A.I. IN EDUCATION:

The Promise and the Peril

Presented by Members of the Dawson A.I. Teaching Community of Practice, Fall 2021

Andrew Katz
Michel Fournier-Simard
Kasia Wolfson
Sarah Allen
Robert Stephens
Myriam Dimanche

PRESENTATION OUTLINE

1. Introduction – Dawson A.I. Teaching Community of Practice
2. Teaching Students about A.I. through Kid Lit
   Andrew Katz (English)
3. Automatic Transcription Software in Education and Research
   Michel Fournier-Simard (Political Science)
4. Whose Academic Integrity? A case of Turnitin.com and standards of academic integrity in the age of A.I.
   Kasia Wolfson (Anthropology)
5. A.I. and Social Media Literacy: Addiction by design?
   Sarah Allen (Humanities/Philosophy)
6. Discussion period / Q&A

DAWSON A.I. TEACHING COMMUNITY OF PRACTICE

2021-22 Cohort

Sarah Allen

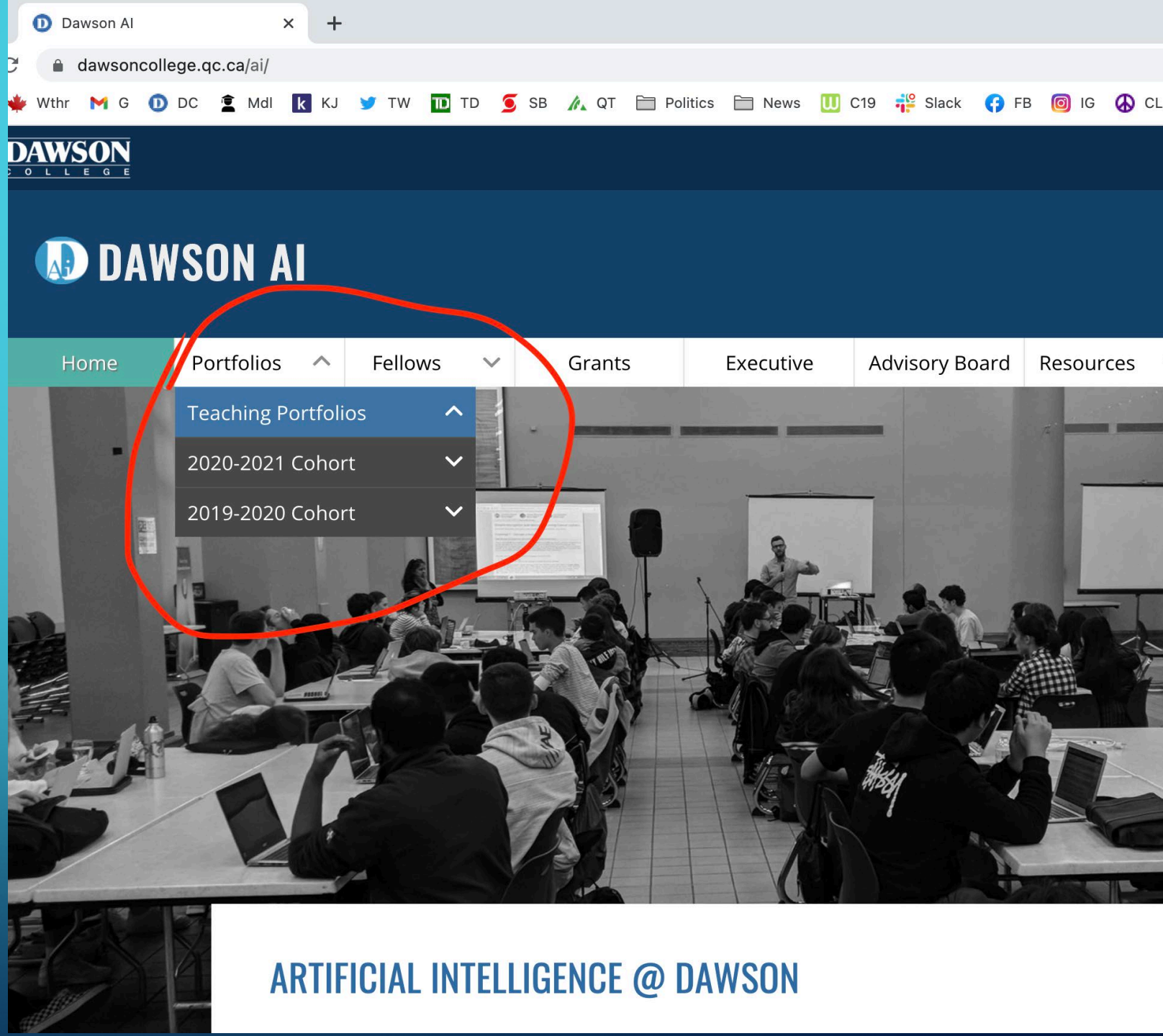
Tricia Campbell

Michel Fournier-Simard

Daniel Goldsmith

Andrew Katz

Kasia Wolfson



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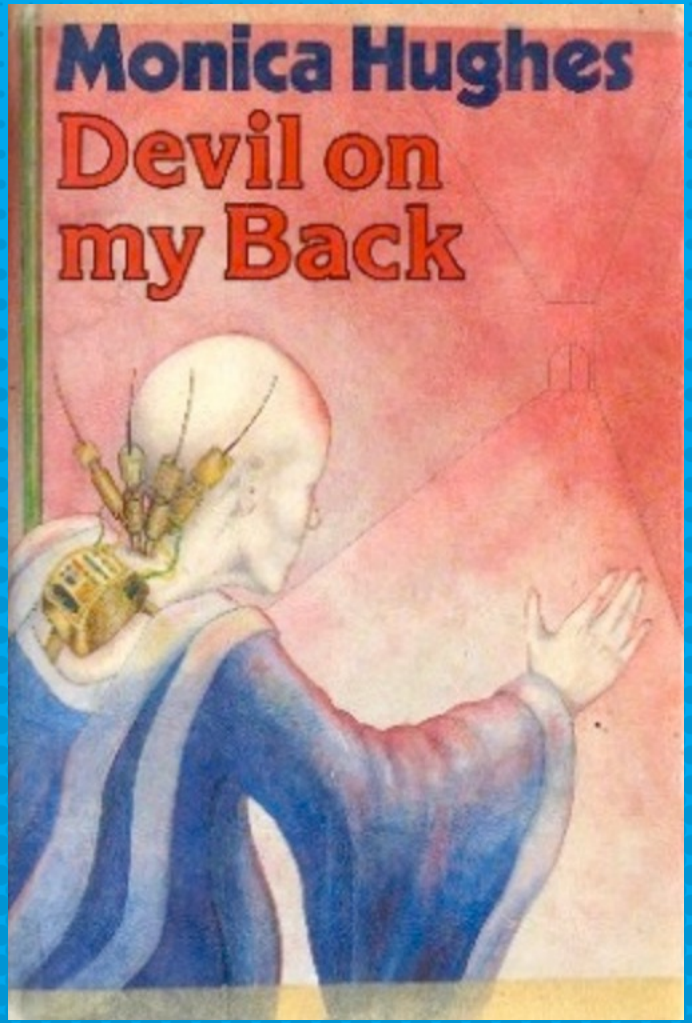
TEACHING CHILDREN ABOUT AI THROUGH KID LIT

Slides, concepts and activities adapted from an open-source course called “An Ethics of Artificial Intelligence Curriculum for Middle School Students,” created by Blakeley H. Payne with support from the MIT Media Lab Personal Robots Group, directed by Cynthia Breazeal.


Monica Hughes
Devil on my Back

OTHER AI-THEMED KID LIT

- A Wrinkle in Time
- Hubots
- Jinxed
- The Search for WondLa
- The Wild Robot
- The Wild Robot Escapes
- The Daybreak Bond and Firefly Code
- Friendroid
- Save the Crash-Test Dummies
- Defy the Stars

- FOUNDATIONAL CONCEPTS

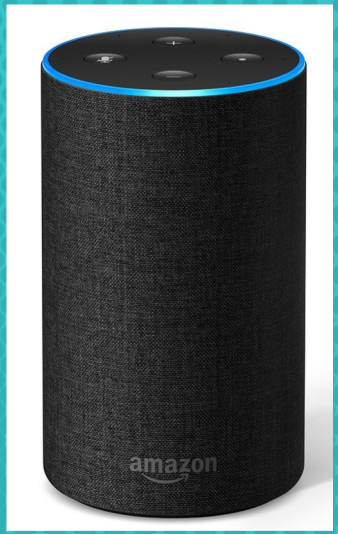
- LEARNING ACTIVITIES

FOUNDATIONAL CONCEPTS

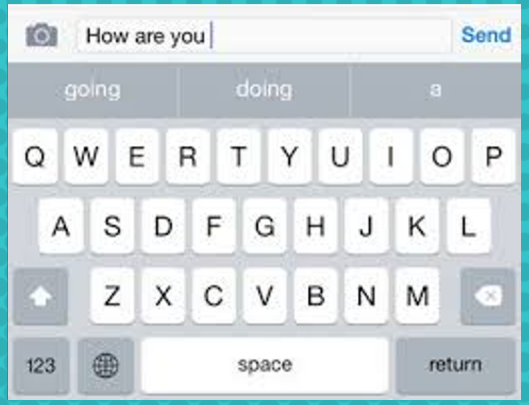
What does

"ARTIFICIAL INTELLIGENCE"

make you think of?


