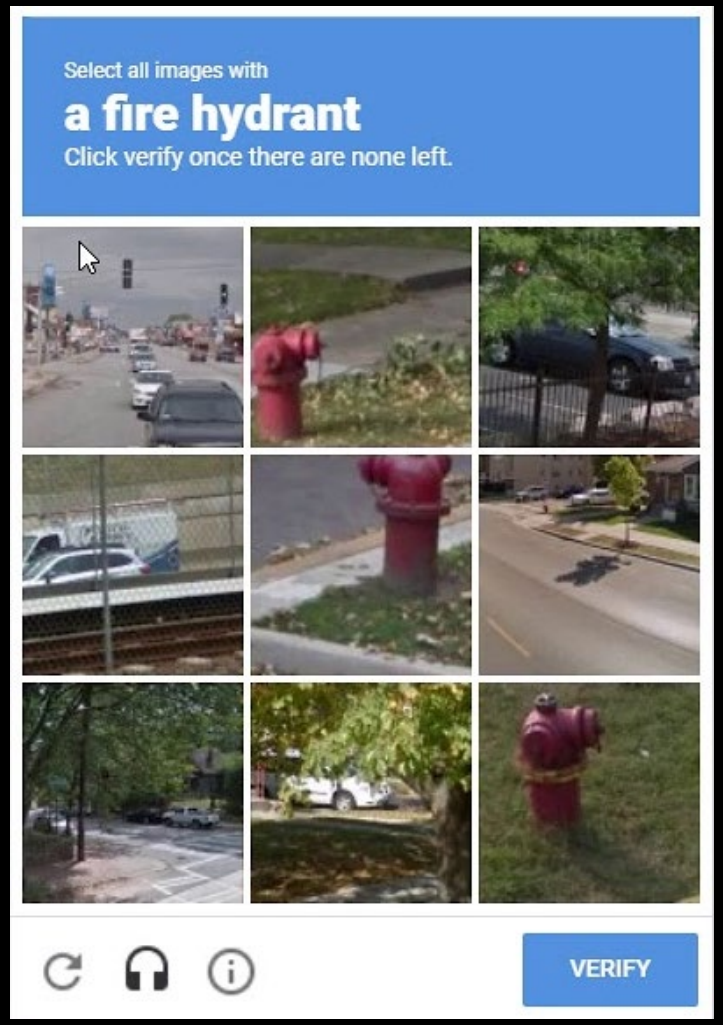
- Hamburger ✗
- House ✗
- Jellyfish ✗
- Cake ✓

LANGUAGE TRAINING - AI

We might ask the AI to finish a sentence…

“I want to make a chocolate __Cake_☑_”

- Humans can judge the output and reinforce
- Humans might make changes in the program



LANGUAGE TRAINING - AI

We might ask the AI to finish a sentence…

“I want to make a chocolate __Cake_✔_”

- We can compare the AI’s “guess” to the what statistically appears most often in books
- This process can be automated, processing millions of guesses
- “Fine tunes” it’s algorithm to make better guesses.
- “Learns”

SENTENCE COMPLETION...

Complete these sentences:

1) I have some graham crackers, so I will make a chocolate _____

2) I have some ice cream, so I will make a chocolate _____

3) I have some eggs, so I will make a chocolate _____

4) I saw my neighbor's dog, it was a chocolate _____

1) Graham Cracker Pie
2) Sundae
3) Cake
4) Labradoodle

SENTENCE COMPLETION...

Complete these sentences:

1) I have some graham crackers, so I will make a chocolate _____

2) I have some ice cream, so I will make a chocolate _____

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4) I saw my neighbor's dog, it was a chocolate _____.

1) Graham Cracker Pie
2) Sundae
3) Souffle
4) Labradoodle

REVIEW...

- Trained on MASSIVE amounts of data
- Generates text, images etc. based on a probability
- The probability is derived from the training data
- It may produce a different outcome every time

WHOSE DATA?

- Whose data was it trained on?
- Who owns the data?
- Who owns the AI output?

- Our legal system is not equipped to handle AI

Elon Musk threatens to sue Microsoft over Twitter data

20 April



By Annabelle Liang
Business reporter

Twitter boss Elon Musk has threatened to sue Microsoft as he accused the technology giant of using data from his social media company without permission.

"They trained illegally using Twitter data. Lawsuit time," the multi-billionaire **said in a tweet**.

