

AI and Ethics in Higher Education

Michelle S. Appel

Michele J. Hansen

Institutional Research Officers Meeting

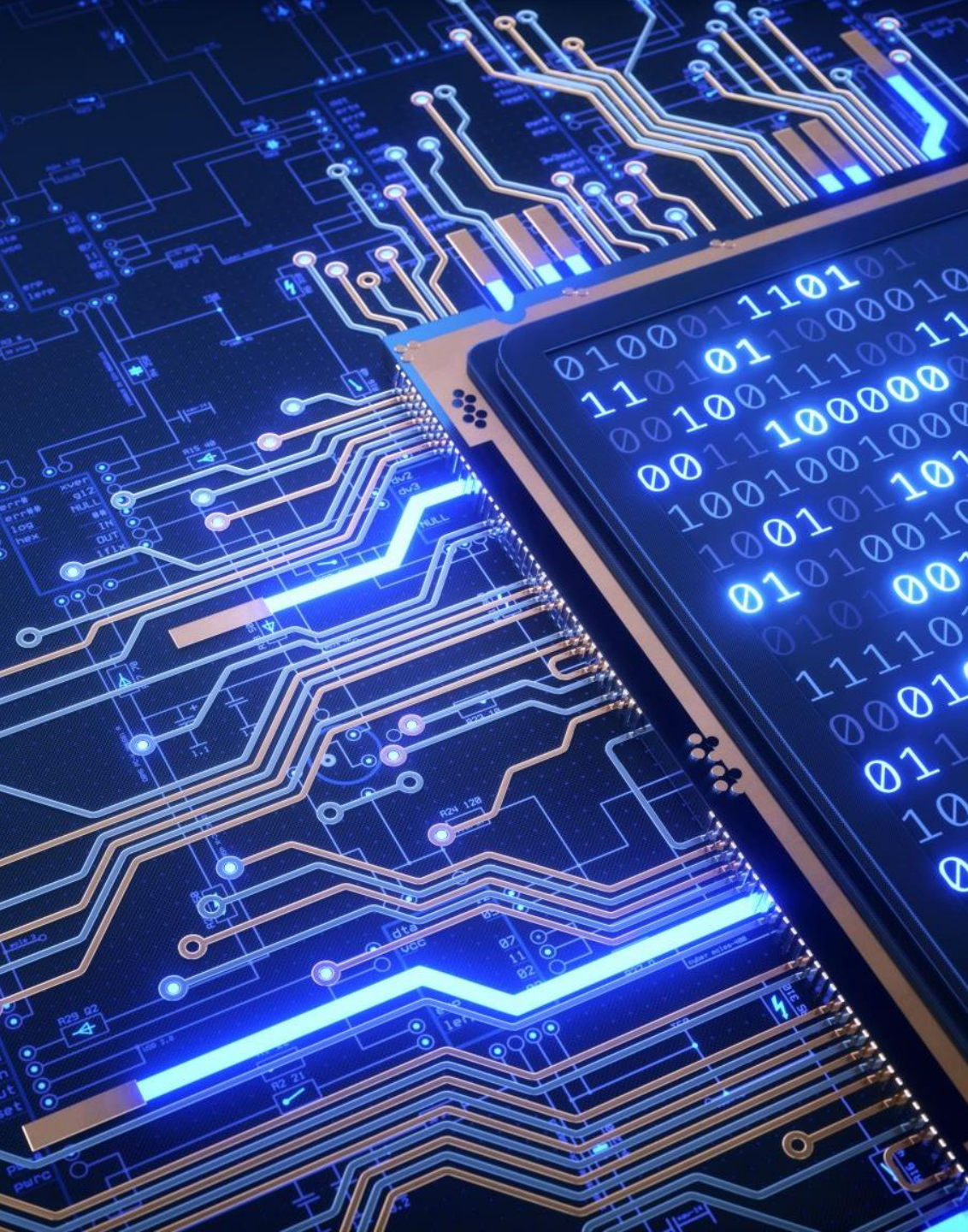
October 25, 2023





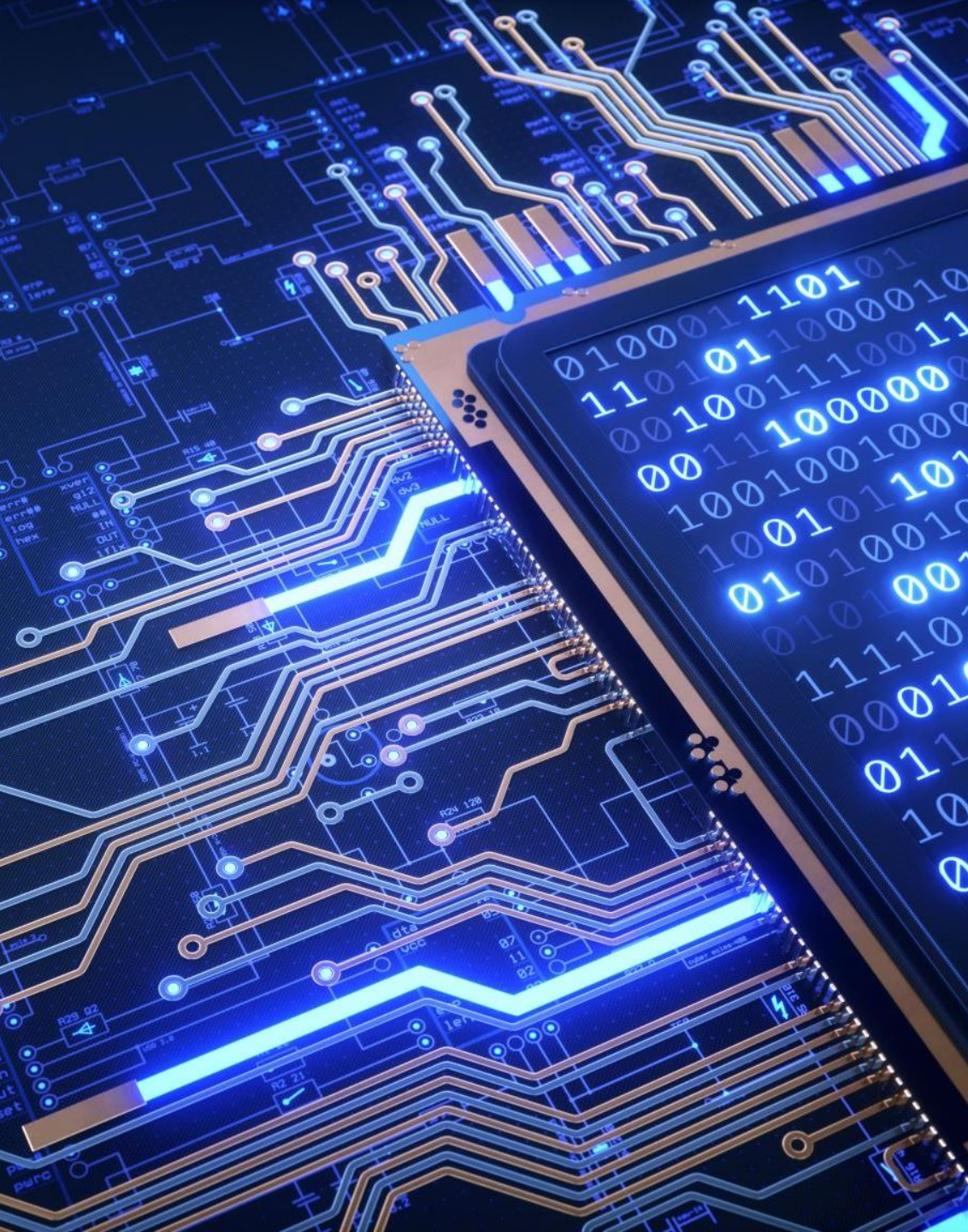
Overview

- AI and Higher Education Environmental Scan
- AI in IR
- Ethical Considerations
 - AIR Statement of Ethical Principles
 - Do No Harm
- Discussion of the role of AI in IR



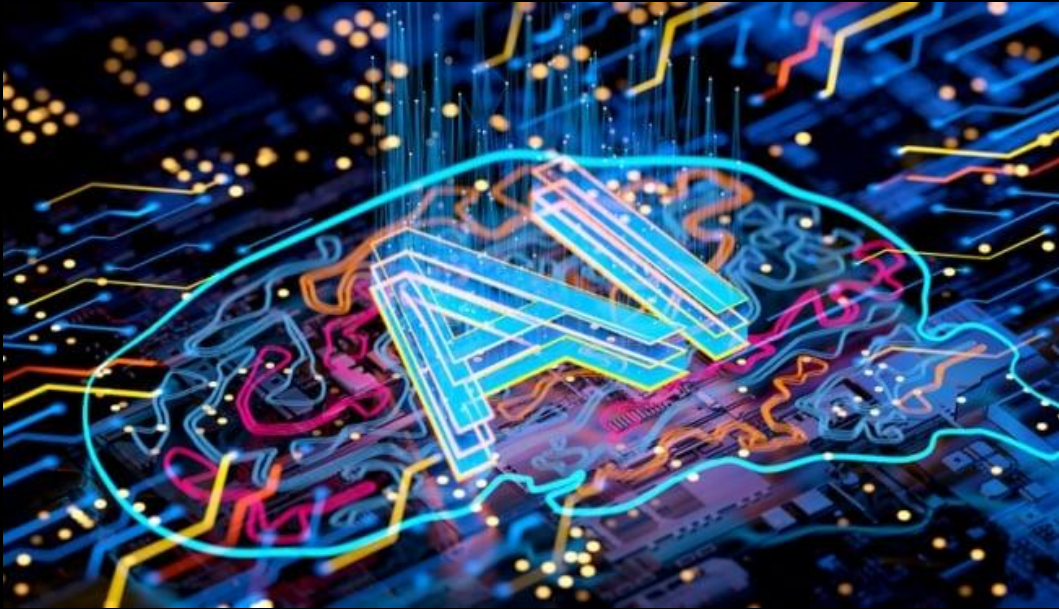
Definitions

- **Intelligence** might be defined as the ability to learn and perform suitable techniques to solve problems and achieve goals, appropriate to the context in an uncertain, ever-varying world. A fully pre-programmed factory robot is flexible, accurate, and consistent but not intelligent.
- **Artificial Intelligence (AI)**, a term coined by emeritus Stanford Professor John McCarthy in 1955, was defined by him as “the science and engineering of making intelligent machines”. Much research has humans program machines to behave in a clever way, like playing chess, but, today, we emphasize machines that can learn, at least somewhat like human beings do.
 - Stanford University Human –Centered Artificial Intelligence
- **AI** is “a machine’s ability to perform the cognitive functions we associate with human minds, such as perceiving, reasoning, learning, interacting with an environment, problem solving, and even exercising creativity. “
 - McKinsey and Company