amazon

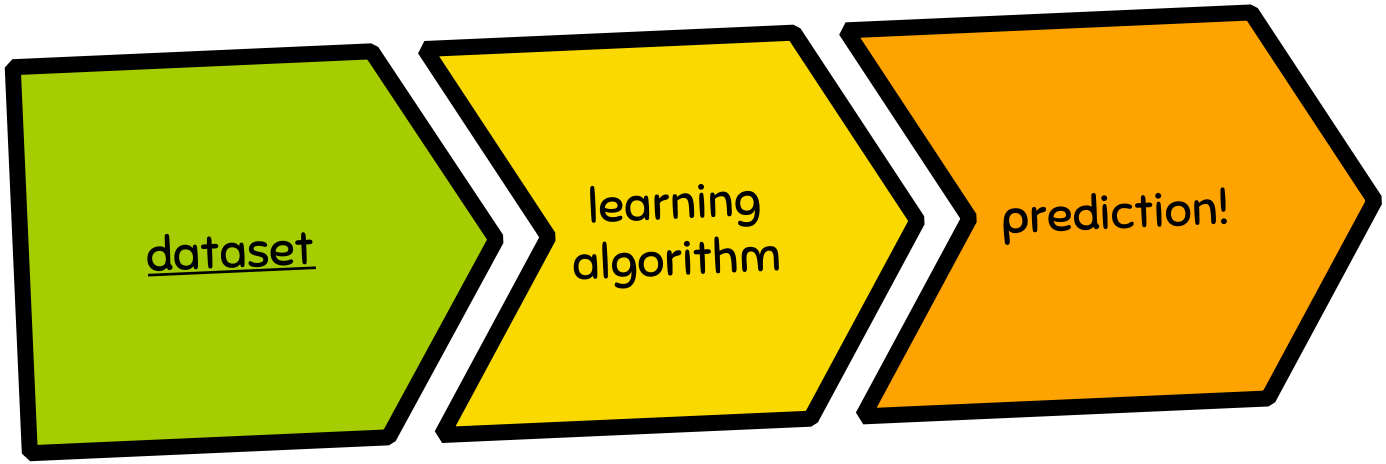
YouTube



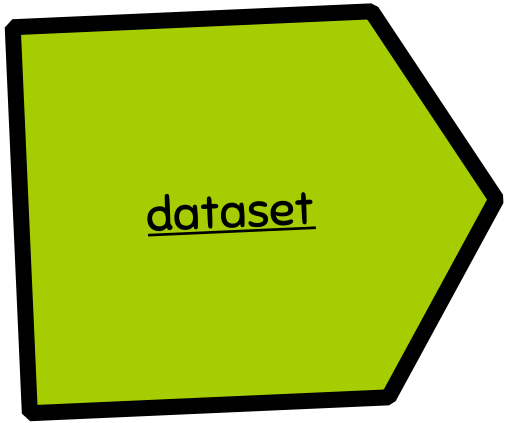
Google

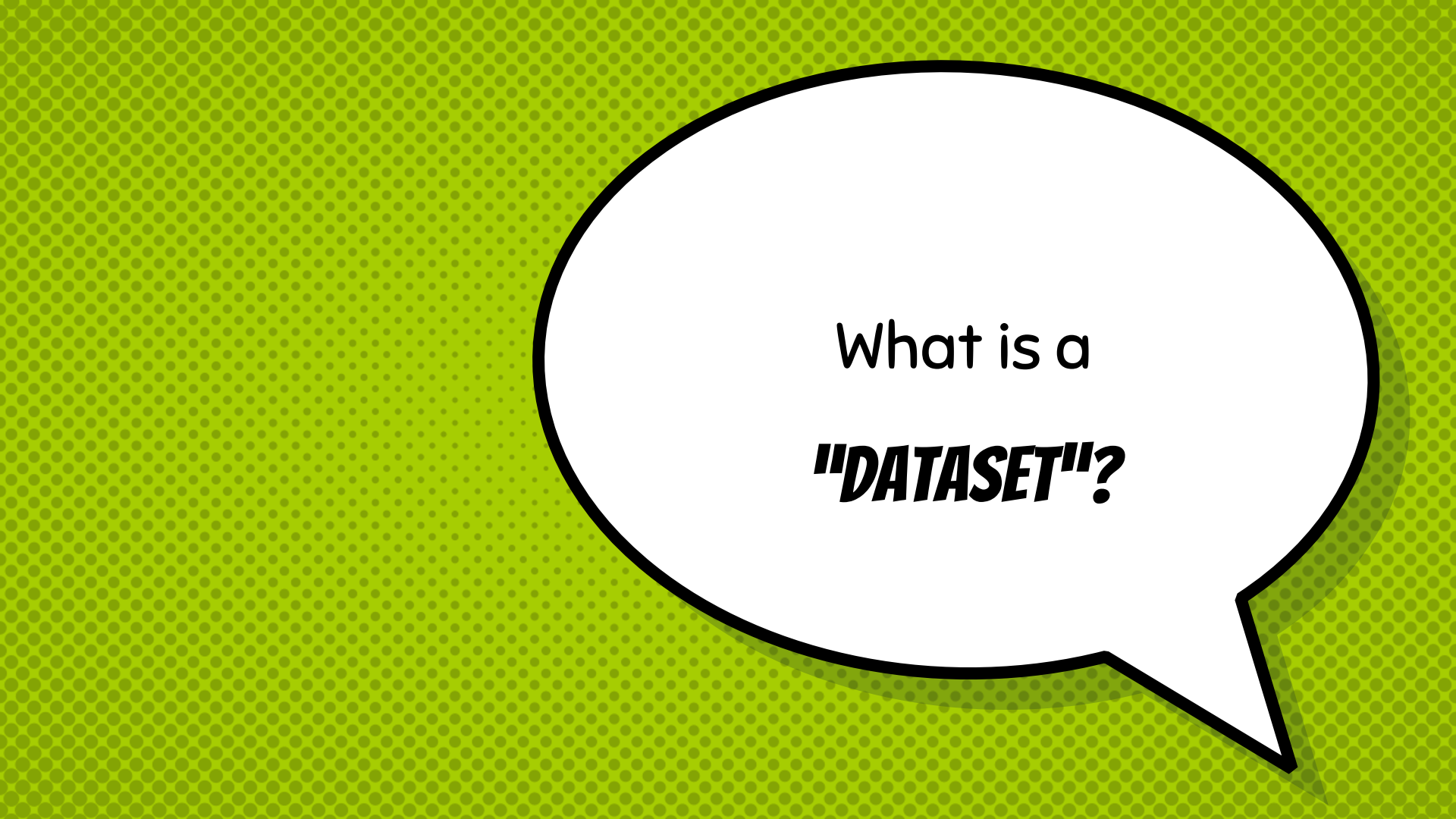
Say "Ok Google"

AI HAS THREE PARTS



AI HAS THREE PARTS



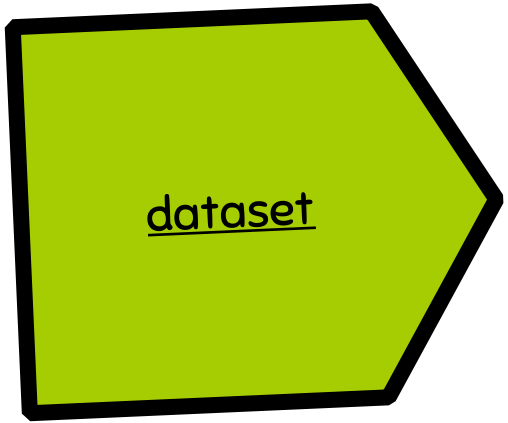

What is a
"DATASET"?

DATASETS

A dataset is a collection of curated data

- Images
- Measurements (time, views, inches, etc)
- Text
- Video recordings!

AI HAS THREE PARTS



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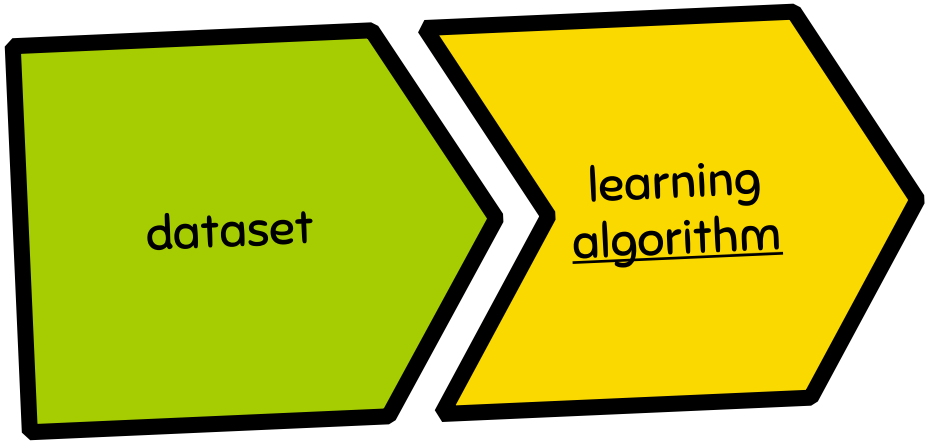
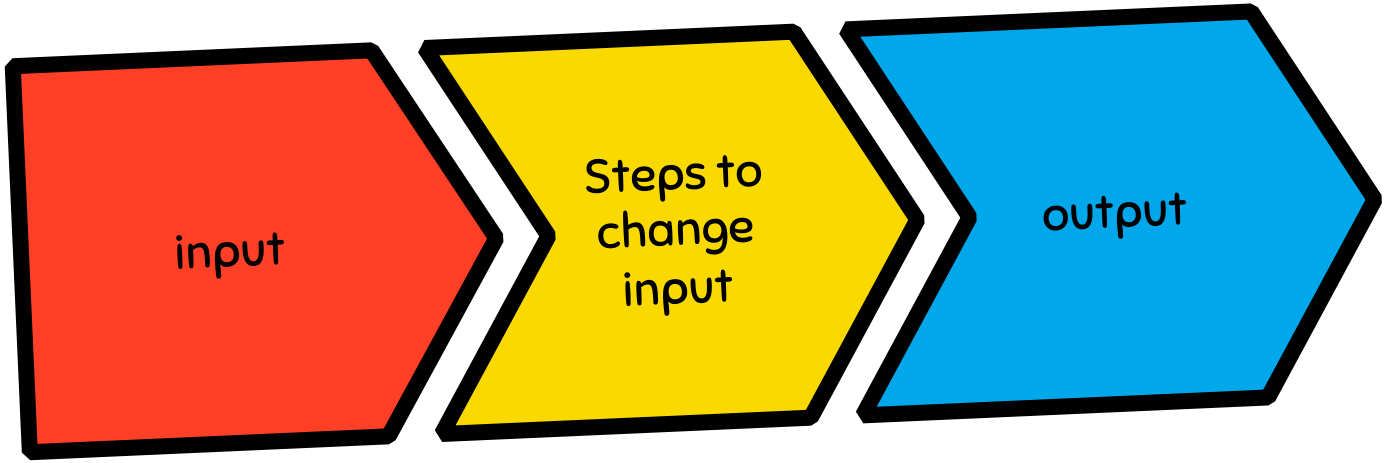


What is an

"ALGORITHM"?

