



The Importance of Data Ethics

Wendy Martinez

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Fall Technical Conference 2021



We want to
hear your
voice

menti.com

🔒 menti.com



Mentimeter

Please enter the code

Submit

The code is found on the screen in front of you

What is your location right now?

Raleigh, NC

Haddonfield, NJ

San Antonio, TX

Fredericksburg Virginia

NC

Salt Lake City, Utah

Washington, DC

Schenectady, NY

VA

What is your location right now?

Brookville, Pennsylvania

Raleigh, NC

Tampa, FL

Pensacola, FL

Round Lake, IL

Tampa

Longmont CO

South Africa

Boston, MA



GETTING STARTED

WHAT IS IPUMS-CPS?

REGISTER WITH IPUMS

FAQ

VIDEO TUTORIALS

DATA

BROWSE AND SELECT DATA

DOWNLOAD OR REVISE EXTRACTS

ANALYZE DATA ONLINE

CURRENT POPULATION SURVEY DATA FOR SOCIAL, ECONOMIC AND HEALTH RESEARCH

IPUMS CPS harmonizes microdata from the monthly U.S. labor force survey, the Current Population Survey (CPS), covering the period 1962 to the present. Data include demographic information, rich employment data, program participation and supplemental data on topics such as fertility, tobacco use, volunteer activities, voter registration, computer and internet use, food security, and more.

USE IT FOR GOOD -- NEVER FOR EVIL

DATA RIGHTS AND WRONGS

What do we owe the data?

Extreme Events

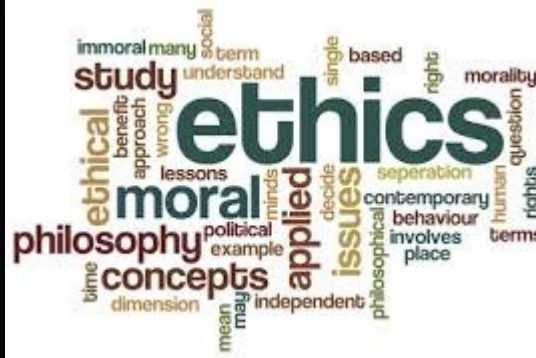
Disaster Response

Humanitarian Assistance

PROCEEDINGS OF A WORKSHOP

DATA MATTERS

Ethics, Data, and International Research Collaboration in a Changing World



Home About Peace-Work Data For Good Peace-Work Studies Blog www.peace-work.org f t in

Statisticians, Data Scientists, and others...



...using our analytic skills...

Data For Good

...on volunteer projects...

...to help people and a make better world

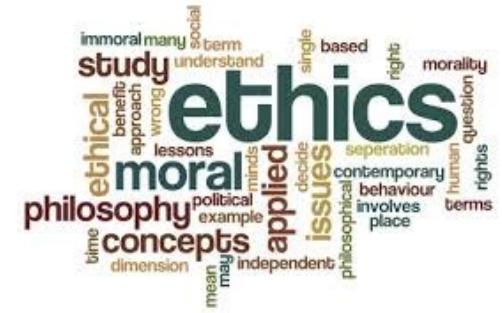


Stories and Issues

To get us thinking



Medical



Models developed to predict what patients might benefit from preventive medical care

Excluded race, but used future cost to health system to predict & rank

Cost is not race-neutral – minority patients have fewer costs than white patients with same conditions

- Less medical insurance
- Fewer options for care

Underestimates health needs of sickest minority patients

Mapping highest scores showed concentration in affluent suburbs

<https://www.nbcnews.com/news/nbcblk/racial-bias-found-widely-used-health-care-algorithm-n1076436>

<https://www.washingtonpost.com/health/2019/10/24/racial-bias-medical-algorithm-favors-white-patients-over-sicker-black-patients/>

Hiring



Amazon constructed experimental tools to score resumes – one to five stars

Realized ratings were not gender-neutral

Models were trained **using data from previous 10-year period** – reflecting male dominance in tech



<https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scrap-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G>

Criminal Justice

Glenn Rodriguez – flagged as “high risk” based on **trade secret algorithm** and refused parole