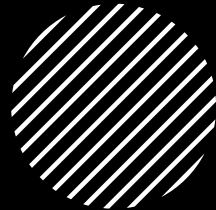
Definitions

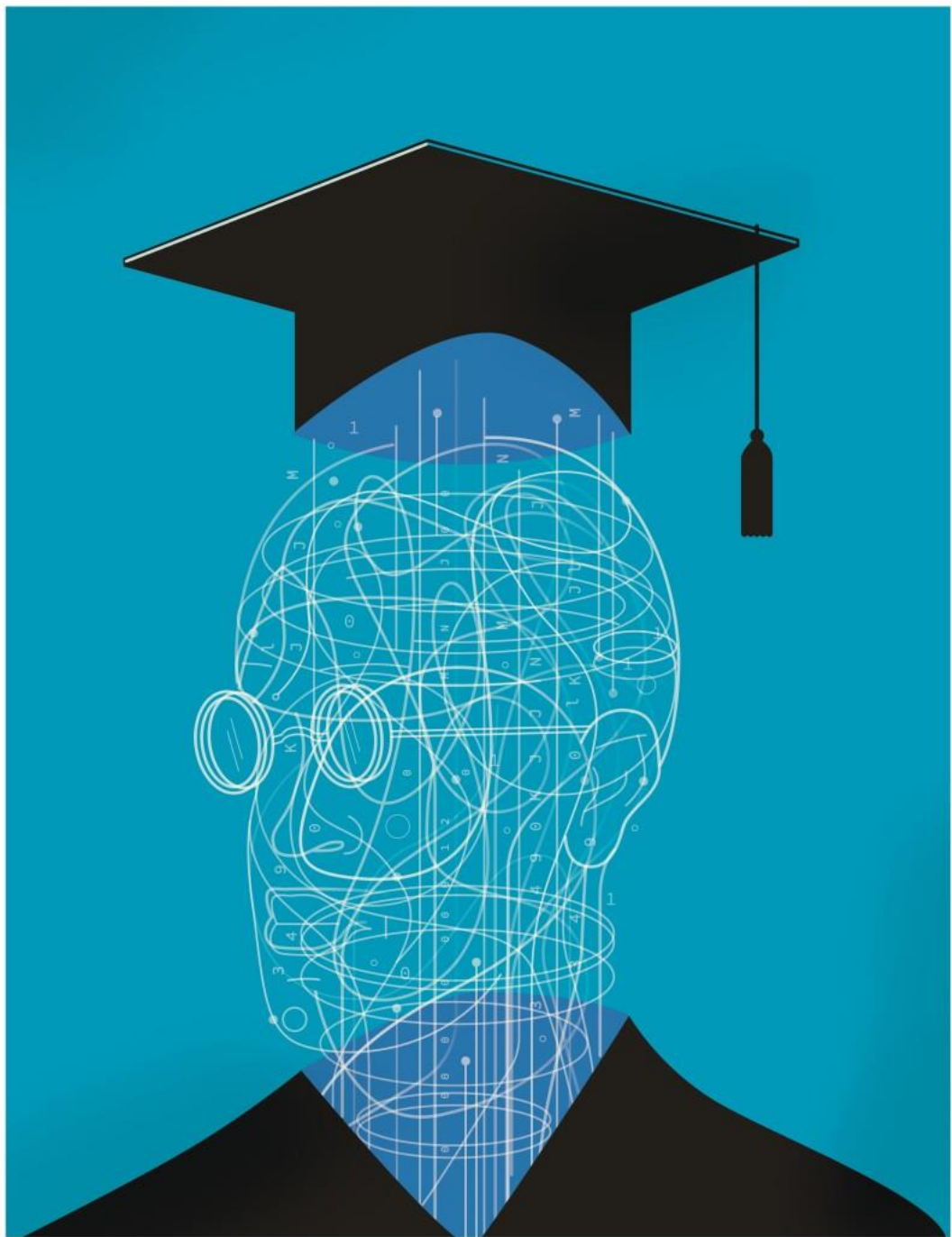
- **Generative artificial intelligence (AI)** describes algorithms (such as ChatGPT) that can be used to create new content, including audio, code, images, text, simulations, and videos. Recent breakthroughs in the field have the potential to drastically change the way we approach content creation. The practice of getting machines to mimic human intelligence to perform tasks.
- **Machine learning** is a type of artificial intelligence. Through machine learning, practitioners develop artificial intelligence through models that can “learn” from data patterns without human direction. The unmanageably huge volume and complexity of data (unmanageable by humans) that is now being generated has increased the potential of machine learning, as well as the need for it.
 - McKinsey and Company
- **Artificial intelligence (AI) and machine learning** are often used interchangeably, but machine learning is a subset of the broader category of AI. Put in context, artificial intelligence refers to the general ability of computers to emulate human thought and perform tasks in real-world environments, while machine learning refers to the technologies and algorithms that enable systems to identify patterns, make decisions, and improve themselves through experience and data.
 - Columbia Engineering



“Artificial intelligence is emerging as one of the most powerful agents of change in higher education, presenting the sector with unprecedented academic, ethical and legal challenges. Through its algorithmic ability to adapt, self-correct and learn, AI is pushing the boundaries of human intelligence, making the future of higher education inextricably intertwined with AI.”

M’hammed Abdous





“The release of ChatGPT suggests that we’re at the dawn of an era marked by rapid advances in artificial intelligence, with far-reaching consequences for nearly every facet of society, including higher education. From admissions to assessment, academic integrity to scholarly research, university operations to disappearing jobs...”

<https://www.insidehighered.com/views/2023/03/22/hohttps://www.chronicle.com/article/how-will-artificial-intelligence-change-higher-edw-ai-shaping-future-higher-ed-opinion>

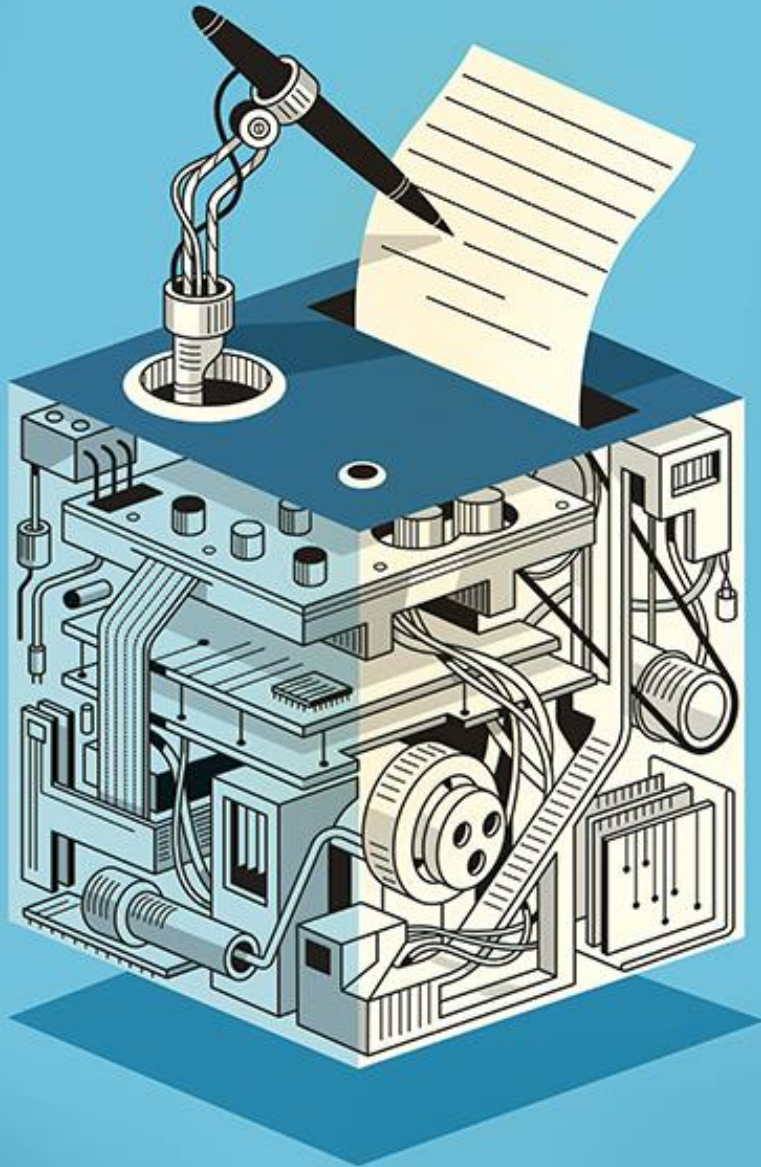
AI Buzz Dominates Annual Ed-Tech Conference

(Inside Higher Ed Headline October 12, 2023)

- “Speakers and attendees at Educause expressed cautious optimism about the early days of artificial intelligence in higher ed.”