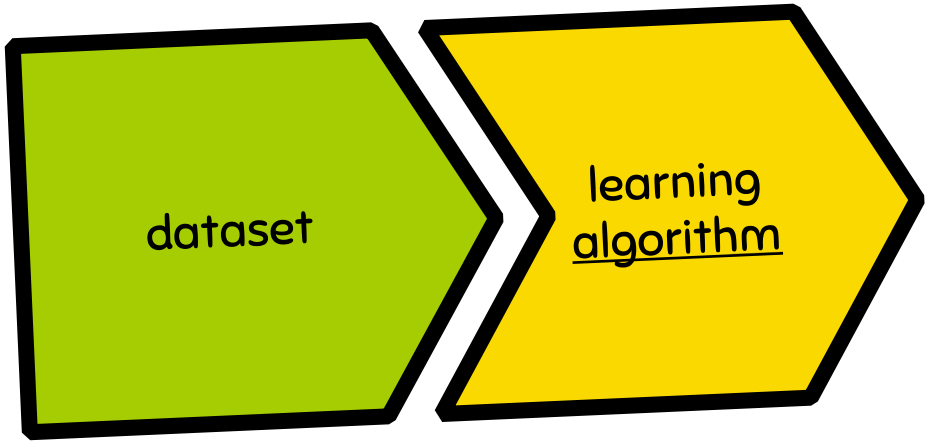
ALGORITHM



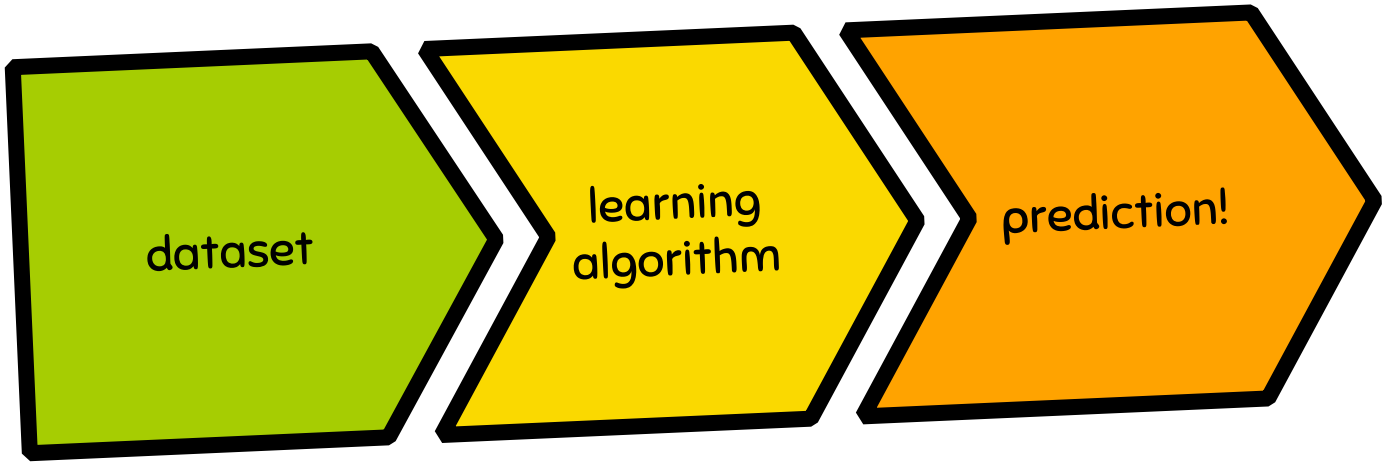
CAKE ALGORITHM

1. Preheat oven
2. Mix dry ingredients
3. Mix wet ingredients
4. Mix wet ingredients into dry
5. Blah blah blah

AI HAS THREE PARTS



ALGORITHM



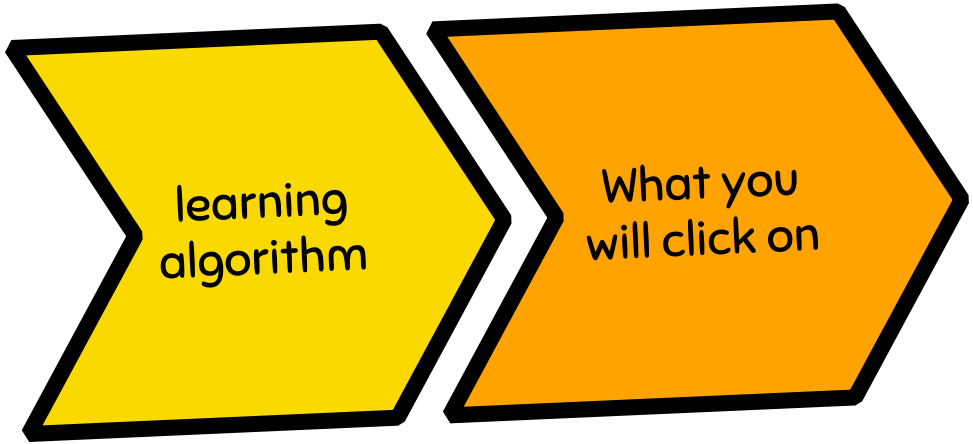
EXAMPLE

INSTAGRAM ADVERTISEMENT

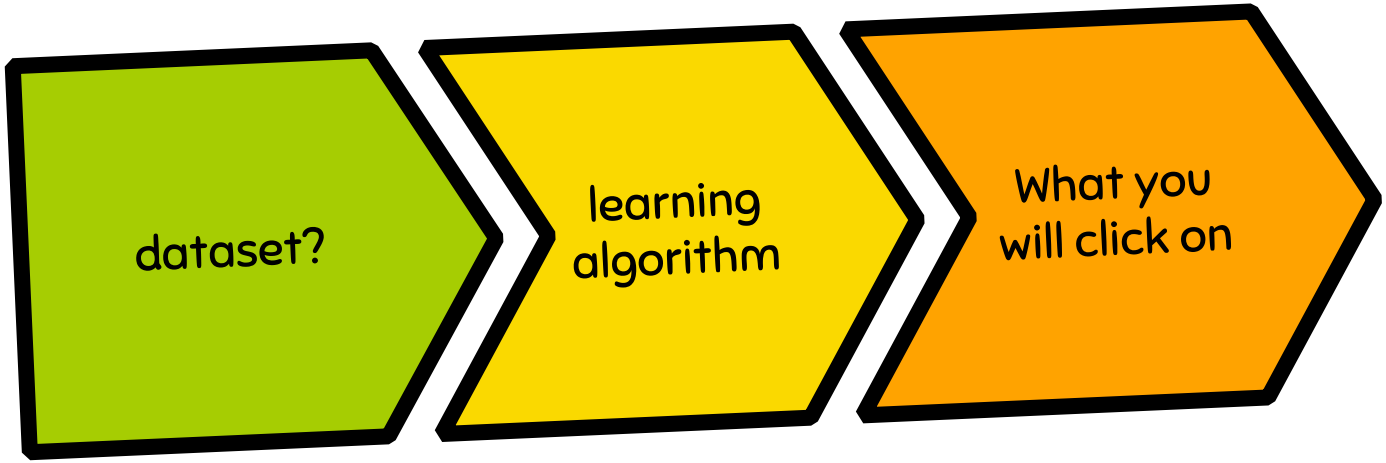
INSTAGRAM ADVERTISEMENT

What you will click on

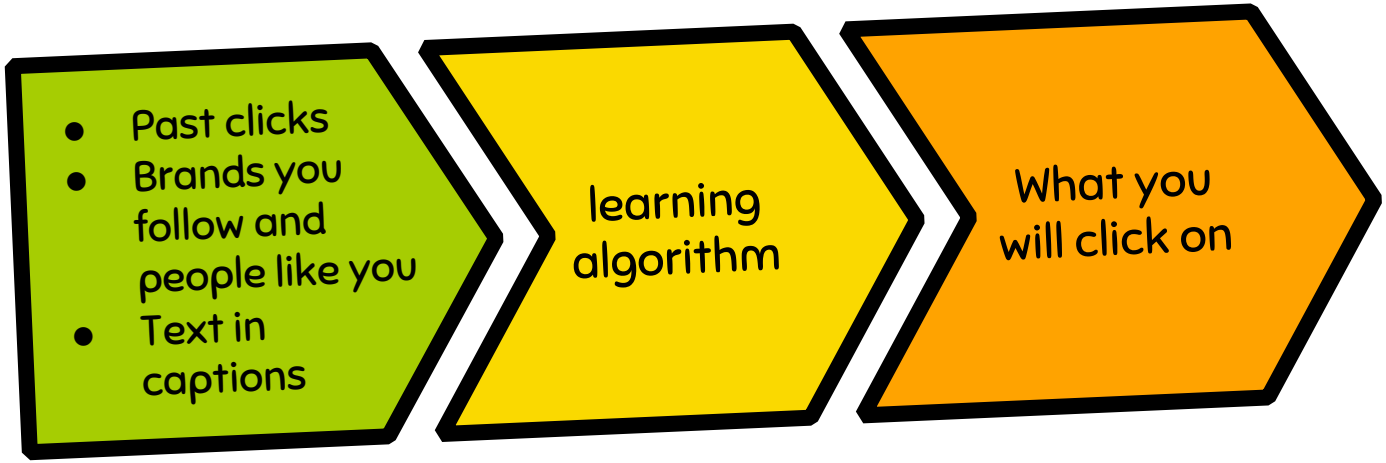
INSTAGRAM ADVERTISEMENT



INSTAGRAM ADVERTISEMENT



INSTAGRAM ADVERTISEMENT



ETHICS

of AI

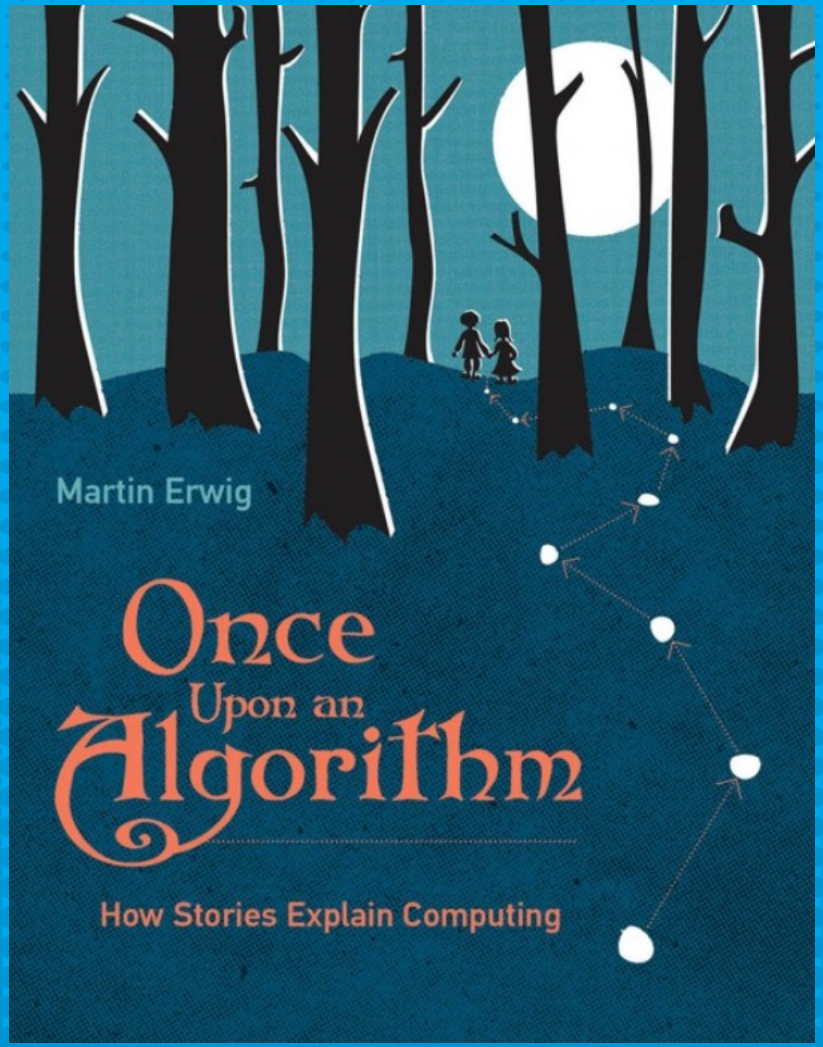
- **Goals** an algorithm could have
- **Stakeholders** who care about the outcome algorithm could have and **why they care** about the algorithm
- Potential alignment problems

What can

LITERATURE

teach us (and kids)

about AI?


Martin Erwig
Once Upon an Algorithm
How Stories Explain Computing

- Algorithms explained using Hansel and Gretel, Sherlock Holmes, Harry Potter.

- Issues of selecting, arranging and representing data common to both algorithms and storytelling.

- Explore how AI potentially intersects with lives of individuals, for better and for worse.

LEARNING ACTIVITIES

SPECULATIVE FICTION

[TECHNOLOGY NAME]

By [Your names go here]

ABOUT...

[Give a brief description of the technology. What does it do? How does it work?]

IN 50 YEARS THIS TECHNOLOGY COULD DO THE MOST GOOD BY...

[first response]
[second response]
[third response]