- Arrested at 16 and convicted of 2nd degree murder
- 26 years later ... 0 disciplinary actions
- 4 years trained service dogs for wounded veterans
- 11 years youth volunteer
- “Question 19”

Predictive policing software

- Focus on already hotspot areas
- Add police – increase in reports
- Resulting spike used as justification

<https://washingtonmonthly.com/magazine/junejulyaugust-2017/code-of-silence/>



Hiring



Face scanning algorithm analyses candidates' facial movements, word choice, speaking voice to assess

Gives them an employability score

Proprietary tool – **unable to ask machine** what they did wrong or how to improve

Company did not know how the algorithm worked

Training Data

What about **training data**?

Amazon Alexa and other smart speakers are common.

Conversations & sounds are recorded.

Humans listen, transcribe, and annotate to create training data.

What about cameras?

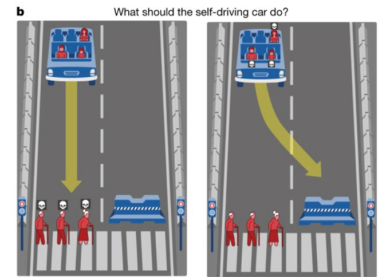
<https://www.bloomberg.com/news/articles/2019-04-10/is-anyone-listening-to-you-on-alexa-a-global-team-reviews-audio>



Driverless Cars

Autonomous vehicles - **what should vehicle algorithms do?**

- Assume accident is unavoidable
- Minimize damage to car?
- Save car passengers?
- Save pedestrians?



The Moral Machine

- <http://moralmachine.mit.edu/>

<https://www.nature.com/articles/d41586-018-07135-0>

<https://www.nature.com/articles/s41586-018-0637-6>

[/code-of-silence/](#)

Moral Machine

Thirteen (13) scenarios where someone would die

Mix of situations -

- Young or old
- Rich or poor
- More people or fewer

For the most part... regardless of age, gender or country most

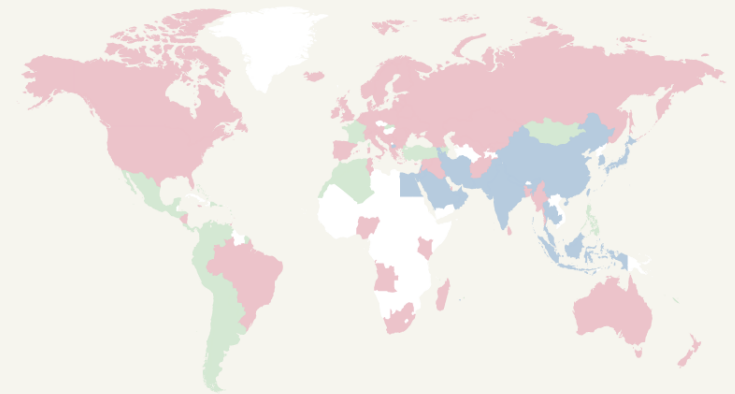
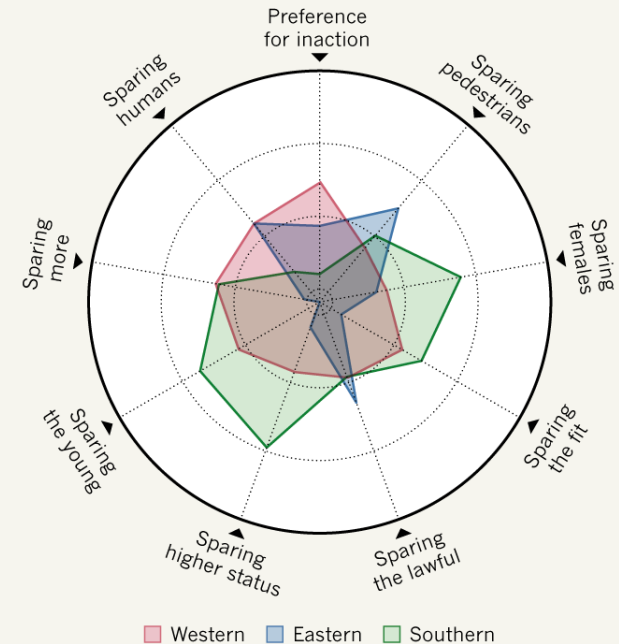
- Spared humans over pets
- Groups of people over individuals