DATA SECURITY

- What happens to data you submit?
- Is your data in the AI?
- Will someone else use your data?

Samsung bans use of generative AI tools like ChatGPT after April internal data leak

Kate Park @kateparknews / 9:17 AM EDT • May 2, 2023 Comment



Image Credits: Chung Sung-Jun / Getty Images

A month after internal, sensitive data from Samsung was accidentally leaked to ChatGPT, Samsung is cracking down on usage of the generative AI service. The electronics giant is temporarily restricting the use of generative AI tools on company-owned devices, covering computers, tablets and phones, as well as non-company-owned devices running on internal networks. The

TRUE OR FALSE?

- Can you trust the training?
- Was there bias in the training?
- The AI output is based on Statistics
- “Stochastic”- different every time



RIPE FOR ABUSE

- Criminals will use it
- Rogue states
- Only the Wealthy?



NEED FOR POLICIES

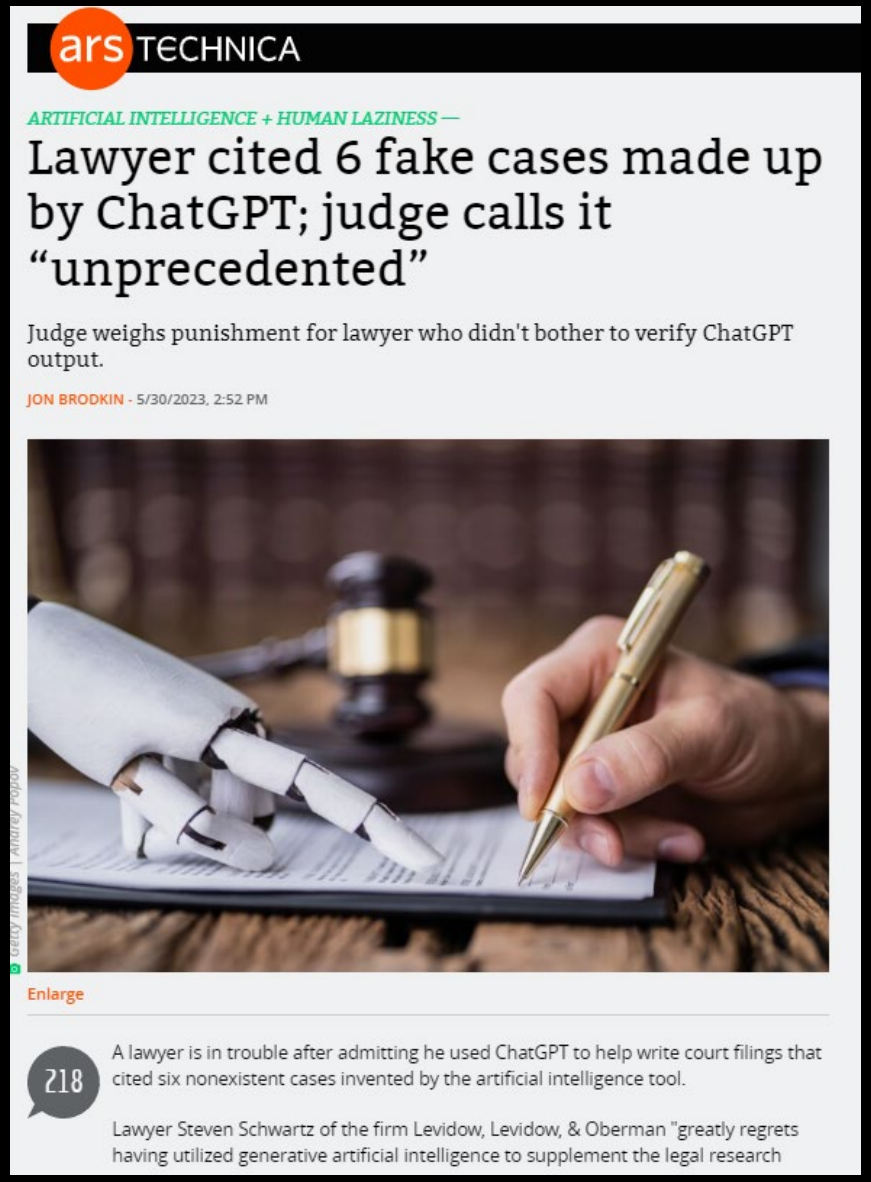
- HR Policy to address the use of AI
- Copyright of AI output
- Data Security and Privacy Policies
- Staff training on how to use AI
- Who is allowed to use AI?
- How will you evaluate staff?