Therefore... [What might happen because of your responses? What might be some secondary effects?]

IN 50 YEARS THIS TECHNOLOGY COULD DO THE MOST HARM BY...

[first response]
[second response]
[third response]

Therefore... [What might happen because of your responses? What might be some secondary effects?]

ALTEREGO

By Blakeley H. Payne

ALTEREGO

AlterEgo is a wearable headset that allows you to "talk" to your devices, such as a search engine on your phone simply by thinking.

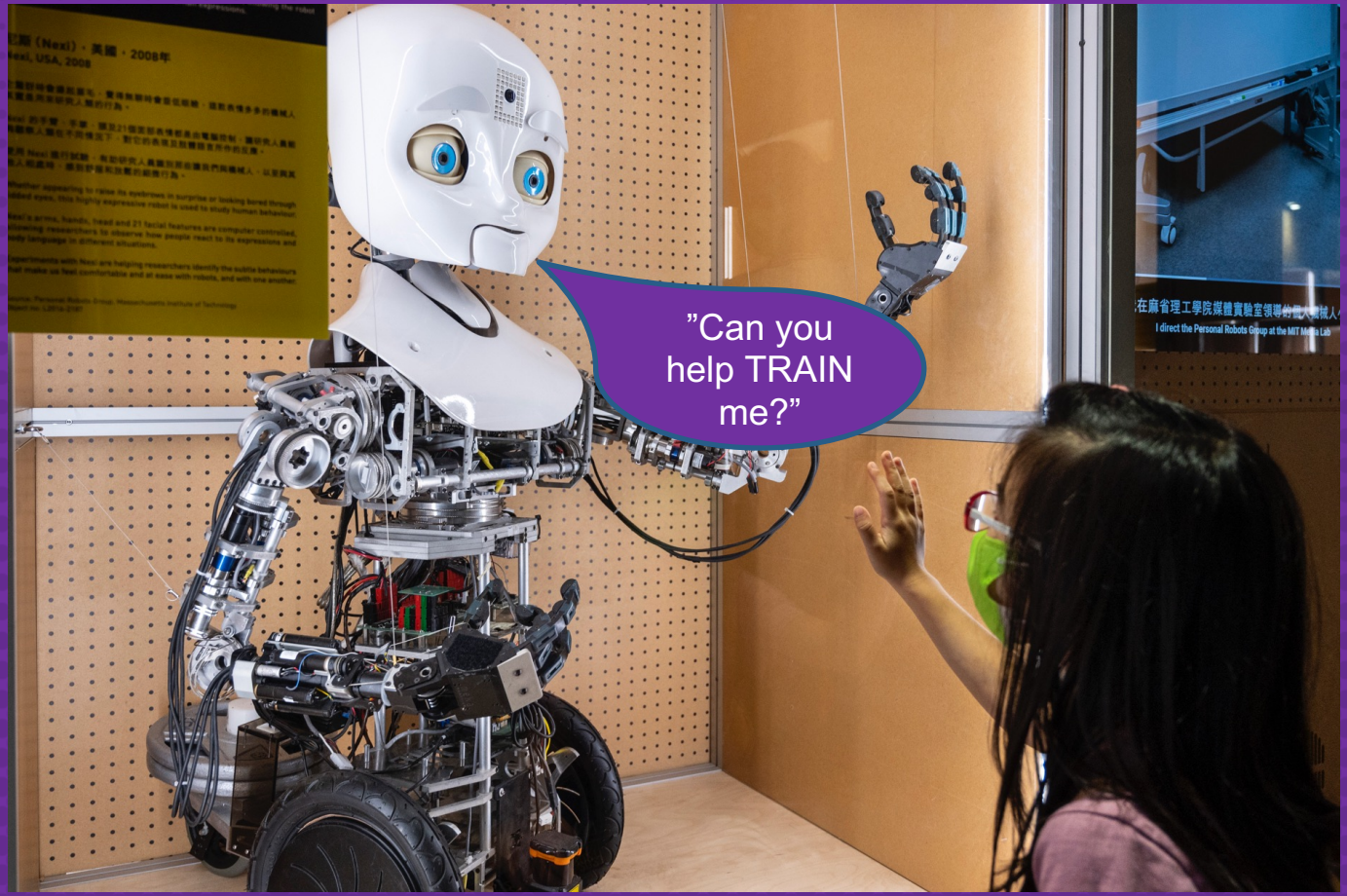

voice: total $10.07

IN 50 YEARS THIS TECHNOLOGY COULD DO THE MOST GOOD BY...

- People who can't speak will be able to communicate with their friends and family
- People who speak different languages can communicate by having their thoughts translated on apps
- Help us communicate with our pets and animals in general!
    - *Therefore...* People would probably eat less red meat → great for climate change!

IN 50 YEARS THIS TECHNOLOGY COULD DO THE MOST HARM BY...

- Parents could monitor their children's thoughts
- Governments could monitor their citizens' thoughts and unfairly imprison them if they don't like those thoughts
- The headset maker could sell your thought-data to advertisers and whenever you drive by a fast food place it plays an ad in your head about the food
    - *Therefore...* People would probably eat more red meat → very bad for climate change!

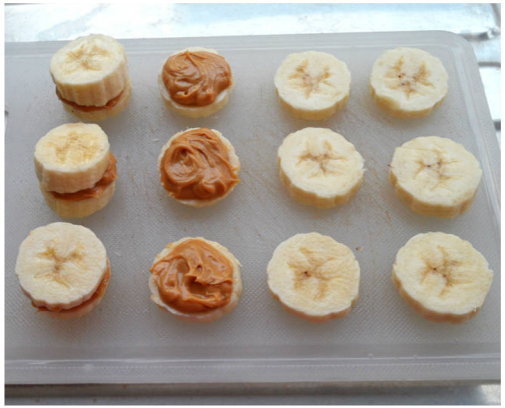

”Can you help TRAIN me?”