<https://www.nature.com/articles/d41586-018-07135-0>

<https://www.nature.com/articles/s41586-018-0637-6>

MORAL COMPASS

A survey of 2.3 million people worldwide reveals variations in the moral principles that guide drivers' decisions. Respondents were presented with 13 scenarios, in which a collision that killed some combination of passengers and pedestrians was unavoidable, and asked to decide who they would spare. Scientists used these data to group countries and territories into three groups based on their moral attitudes.



©nature

Moral Machine

Western

- Preference for inaction
- No dips or major peaks

Eastern

- Sparing pedestrians
- Sparing the lawful
- Dip – young and fit

Southern

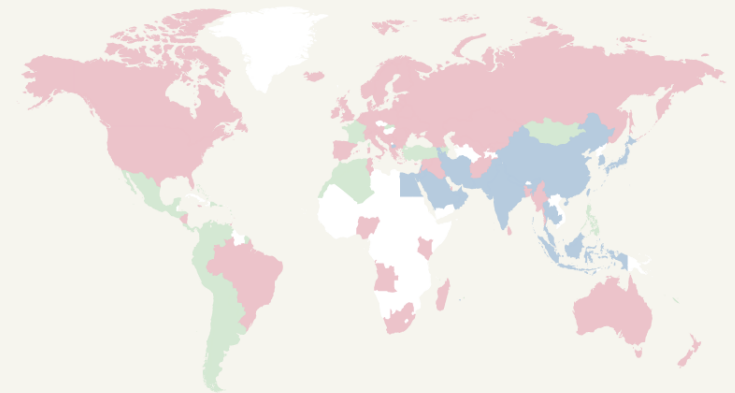
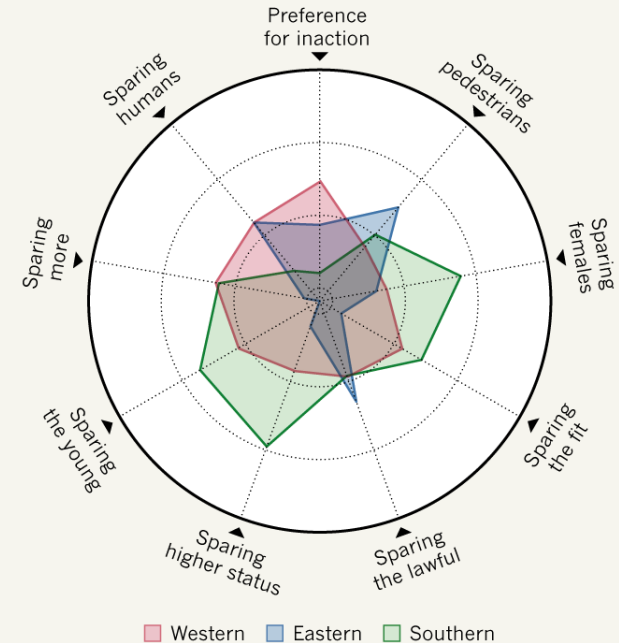
- Sparing females
- Spring the fit & young
- Sparing higher status
- Dip – inaction and lawful

<https://www.nature.com/articles/d41586-018-07135-0>

<https://www.nature.com/articles/s41586-018-0637-6>

MORAL COMPASS

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©nature

What would you do?