How Will AI Change Higher Education?



- AI will help control costs – admissions and student services will be affected first.
- AI will liberate labor- any types of work could be taken over by machines and jobs could vanish
- The professional distinction between teachers (who transfer information) and scholars (focused on knowledge production) will become more stark.
- Methods of organizing and systematizing information are becoming more important. Catalogs, canons, and curated lists will become more valuable.
- The textbook industry should be worried.
- Higher education will be less about ensuring students know what they've read and more about ensuring they read what is not yet known by AI.
- The written essay will no longer be the default for student assessment.
- At the time of this writing, AI writing is technically proficient but culturally evacuated.
- Until culturally inflected AI is developed, models such as ChatGPT will stand apart from culture. Knowledge production within culture will not fully be absorbed by AI.
- Specific and local cultural knowledge will become more valuable.
- Experiential learning will become the norm. Everyone will need an internship. Employers will want assurances that a new graduate can follow directions, complete tasks, demonstrate judgment.

Directly quoted from: <https://www.chronicle.com/article/how-will-artificial-intelligence-change-higher-ed-> and

17 notes on Academic AI the ground is shifting under our feet Hollis Robbins

AI in Higher Education Landscape Uses

- **Administrative Support**

- crunch data on recruitment/admissions, aid decision making, assess productivity and performance

- **Teaching Support**

- adaptive assessments, personalized tutoring, generate context, resolve accessibility issues

- **Learning support**

- self-service chats bots, flag at-risk students, recommend courses, predict student performance

- **Research Support**

- Shift through large datasets to identify patterns, recommend relevant articles, prepare manuscripts for publication



Group/Table Conversation



- How used at your institution?
- How benefitted or positive implications?
- What concerns or negative implications?

Potential Uses in Institutional Research and Effectiveness

- Data Cleaning
- Data Merging/Integrating diverse sources
- Data Analyses
- Qualitative/text analyses
- Writing team bios
- Office Communications/newsletters
- Helping users find answers to common questions



Who has
tried chat
GPT?

ChatGPT ●

Give me ideas

for a customer loyalty program in a
small bookstore

Get started

Log in

Sign up

 OpenAI

[Terms of use](#) | [Privacy policy](#)

How many have had ChatGPT write your bio?

Which of these was generated most recently?

Do you know enough about me to know if this is true?

The image displays two screenshots of a ChatGPT interface. The top screenshot shows a user asking, "Who is institutional researcher Michelle Appel". The AI response states that it does not have specific information about Michelle Appel as of September 2021 and suggests checking the relevant institution or department for the most up-to-date information. The bottom screenshot shows the same user query. The AI response provides a detailed biography of Michelle Appel, identifying her as an Institutional Researcher at the University of Maryland. It describes her role in collecting, analyzing, and interpreting data related to the university's academic and administrative operations. The response also mentions her 20+ years of experience in higher education and her degrees from Towson University and the University of Baltimore. Additionally, it notes her membership in the Association for Institutional Research (AIR).

Who is institutional researcher Michelle Appel

I do not have specific information about an individual named Michelle Appel who is an institutional researcher in my knowledge base up to September 2021. It's possible that she is a private individual or not widely recognized in publicly available sources up to that point. If you're looking for information about a specific person in this field, I would recommend checking with the relevant institution or department where she works or searching for her on their official website or professional profiles to obtain the most up-to-date information.

Send a message

Free Research Preview. ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT September 25 Version](#)

Who is Institutional Researcher Michelle Appel

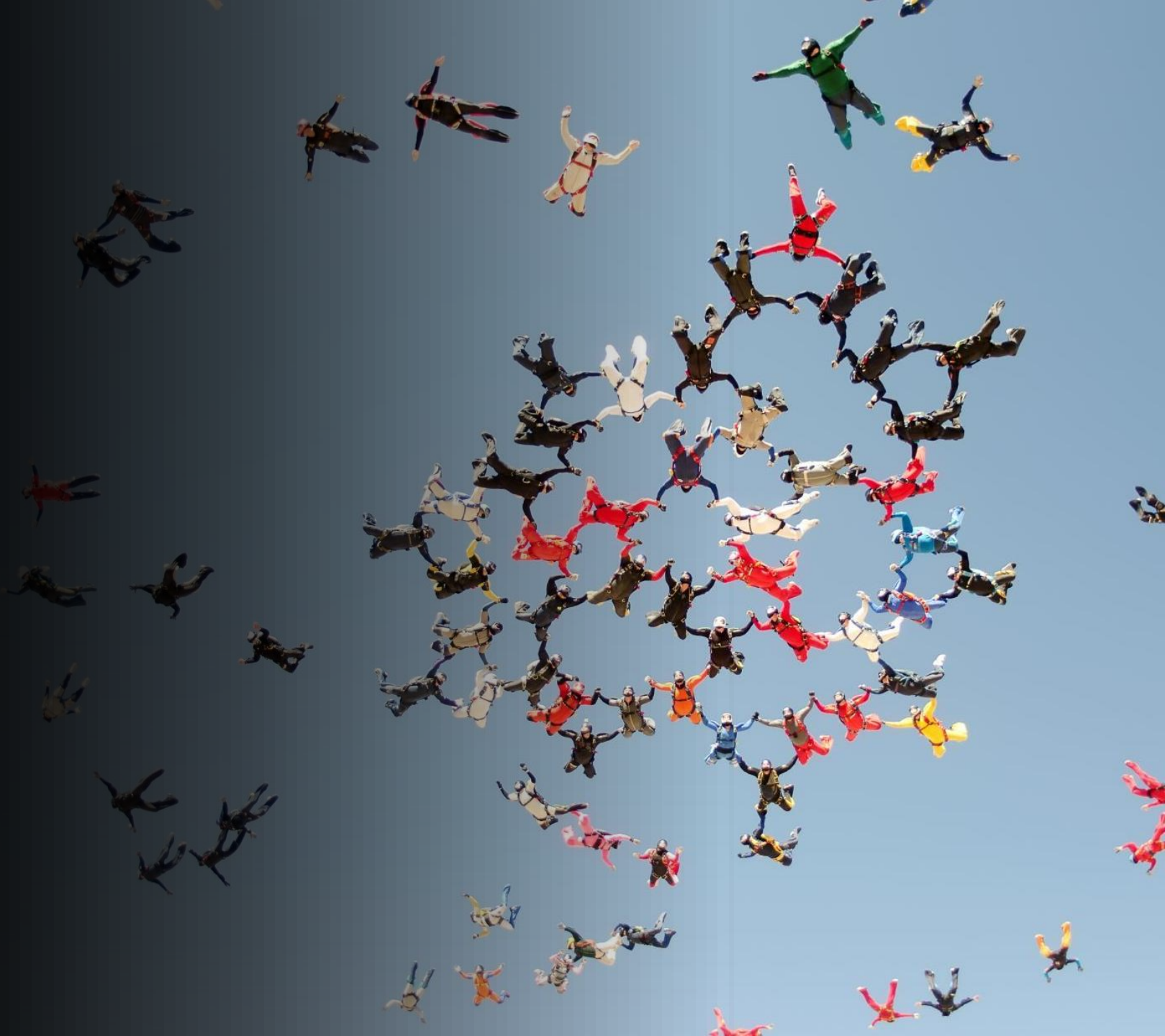
Michelle Appel is an Institutional Researcher at the University of Maryland. As an Institutional Researcher, she is responsible for collecting, analyzing, and interpreting data related to the University's academic and administrative operations. Her role involves working closely with university officials, faculty, and staff to provide data-driven insights that inform decision-making and help the institution achieve its strategic goals.