TRAINING DATA MATTERS

(a lot)

OTHER ACTIVITIES

WRITE AN ALGORITHM FOR THE BEST PB&J



The “best” PB&J sandwich could mean a lot

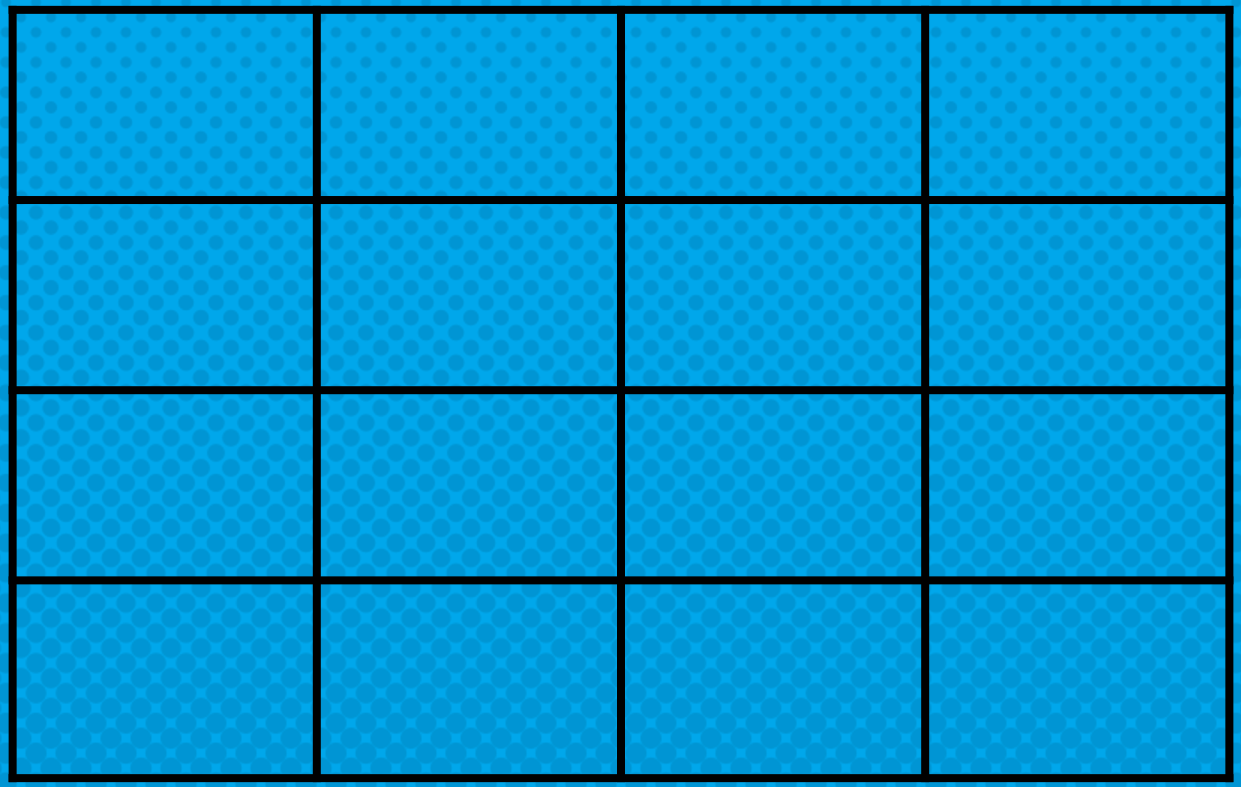
How do we decide what an algorithm should optimize for?

Ethical Matrices

- ~10 goals your peanut butter and jelly sandwich algorithm could have
- ~10 stakeholders who care about the outcome your PB&J algorithm could have and **why they care** about the algorithm

Values

Stakeholders



Values

Stakeholders

	Taste	Nutrition	Cost
Child			
Parent			
Doctor			

Values

Stakeholders

	Taste	Nutrition	Cost
Child			
Parent			
Doctor			

Values

Stakeholders

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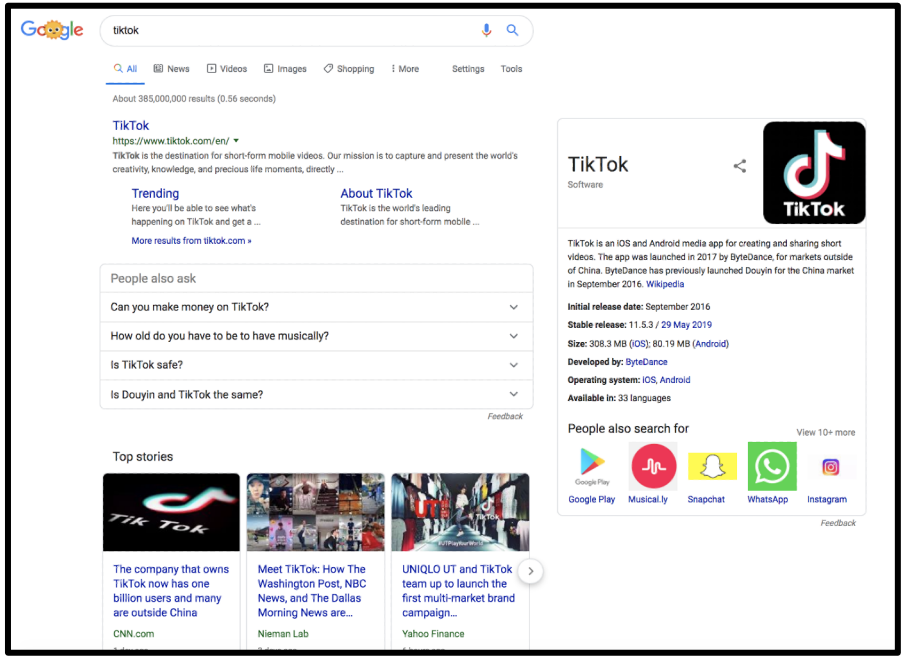
Values

Stakeholders

	Taste	Nutrition	Cost
Child			
Parent			
Doctor			

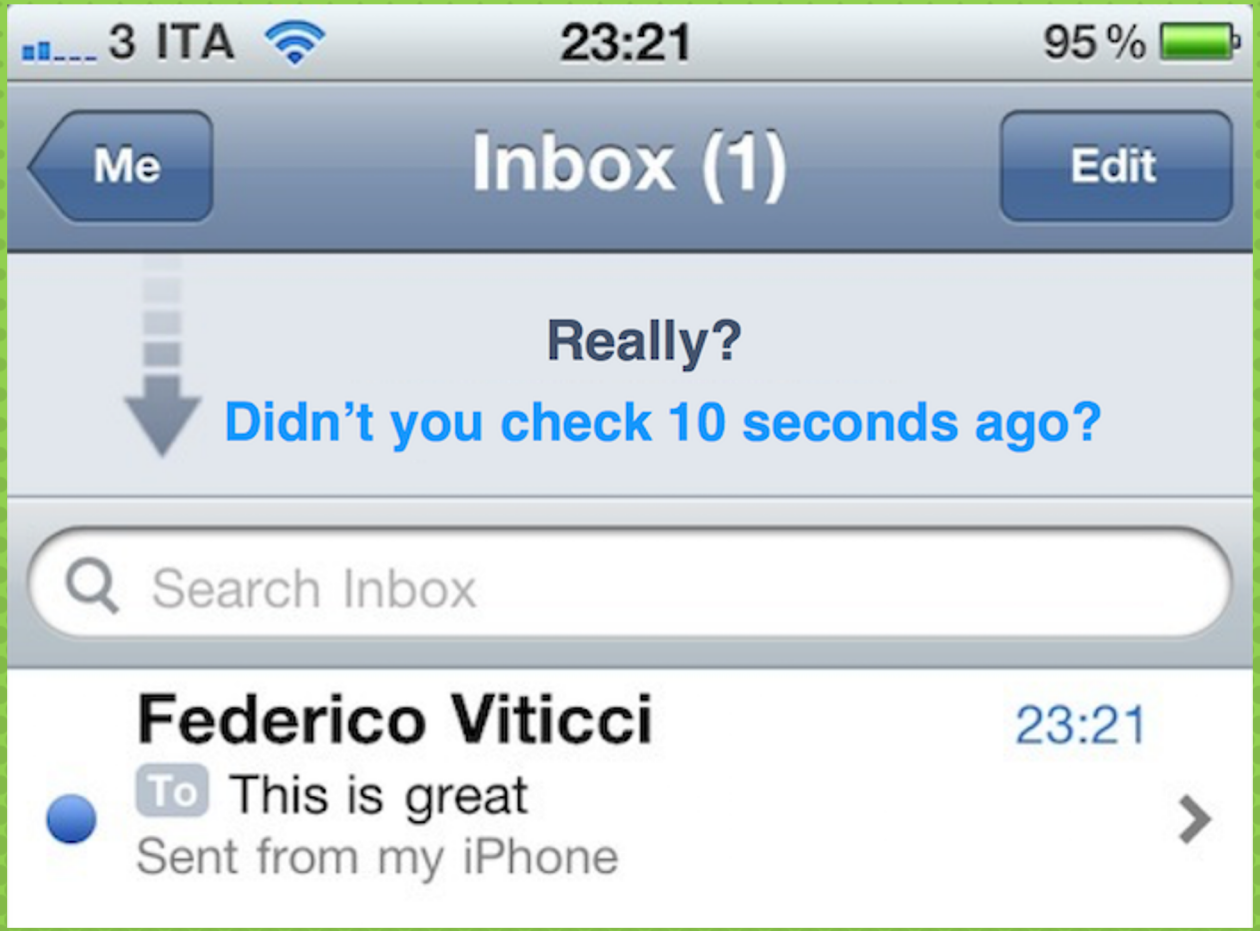
What should the goal be?