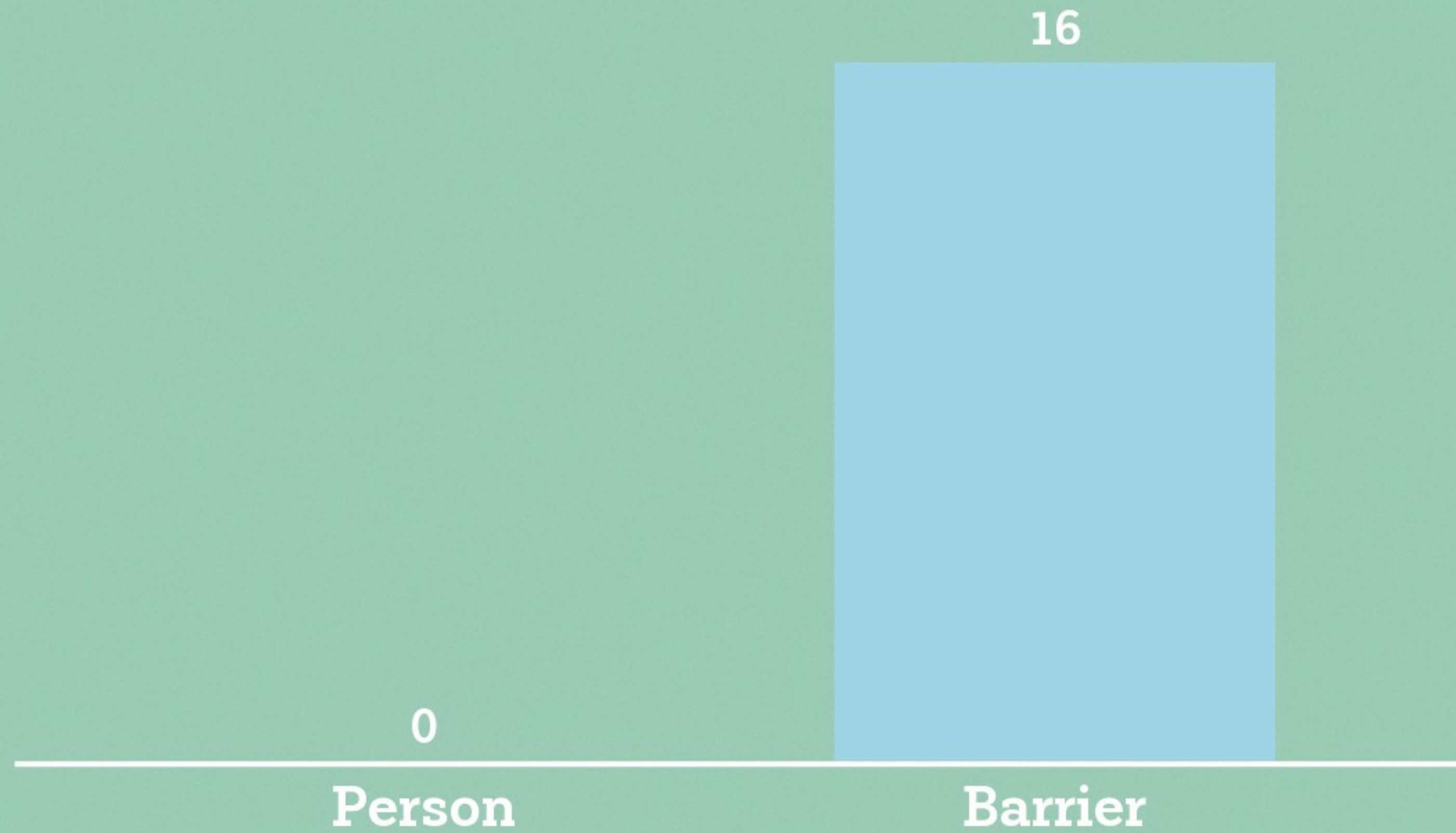
Given the previous scenario with a driverless car – what is your decision?