Ms. Appel has been working in higher education for over 20 years and has a wealth of experience in institutional research, assessment, and program evaluation. Prior to joining the University of Maryland, she worked at several other colleges and universities, including Towson University, the University of Massachusetts Dartmouth, and Bridgewater State College.

Ms. Appel holds a Bachelor of Science degree in Psychology from Towson University and a Master of Science degree in Applied Psychology from the University of Baltimore. She is also a member of the Association for Institutional Research (AIR), a professional organization for individuals working in the field of institutional research.

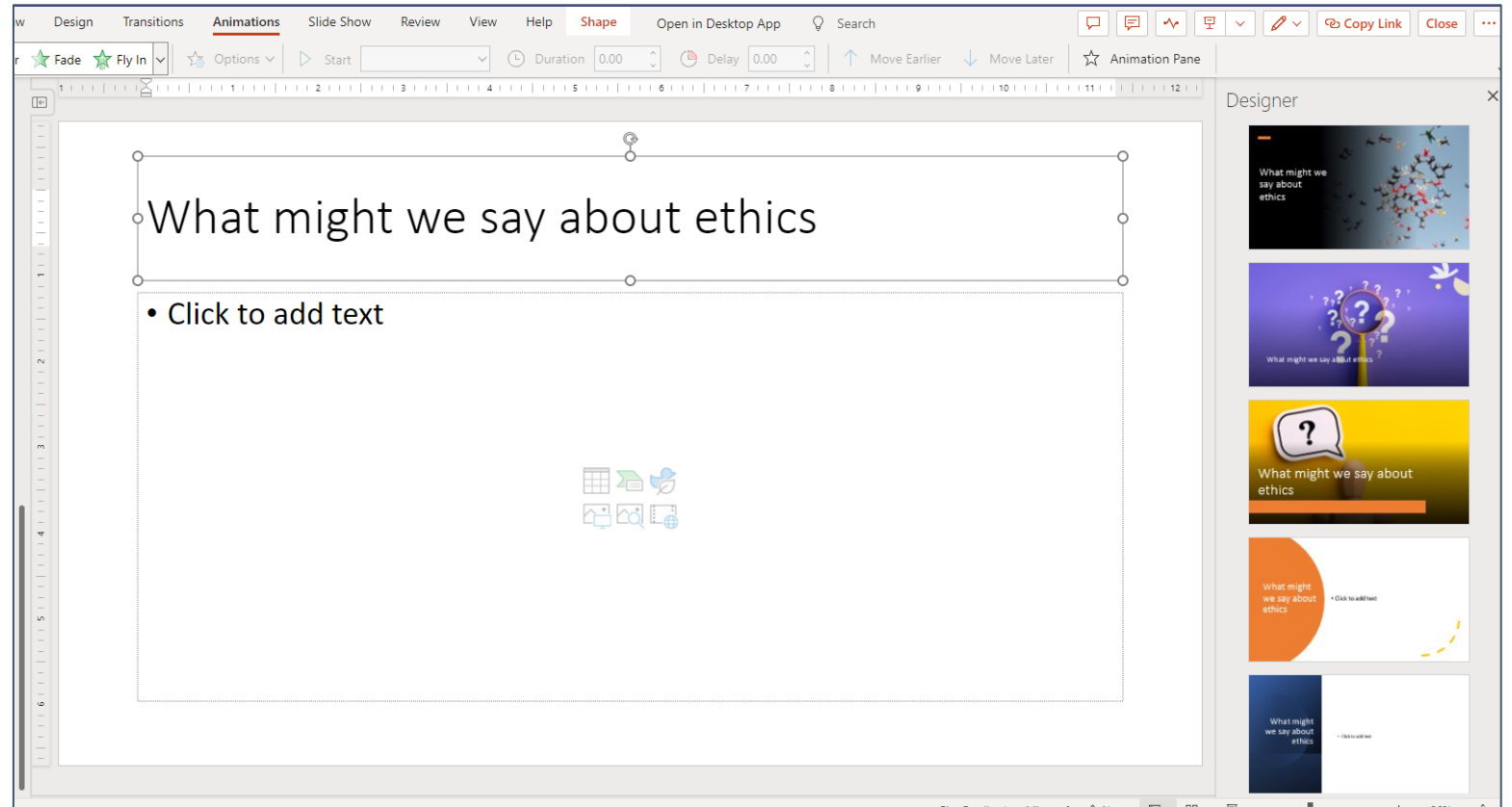


What might we
say about
ethics?



Expert systems
are everywhere

... so we need to be cognizant
of how what we are doing
impacts (or doesn't)
our results and its uses.



What might we say about ethics?

AIR Statement of Ethical Principles

The Association for Institutional Research affirms the following overarching principles regarding the use of data to facilitate insights and improve decision making. These principles guide us as we promote the use of data, analytics, information, and evidence to improve higher education.