	Taste	Nutrition	Cost
Child			
Parent			
Doctor			

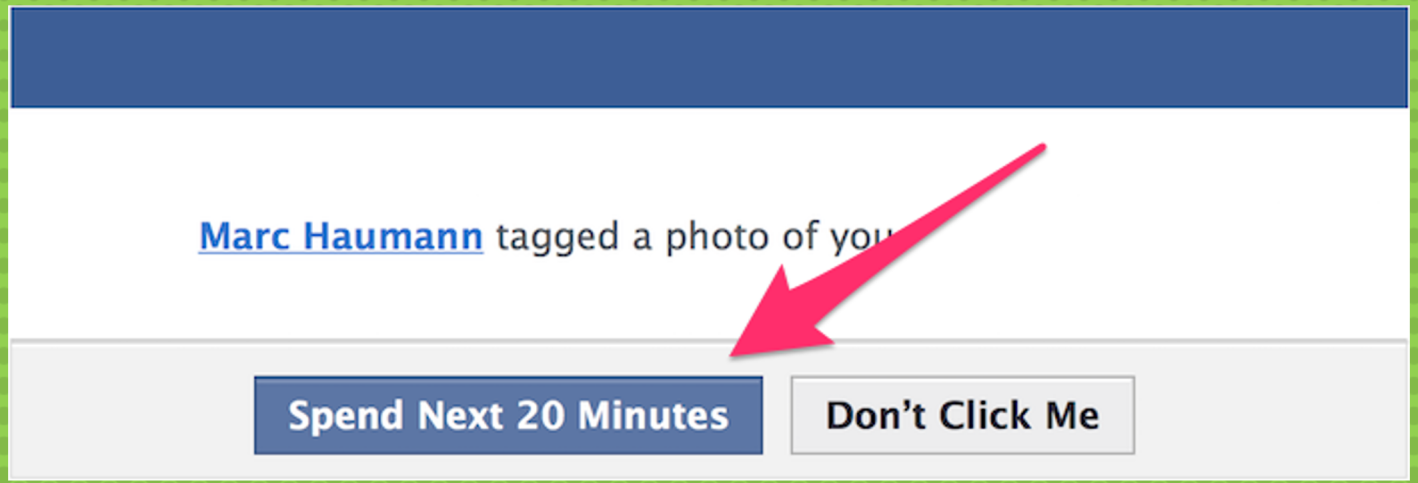


What do you think Google Search results are optimized for?

YOUTUBE REDESIGN ACTIVITY



Source: http://www.tristanharris.com/essays/



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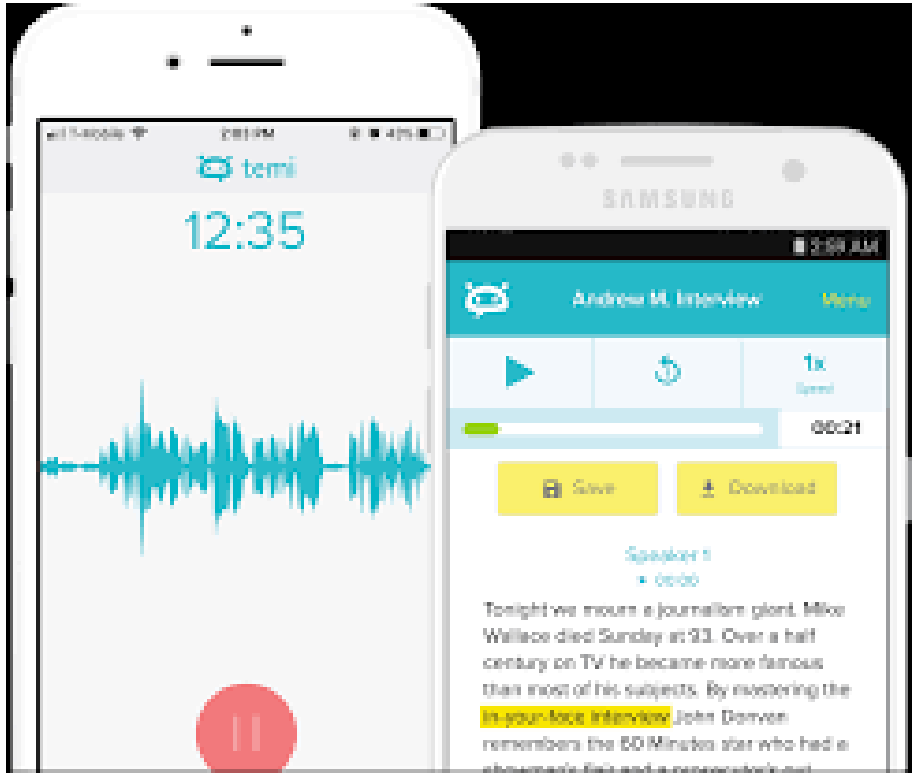


PED Day – October 2021

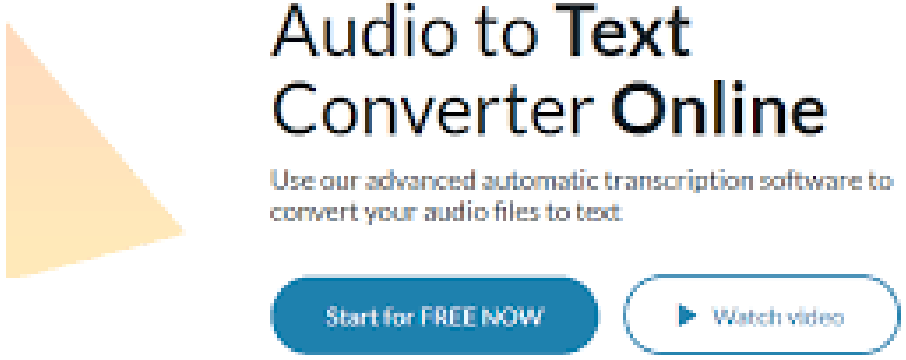
Dawson College

Michel Fournier-Simard

Automatic Transcription Software (ATS)

Automatic Transcription Software

- Uses voice and speech recognition technology to convert audio and/or video files into a written format
- Feeds on high-quality datasets
- Mature technology
- Accepted practice in academia
- Huge efficiency gains



Things to think about:

- *Cost*
- *What you lose by using an ATS*
- *Ethics / data security*

Uses in a CEGEP classroom

- RM or Humanities classes that ask students to conduct interviews
- Language classes
- Any asynchronous recorded content shared with students (subtitles)

Happy Scribe

- Free trial (no credit card)
- Web-Based (no app)
- Transcripts & Subtitles
- Languages & translation integrated
- English & French
- Easy to use

- Update December 2021: Now only offers 10 minutes for free instead of an hour.

Update December 2021

- Software prices / free trials change all the time, need to verify every semester
- Alternatives that include up to 40 minutes transcription for free include
  - trint.com
  - sonix.ai
  - Word online (used by many of my students).

Whose Academic Integrity?

A case of Turnitin and standards of academic integrity in the age of AI.

Kasia Wolfson Anthropology Department

Ped Day October 15, 2021

Academic Integrity

- Honesty
- Trust
- Fairness
- Respect
- Responsibility
- Courage

Turnitin

Pros

- Anti-plagiarism tool
- Educational tool

Turnitin® Submission guidelines

As a scholarly writing tool

DRAFT

- Number of submissions set by instructor
- Ungraded
- Dropbox closes before final deadline

FINAL

- Single submission
- Graded

Cons

- Proprietary
- Privacy/security concerns
- Negative message about academic integrity
- Similarity index misunderstood

Similarity Index
A percentage representing the number of words found in common with database content, divided by the total number of words in the file.

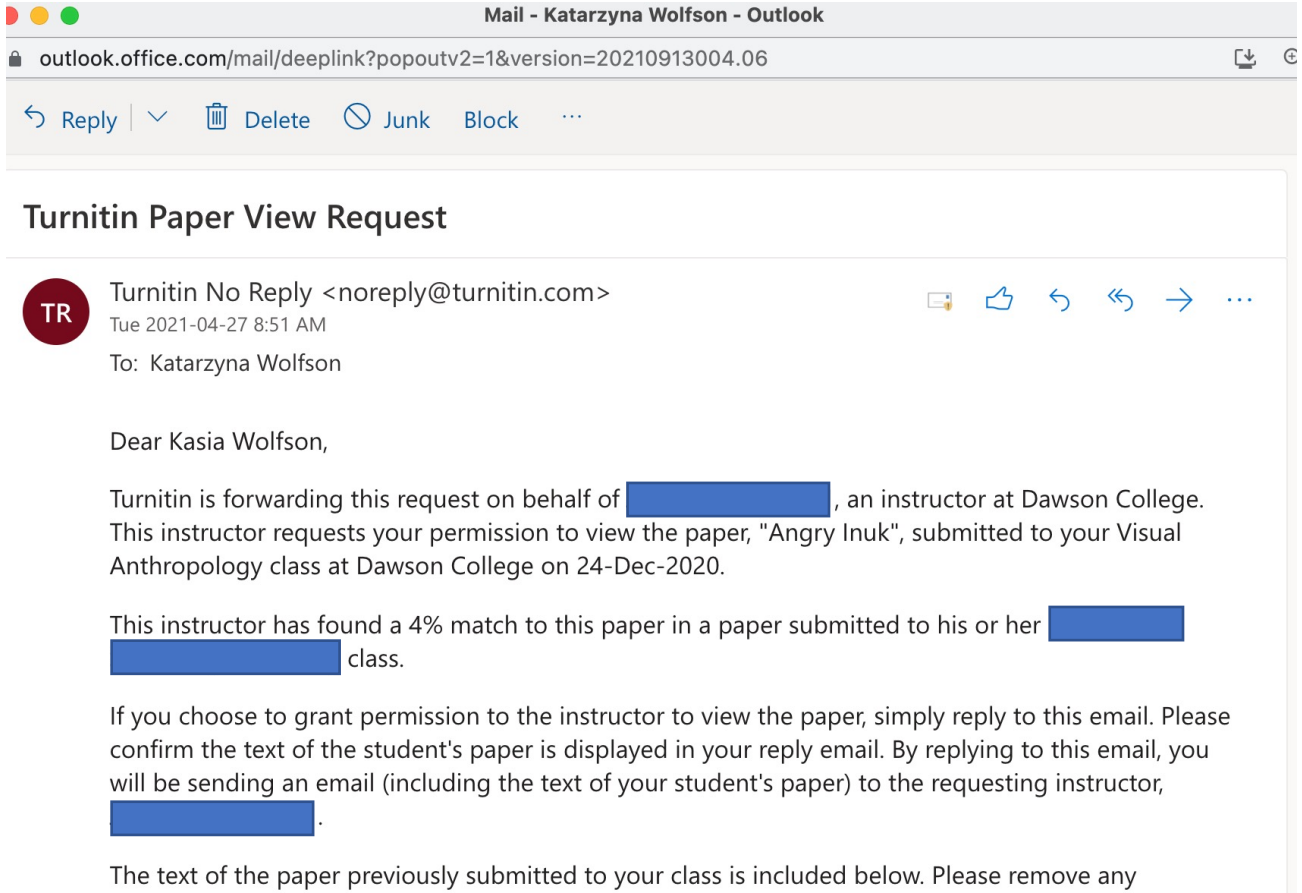
Blue:	<0%
Green:	1% to 24%
Yellow:	25% to 49%
Orange:	50% to 74%
Red:	75% to 100%