- Hit the people
- Hit the barrier

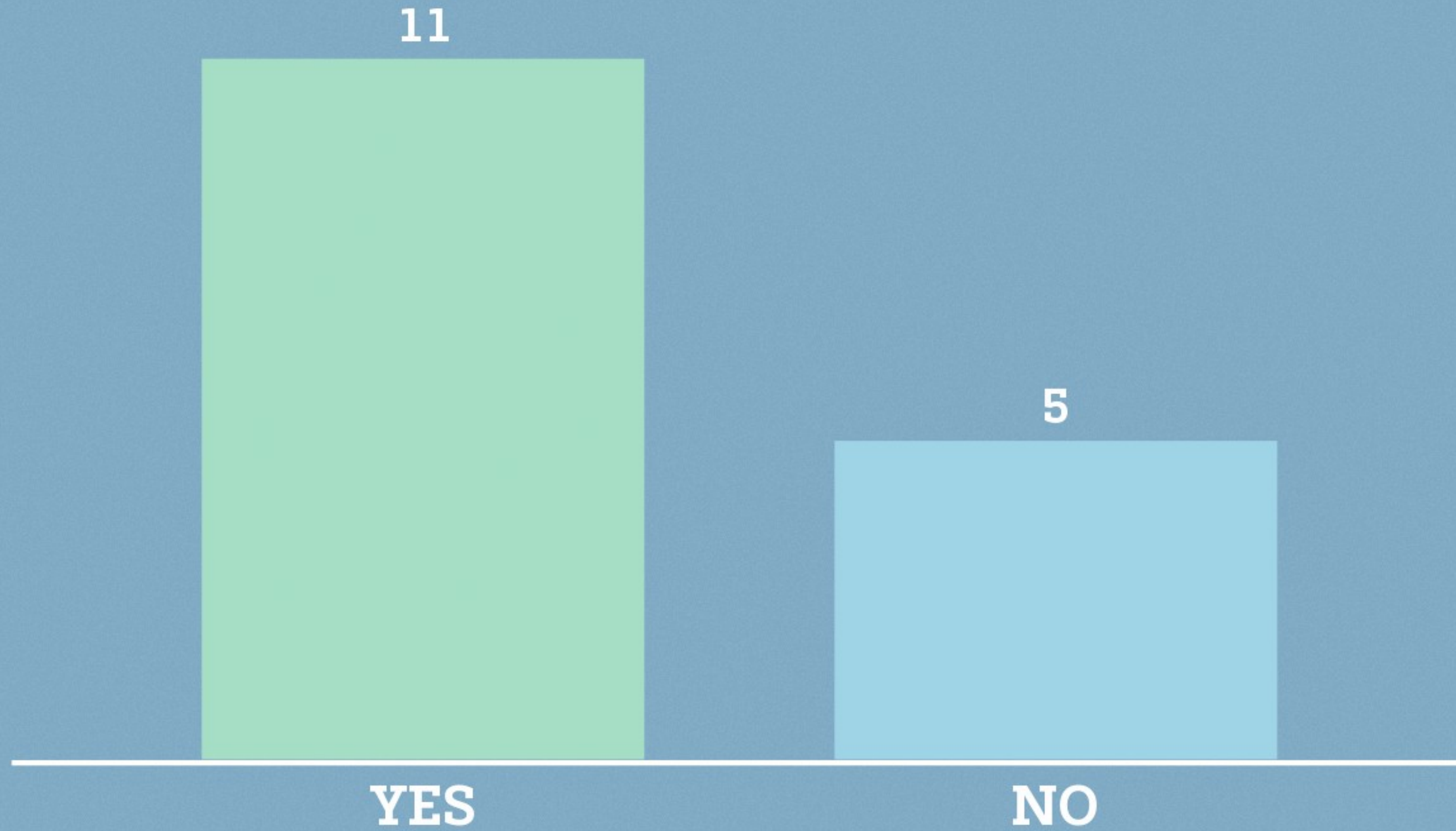
Would you ride in a driverless car?

Go to www.menti.com and enter the code.

What would you have a driverless car do - hit person or barrier?