We act with integrity:

We recognize the **consequences** of our work. The analytic algorithms and applications we build and/or implement, as well as the policy decisions incorporating information we analyze and disseminate, impact people and situations.

We acknowledge that the individuals whose information we use have **rights**, derived from both legal and ethical principles that can cross national borders. We make intentional efforts to protect their information from misuse or use that could cause them harm.

We protect **privacy** and maintain **confidentiality** when collecting, compiling, analyzing, and disseminating information.

We act as **responsible data stewards**. We secure the data and information over which we have control, following generally accepted guidelines and professional standards for physical and electronic security and data sharing.

We provide **accurate and contextualized** information. We do not knowingly or intentionally mislead the consumers of our information.

We deliver information and analyses **appropriate** to the questions being asked, to the quality of the data available, and to the context in which the questions are asked.

We seek to be **fair and transparent**, minimizing our own personal biases in our research assumptions, methodologies, and conclusions.

We avoid **conflicts of interest**, and disclose them when unavoidable, particularly with third parties and vendors. We act in the best interests of our institutions, students, and stakeholders.

We strive to make our work **accessible** to those who need data, information, and analysis to generate insight and make decisions.

We share **knowledge** of the Institutional Research field and its application so we may facilitate insights and promote common understanding to our institutions and stakeholders.

We value lifelong learning and the enhancement of our field. We draw on and contribute to relevant and emerging **scholarship** and educate ourselves on developing trends. We utilize those methods and techniques for which we have, or can obtain, appropriate knowledge and capabilities.

We recognize that technological advancements have and will continue to impact our work. We remain committed to serving as educators and role models on the ethical use of data to benefit students and institutions and to improve higher education.





Approved by the AIR Board of Directors September 13, 2019

Are we sure that the people whose data were used to train the model gave consent?

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Read our ongoing coverage of the Israel-Hamas war.

FROM ARTIFICIAL INTELLIGENCE

Are Learning to Smell  The New AI Panic  A Robot's Nightmare Is a Burrito Full of Guac  AI's Present Matters More Than Its Imagined Future 
KAREN HAO JACOB SWEET INIOLOWA DEBORAH RAJI

TECHNOLOGY

What I Found in a Database Meta Uses to Train Generative AI

Nobel-winning authors, *Dungeons and Dragons*, Christian literature, and erotica all serve as datapoints for the machine.

By Alex Reisner



May 26, 2023

Dear UMD Faculty and Staff,

As our community explores artificial intelligence (AI) and begins to adopt generative AI tools (such as [ChatGPT](#) or Google Bard), we encourage everyone to try out these tools and see how they can potentially enhance educational, research, and administrative activities at UMD. However, it is critical to recognize that these tools collect, store, and use data you provide—including presenting your content to other users. **Providing information to generative AI tools, including queries, writing samples, data sets, and source code, is the same as posting that information on a publicly available website.**

We encourage you to explore the potential of generative AI platforms for use in teaching, research, scholarship, and administration as long as no sensitive data are used. When considering what data to put into AI prompts, remember the two Ps. If the information is **Public** or you have explicit **Permission** from the person to use their data for that purpose, then it's OK to use it with AI tools.

Considerations for generative AI use

Some uses, such as asking an AI tool to summarize and grade a student essay submitted for a class assignment violates student privacy. Other examples of instructional data that are not appropriate for use with generative AI include student names and their grades. However, materials you have authored such as course notes or sample essays are fine to use with AI tools. It is also possible, if a student gives explicit permission, to use student-authored materials such as essays or source code with these tools, as long as students have been made


KATE KNIBBS CULTURE AUG 14, 2023 6:00 AM


Why the Great AI Backlash Came for a Tiny Startup You've Probably Never Heard Of

A literary analytics project called Prosecraft has shuttered after backlash from the writing community. It's a harbinger of a bigger cultural tide shift.



How accurate is it at analyzing facts?


 Using College Scorecard data, what conclusions can we draw about the University of Maryland?

 Using College Scorecard data for the University of Maryland, we can draw the following conclusions:

- Graduation rate: The graduation rate for the University of Maryland is 84%, which is higher than the national average for similar institutions. This suggests that the majority of students who enroll at the University of Maryland are able to successfully complete their studies.
- Median earnings of graduates: The median earnings of graduates from the University of Maryland are \$57,900, which is higher than the national average for similar institutions. This suggests that graduates from the University of Maryland may be well-positioned in the job market and earning good salaries.
- Loan default rate: The loan default rate for the University of Maryland is 3.5%, which is lower than the national average for similar institutions. This suggests that the majority of students who borrow money to attend the University of Maryland are able to repay their loans.
- Affordability: The College Scorecard data also provides information on the net price of attendance, which is the cost of attendance minus grants and scholarships. The net price of attendance for the University of Maryland is \$19,336, which is higher than the national average for similar institutions.

It's important to note that the College Scorecard data only includes information on students who received federal financial aid and it may not accurately reflect the overall student population. Additionally, the data does not take into account all factors that may influence student outcomes, such as academic preparation, family background, or student engagement and motivation.

[Regenerate](#)

 U.S. DEPARTMENT OF EDUCATION
College Scorecard

More Filters [Close filters](#)

Academic Fields [Start typing to search](#)

Degree Types

- Undergraduate
 - Certificate
 - Associate's Degree
 - Bachelor's Degree
- Graduate
 - Master's Degree
 - Post-baccalaureate Certificate
 - Doctoral Degree
 - First Professional Degree
 - Graduate/Professional Certificate


Graduation Rate

Average Annual Cost





Test Scores

1 Results

[Reset Filters](#) [Sort: % Earning More Than ...](#)