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TREAD CAREFULLY

- GPT (and others) are word generators
- They are not “fact machines”
- They don’t know “correct” and “incorrect”
- They produce results based on statistics
- The do not have personality or emotions
- Do not “anthropomorphize” them



ars TECHNICA

ARTIFICIAL INTELLIGENCE + HUMAN LAZINESS —

Lawyer cited 6 fake cases made up by ChatGPT; judge calls it “unprecedented”

Judge weighs punishment for lawyer who didn't bother to verify ChatGPT output.

JON BRODKIN - 5/30/2023, 2:52 PM

Enlarge

218

A lawyer is in trouble after admitting he used ChatGPT to help write court filings that cited six nonexistent cases invented by the artificial intelligence tool.

Lawyer Steven Schwartz of the firm Levidow, Levidow, & Oberman "greatly regrets having utilized generative artificial intelligence to supplement the legal research

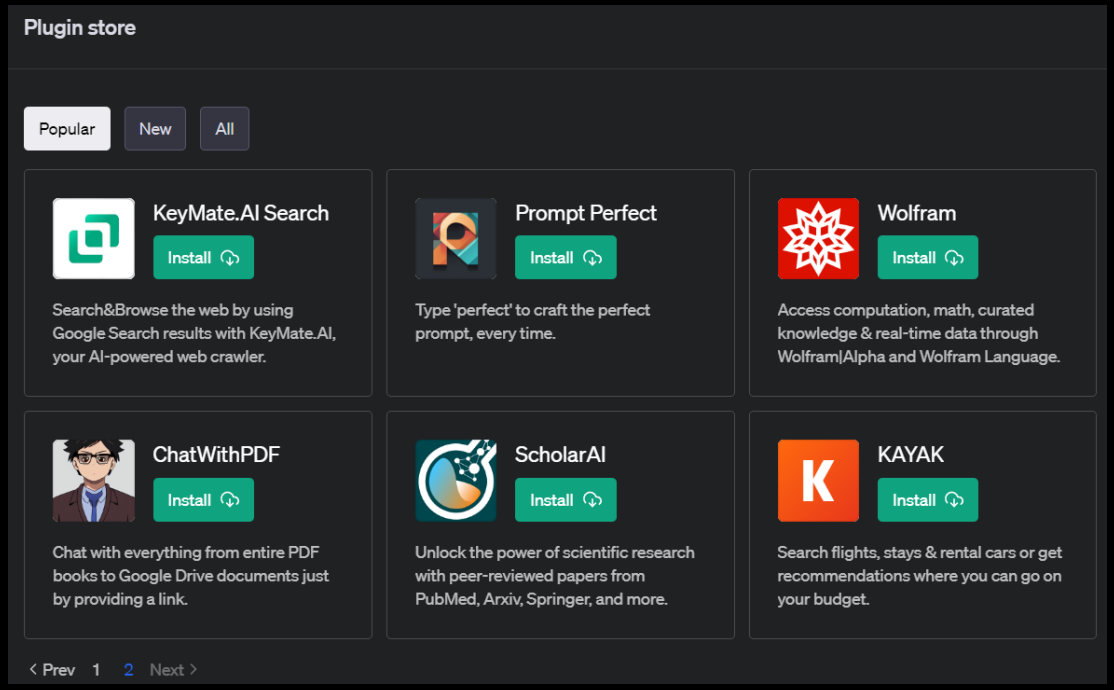
WHAT CAN AI DO? (TODAY)

- Write a Draft : Policy, Speech, Press Release
- Planning : Give it a goal and outline all the steps
- Determine Intent: What does the person want?
- Determine Sentiment: Was the writer happy or sad?
- Summarize Key Points from text
- Turn Text into picture (and vice versa)



WHAT WILL AI DO?

- Embedded into EVERYTHING
- Integrate with EVERYTHING
- Given a goal, carry out tasks
- Orchestrate other AI



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Wrap-Up

Evaluation

Please complete the webinar evaluation:

https://www.surveymonkey.com/r/LKNYZMB

Questions

Please contact:

Terry Bearden, NCRA

tbearden@commmunityactionpartnership.com

A recording of the webinar and a copy of the slides will be posted to the NCAP website. Watch for an email with the link to access these resources.

Thank you!