Note: There is no "safe" colour or percentage: no percentage or colour in similarity report can fully evaluate whether text has been plagiarized.

Whose Academic Integrity?

Whose academic integrity are we thinking about when we allow a technology which is data driven to negotiate interactions and determine a course of action?

Scenario



Paper View Request

- Turnitin contacted me on behalf of a teacher at Dawson (name identified)
- Requested to see a paper submitted in my class (class identified)
- Date of submission identified
- 4% match
- A reply to the email automatically grants permission to the teacher to view paper

Issues raised by *Paper Review Request*

- Student confidentiality
- Intellectual property
- Lack of guidelines
- The small print

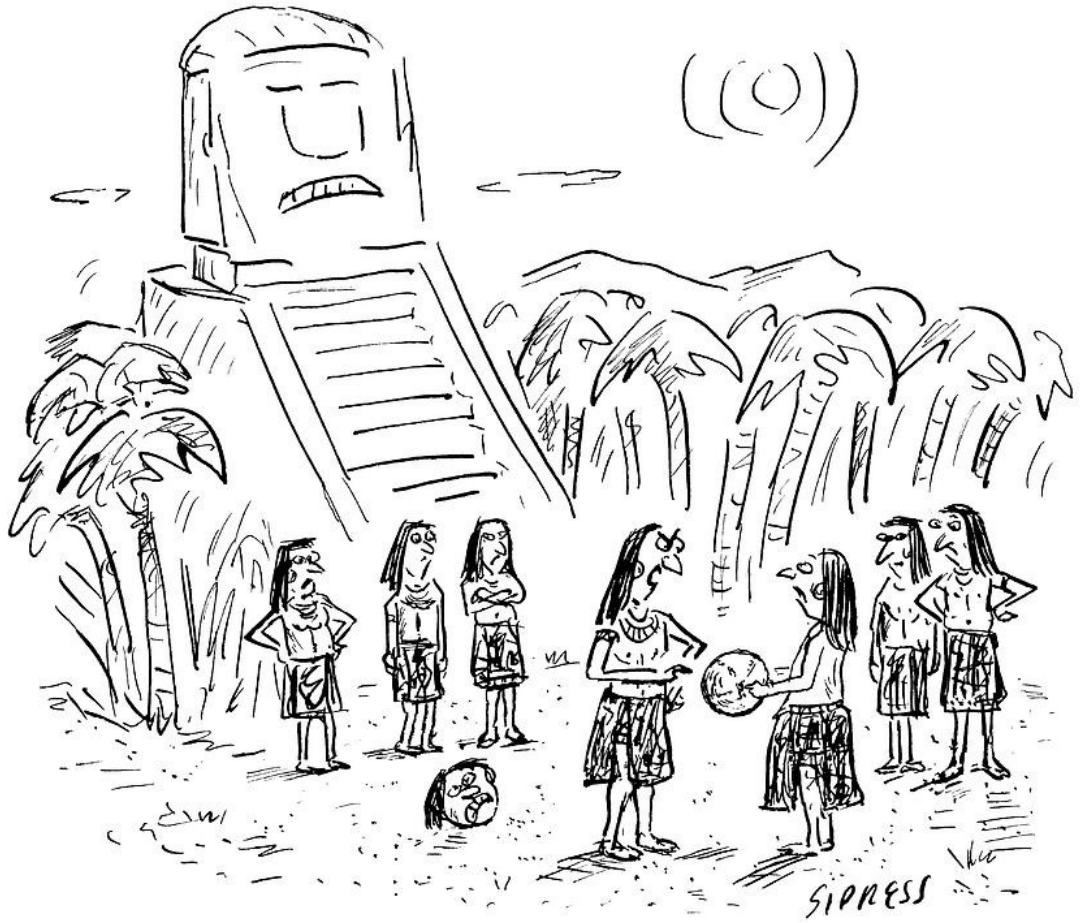
While Turnitin encourages instructors to collaborate and work together with paper view requests, you are under no obligation to respond.

You may receive a paper view request years after the initial date of your class. As such, we recommend you check your institution's privacy policy before responding to the email.

Perspectives to highlight

- Dawson policies
- Student perspective
- Turnitin algorithm
- Scholarly debate

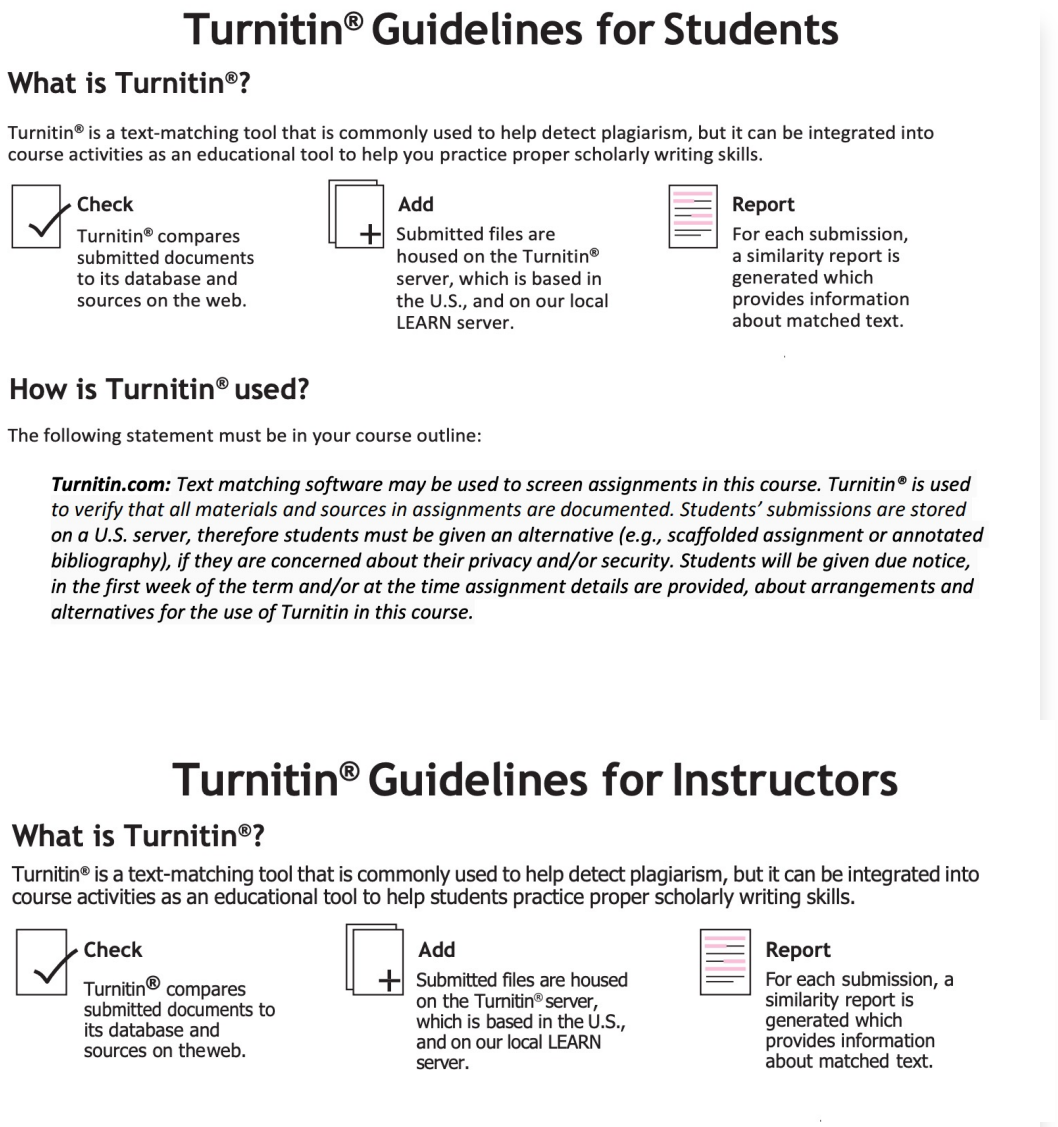
How to integrate different points of view when addressing issues of academic integrity?



"I don't care if it's more bouncy—it threatens the integrity of the game."

What can be learned?

- There are always grey areas
- Policies need to adapt and be updated often
- Better guidelines needed
- Consistency in policies across institutions



Turnitin® Guidelines for Students

What is Turnitin®?

Turnitin® is a text-matching tool that is commonly used to help detect plagiarism, but it can be integrated into course activities as an educational tool to help you practice proper scholarly writing skills.