COLLEGE PARK, MD 

University of Maryland-College Park

Year Public Suburban Large

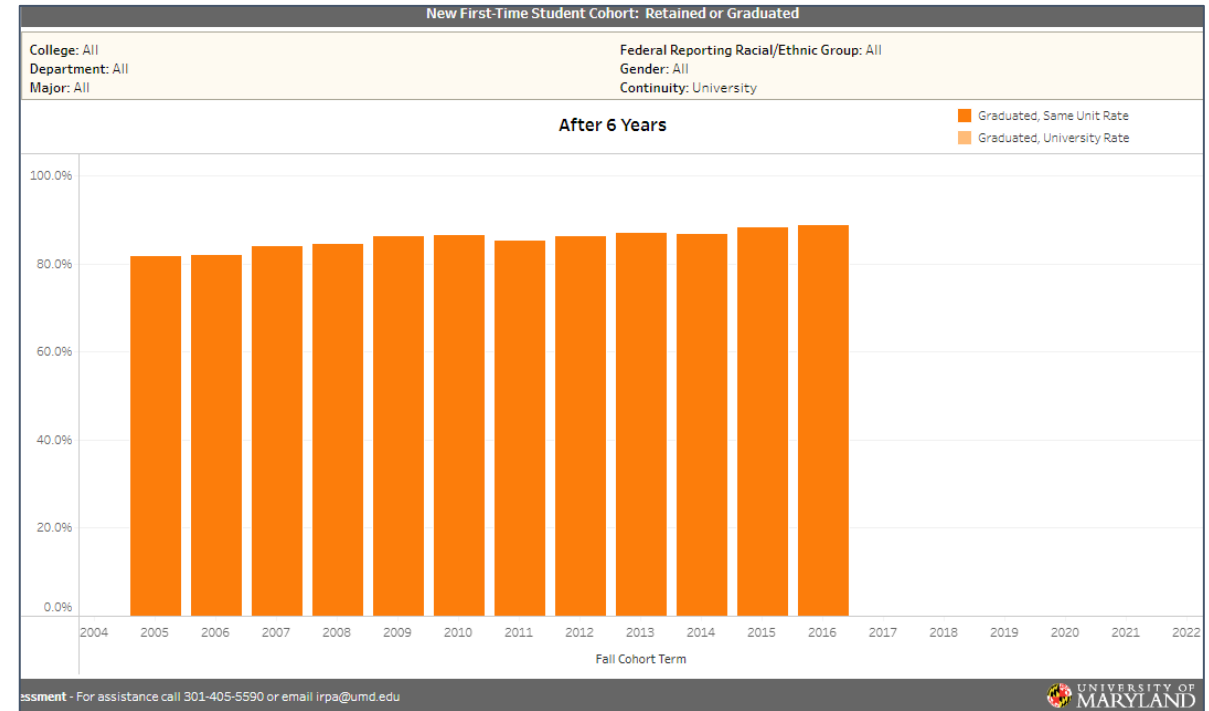
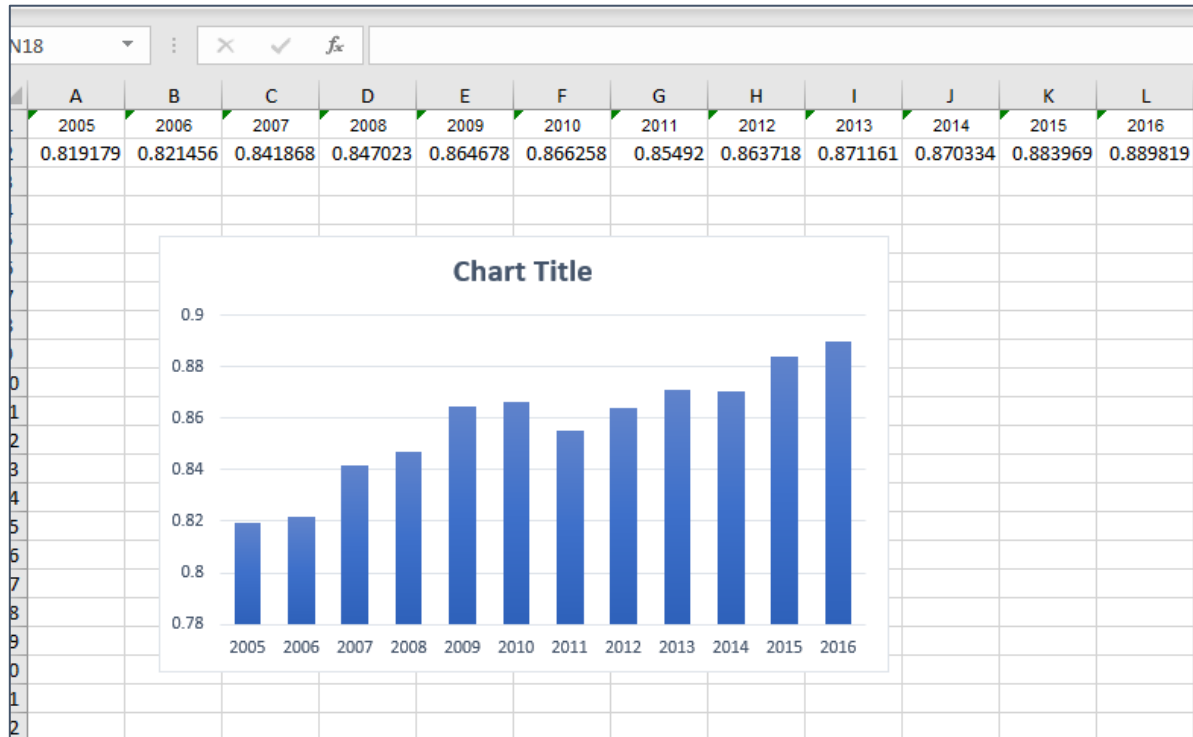
GRADUATION RATE ⓘ
82%

AVERAGE ANNUAL COST ⓘ
\$18k


MEDIAN EARNINGS ⓘ
\$77k

[View School](#)

Make sure not to mislead, even when accurate



Are the data of appropriate quality (and coverage) for the analysis?