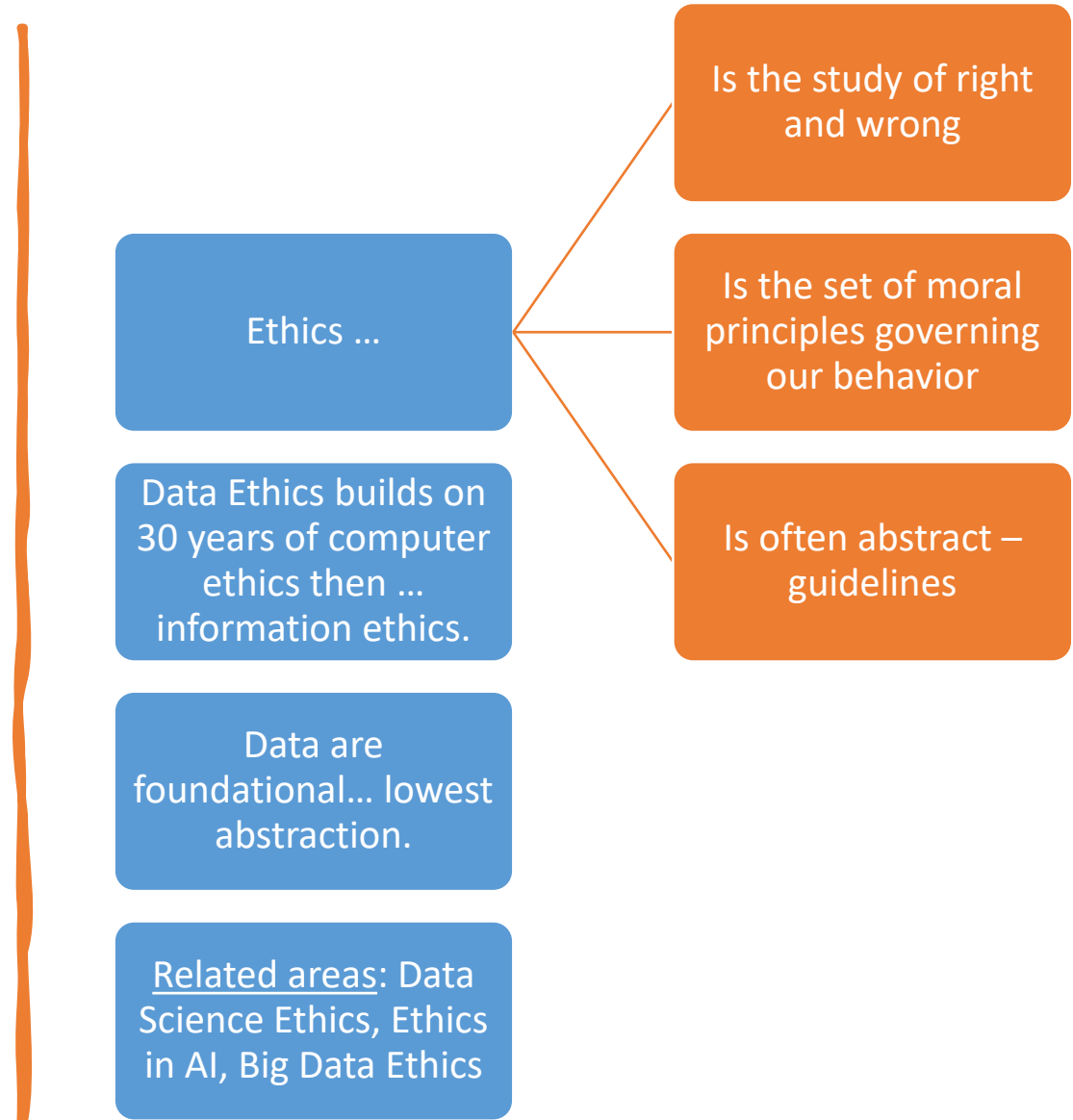
Would you ride in a driverless car?



What is data ethics?

So we have a common
understanding...

What is Data Ethics?



Three Axes of Data Ethics

Ethics of Data – Collection of large datasets

- Re-identification of individuals, Privacy
- Trust and transparency
- Web-scraping

Ethics of Algorithms – Increasing complexity and autonomy of algorithms (e.g., Internet of Things)

- Machine learning
- AI, robots

Ethics of Practices – Responsible innovation, R&D, usage – foster innovation and protect rights

- Informed consent, Confidentiality
- Hacking
- Secondary use – integration of data sets

<https://royalsocietypublishing.org/doi/full/10.1098/rsta.2016.0360>

<https://www.dataversity.net/what-are-data-ethics/>

Another definition ...

<https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework>

- From United Kingdom *Data Ethics Framework*:
 - ***Data ethics is an emerging branch of applied ethics which describes the value judgements and approaches we make when generating, analyzing and disseminating data.***
- Includes/requires
 - Knowledge of data protection law and legislation
 - Appropriate use of **technology**
- Holistic approach – good practices in **computing**, ethics and **information assurance**

Another definition ...