Check
Turnitin® compares submitted documents to its database and sources on the web.

Add
Submitted files are housed on the Turnitin® server, which is based in the U.S., and on our local LEARN server.

Report
For each submission, a similarity report is generated which provides information about matched text.

How is Turnitin® used?

The following statement must be in your course outline:

Turnitin.com: *Text matching software may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.*

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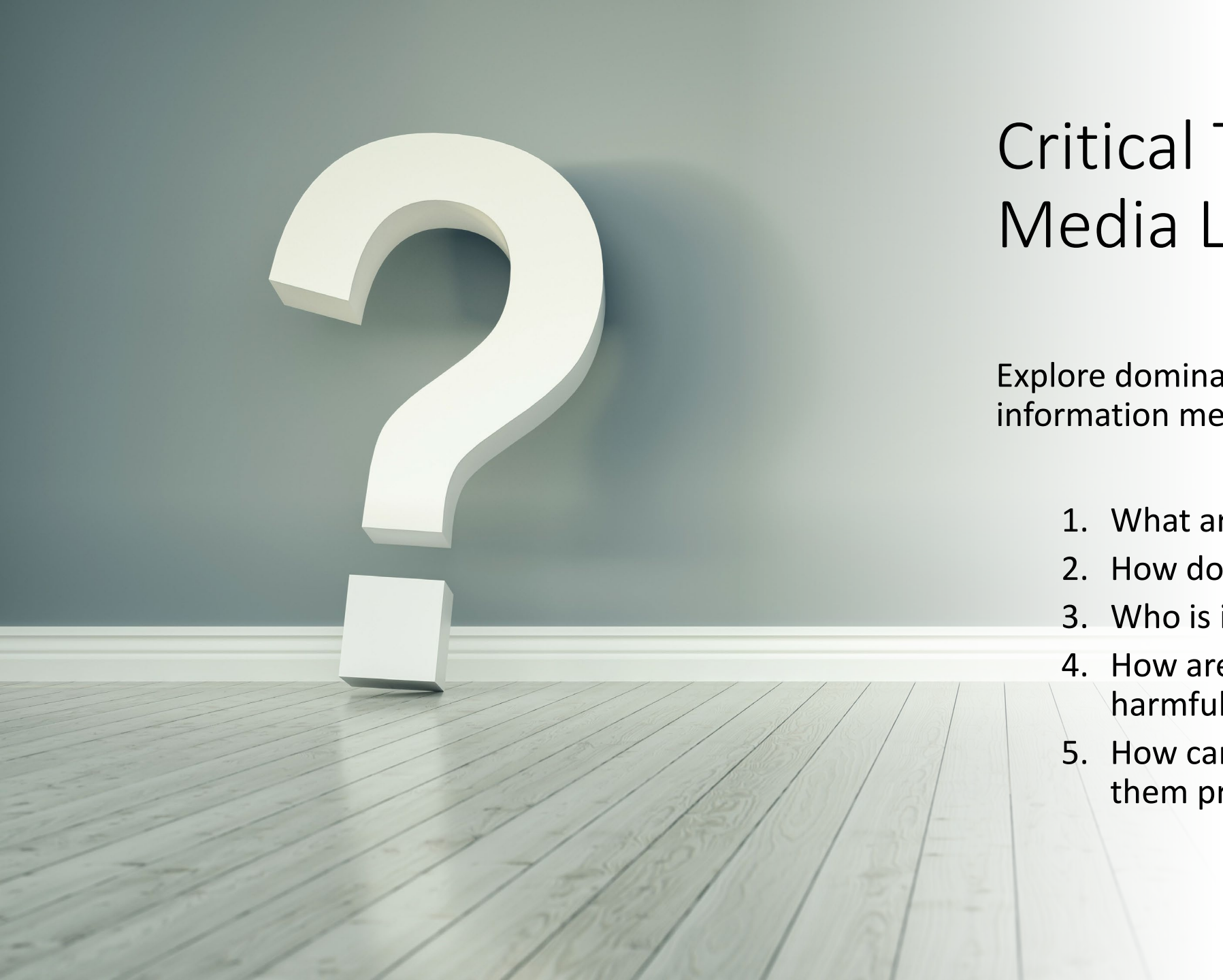
AI and Social Media Literacy

Addiction by Design?



Critical Thinking and Media Literacy

Explore dominant communication and information media

1. What are they?
2. How do they work?
3. Who is in control?
4. How are they beneficial and/or harmful?
5. How can we use and regulate them properly?

Social Media: What is it?

- Virtual socializing
- Entertainment
- News and information
- Advertising

Goals?:

- Social connection
- Profits

Social Media: How does it work?

- Lack of transparency
- Surface:
  - Personalized feed (“intimacy of design”)
  - User preferences and community
- Depth:
  - AI-powered data collection
  - algorithms optimizing user engagement for business profits

Addiction by Design?

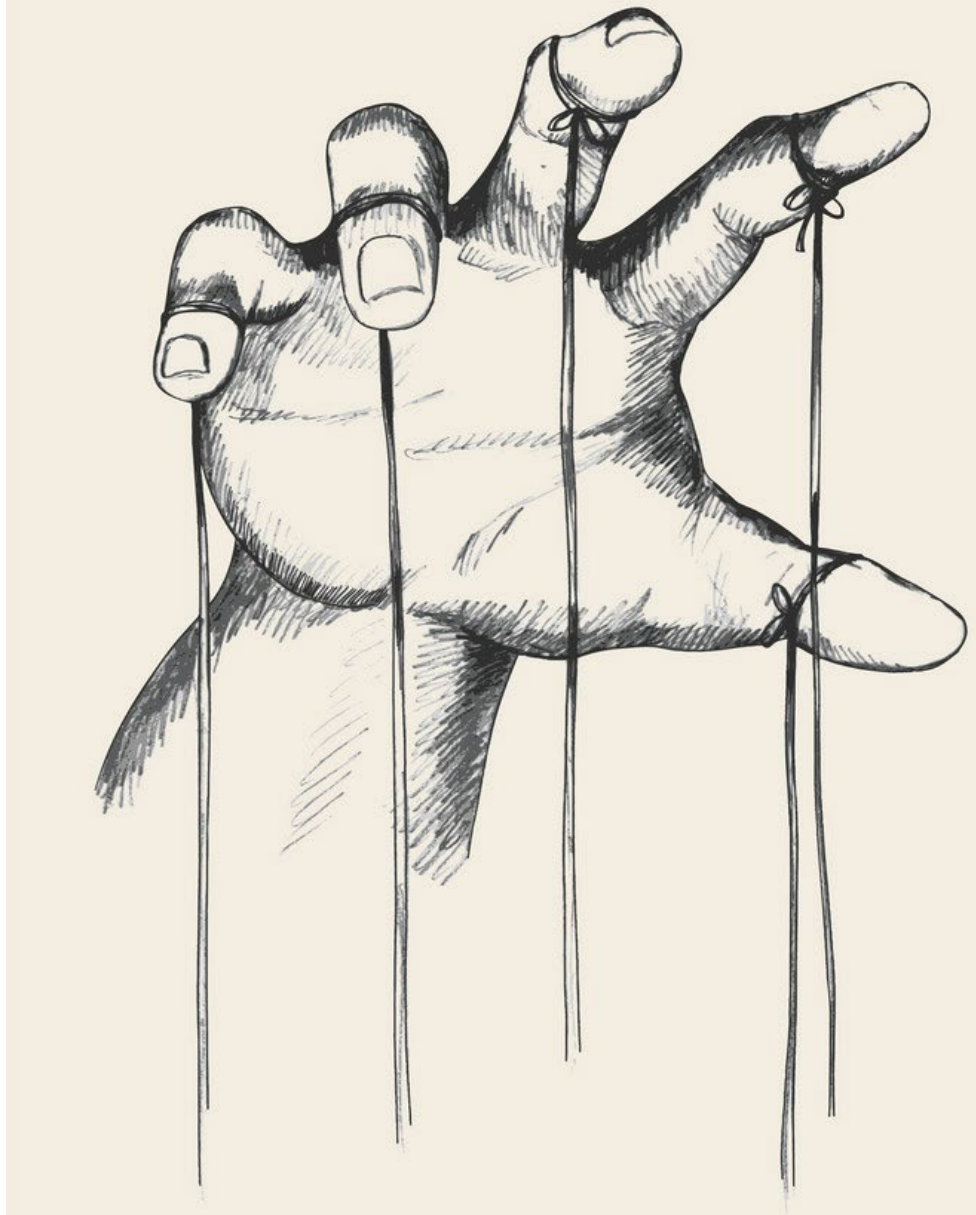
- **persuasive technology**
  - “interactive computing systems designed to change peoples’ attitudes and behaviour” (Fogg 1)
  - “technology created specifically to change its users’ opinions, attitudes, or behaviors to meet its goals” (*Center for Humane Technology*)
  - primary goal: increase user engagement for profits
- **marketing and behavioural science techniques**
  - operant conditioning to create “compulsion loop” through variable rate reinforcement (Deibert 98 - 99)
  - real-time repetitive A/B testing (Deibert 102)

Should we be worried?

1. Do the goals of social media companies align with the goals of their users?
2. What about the ethical dimension of persuasive technology?
   - good for the users?
   - good for society?
3. Where do we draw the line between persuasion and manipulation?
   - balance of power?

Social Media: Who is in control?

- Users?
- A handful of Big Tech executives?
- AI?
  - No conscious agency of AI (yet)
  - Algorithms with unintended consequences
  - Power beyond human capacity to fully grasp
- Government oversight?



RESOURCES

- *Center for Humane Technology*
  - *The Social Dilemma* (documentary)
  - *Your Undivided Attention* (pod cast)
  - Toolkits
- Deibert, Ronald J. *Reset. Reclaiming the Internet for Civil Society*
- Fogg, B. J. *Persuasive Technology*
- boyd, danah. *It's Complicated. The Social Lives of Networked Teens*.