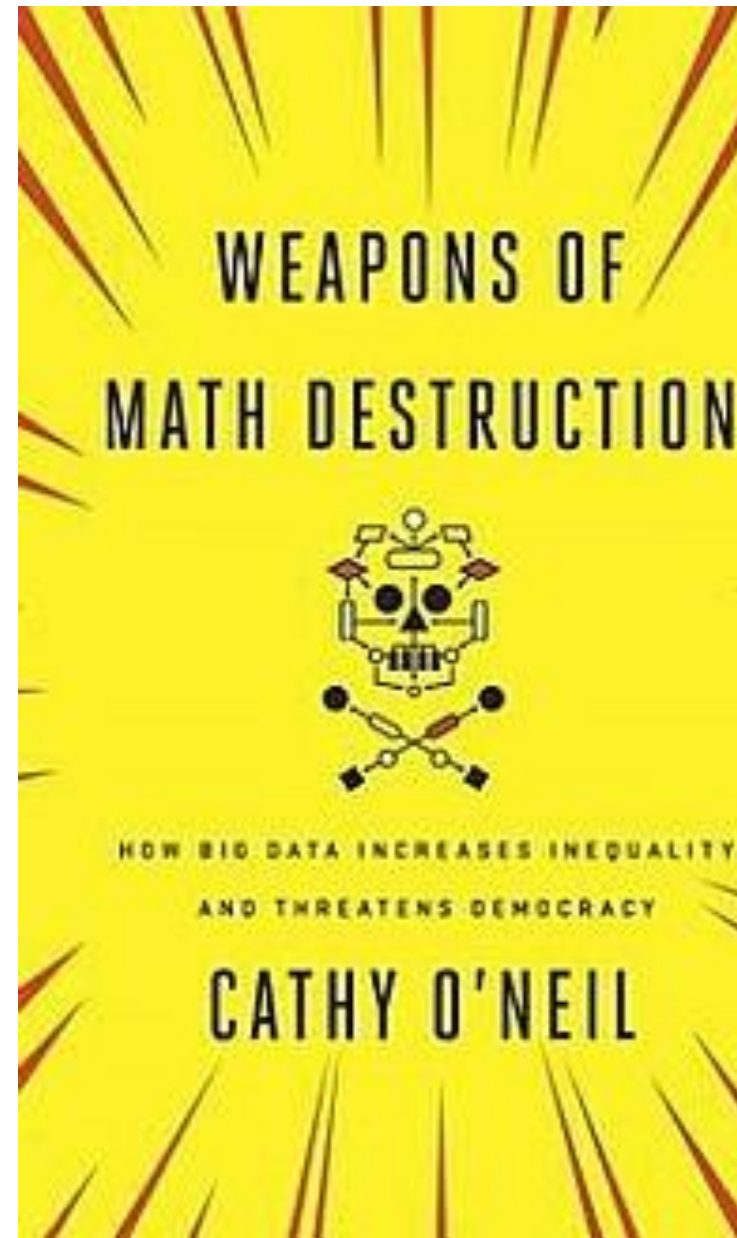
A woman with white-rimmed glasses and a red jacket is holding a white mask. She is standing in front of a sign that says "Gender" and "Male". The background is dark and blurry.

**TECHNOLOGY SHOULD
SERVE ALL OF US. NOT JUST
THE PRIVILEGED FEW.**

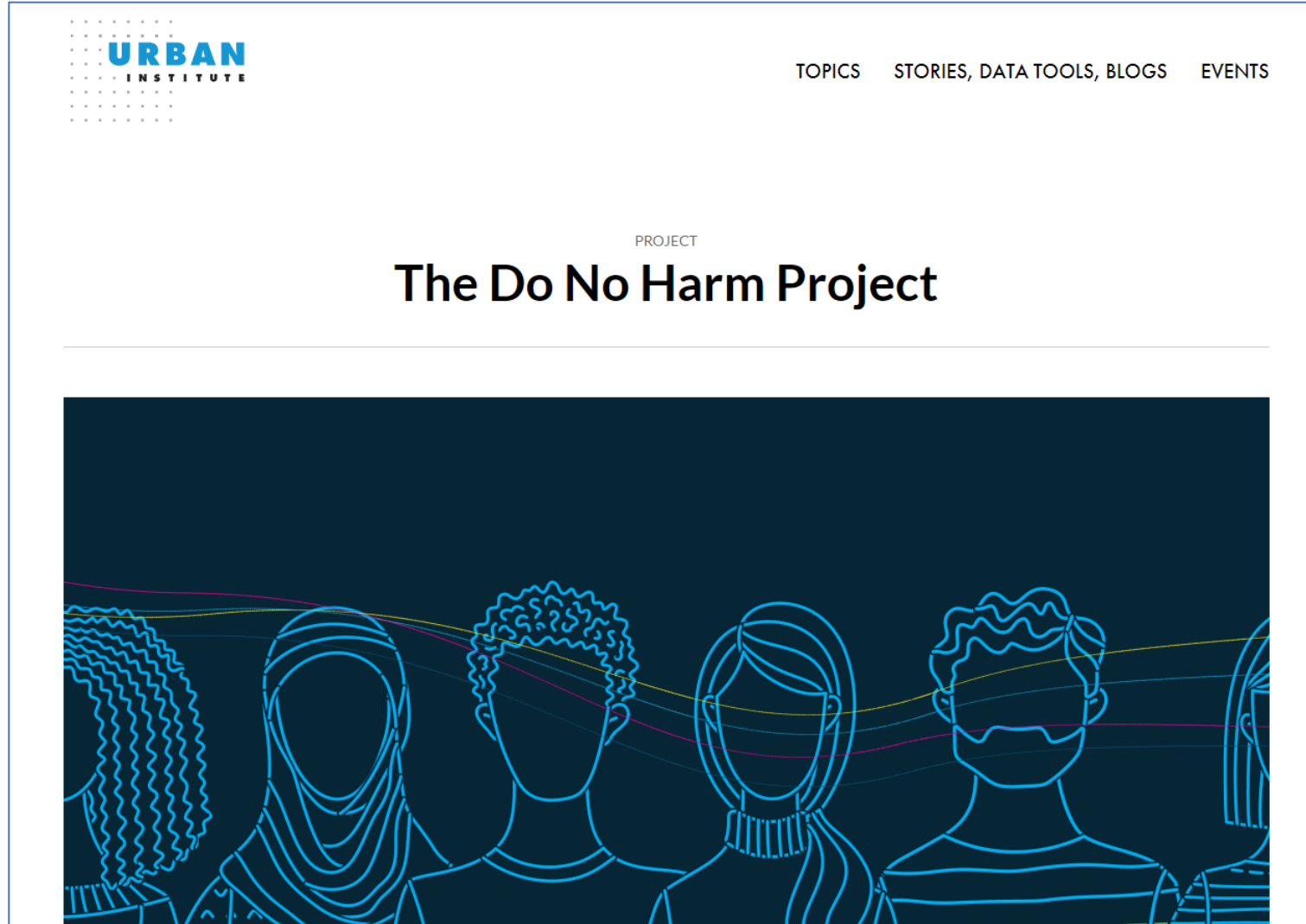
Join the Algorithmic Justice League in the movement towards equitable and accountable AI.

[JOIN THE MOVEMENT](#)

How
transparent
is the
algorithm?



Making sure we Do No Harm – a resource



<https://www.urban.org/projects/do-no-harm-project>

Group/Table Conversation



- How used in IR/IE office?
- How benefitted or positive implications?
- What concerns or negative implications?
- How would you like to use but have not done yet?



Final Thoughts?