<http://raw.rutgers.edu/docs/wcars/38wcars/Presentations/Dan%20-%20Ethics%20for%20Big%20Data%20and%20Analytics.pdf>

- According to Daniel E. O'Leary, University of Southern California (Ethics for Big Data and Analytics, 2016):
*Big data ethics as the analysis of the nature and **societal impact of big data technology** and the corresponding formulation and of policies for ethical use of big data.*
- Discusses how big **data ethics differ from general ethics** and computer ethics
 - Different emerging codes of ethics
 - Lack of specificity in existing computer/general ethical frameworks

Another definition ...

<http://magnacartafordata.org/data-ethics-is-about-anticipation/>

- According to the Data Ethics Ireland Community:

*Data ethics, as the set of principles and methods through which the ethical implications of applications of data processing and analysis (Data Science) are considered and resolved... **It is about understanding complicated, hard to predict social phenomena emerging from complicated hardly understood technologies.***

- Ethical implications are potentially infinite.
- Awareness of ethical implications have to be **anticipatory – what if.**

Data ethics is in each step of the data product life cycle.



Funding



Motivation



Project
Design



Data Collection
& Sourcing



Analysis



Interpretation



Comu
& Dist

- <https://weallcount.com/the-data-process/>

How would
YOU define
data ethics?

Go to
www.menti.com
and use the
code.

What is your definition of data ethics?

Use the right data for the right reasons to make the right decisions

say what you will do with the data and then do only that.

Principles regarding the moral and social impacts surrounding data collection and analysis.

evaluate moral problems associated with data


The proper use of data that maximise the benefit for the society.

being fair and unbiased in how information represented by data is used and shared

A framework for responsible use of data without doing damage to data subjects and promotion of access to data.

A willingness to use data only for agreed-upon goods for society.

Accountability

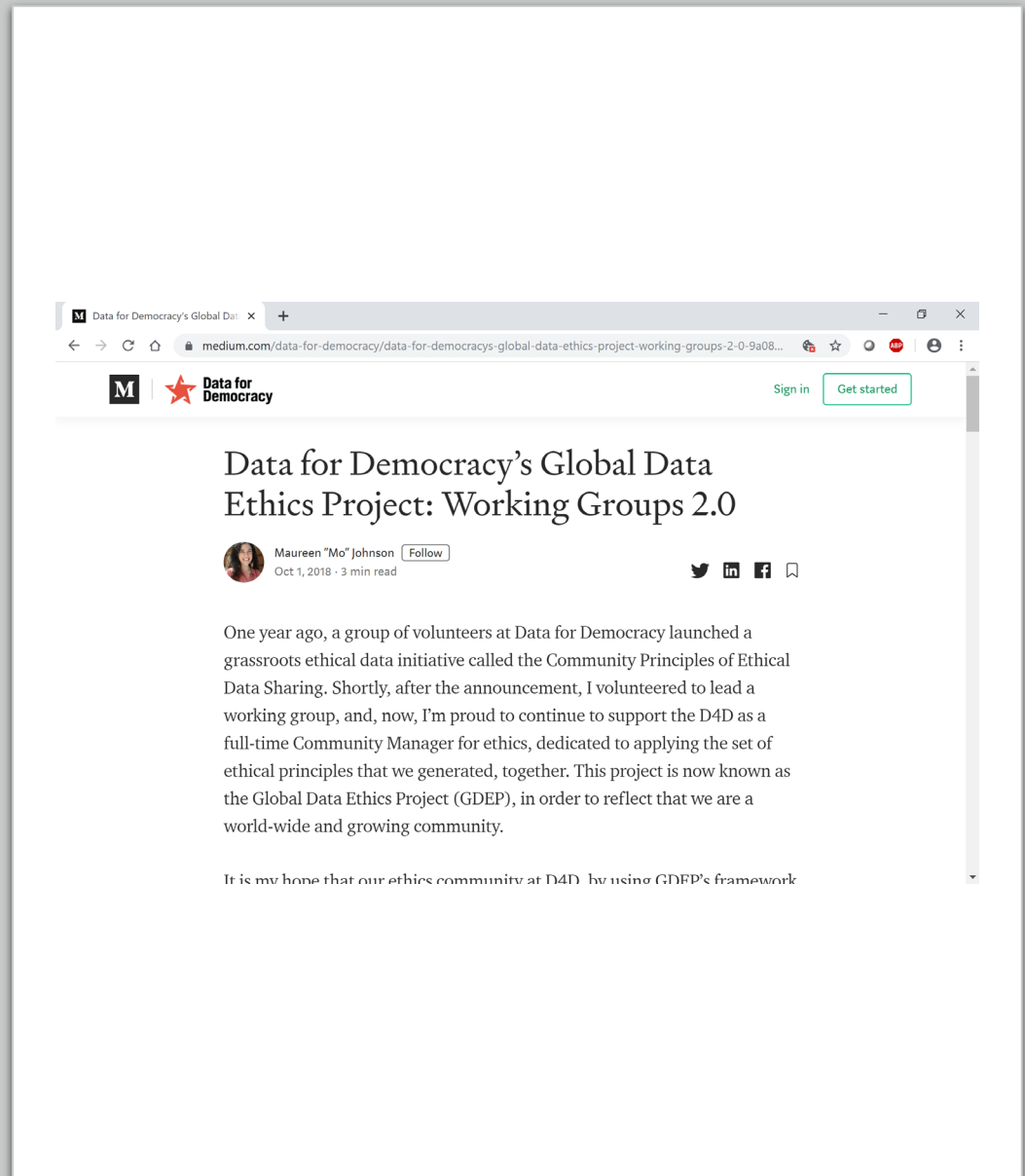


What are we doing now?

Data Ethics
Organizations:
Principles

Data for Democracy

- Data for Democracy – Global Data Ethics Project
- **FORTS** – Fairness, Openness, Reliability, Trust, and Social Benefit
- <https://github.com/Data4Democracy>



Data & Society


About | Data & Society

datasociety.net/about/

WHAT WE DO

Data & Society advances public understanding of the social implications of data-centric technologies and automation.

The issues that Data & Society seeks to address are complex. The same innovative technologies and sociotechnical practices that are reconfiguring society – enabling novel modes of interaction, new opportunities for knowledge, and disruptive business paradigms – can be abused to invade people’s privacy, provide new tools of discrimination, and harm individuals and communities.



A photograph showing four people (three men and one woman) sitting on a dark grey couch in a room with bookshelves in the background. They are all looking towards the right side of the frame, appearing to be in a discussion or listening to someone off-camera. The man on the far left is wearing a grey hoodie and blue jeans. The woman on the far right is wearing a red patterned top and dark pants. The two people in the middle are also looking in the same direction.

DataEthics.eu

Tools for Data Ethics

Download this **newly updated dataethics-readiness-test-2021**

White Paper on Data Ethics in Public Procurement of AI-Based Services

Principles of Data Ethics - Or get it print on demand

Data Ethics Tools for companies

Digital Selfdefense Tools for individuals

Ethical Software for Working at Home and Keeping Contact w Friends/Family

Data Ethics - The New Competitive Advantage



What is DataEthics.eu

We are a European independent non-profit organisation with a global outreach established in 2015. Our aim is to ensure a human-centric approach to data systems and development. [Read more about background and values](#) and [Meet the team](#).

DataEthics Research

The objective of DataEthics Research/Academic (DataEthics RA) is to conduct and publish interdisciplinary constructive research with a trans-technical and

DataEthics.eu

A ThinkDoTank

Benefit – Who benefits from the data processing

Data control – Who has primary control (access, storage, consent)?

Transparency – Are data processes transparent (do people understand what happens with their data)?

Accountability – Can the system be audited?

Considerations – Are special needs of vulnerable citizens considered (e.g., children)?

Values for the future – Designing sustainable data solutions.

DATA ETHICS PRINCIPLES

BENEFIT

- who benefits from the data processing?

DATA CONTROL

- who has primary control (access, storage, consent)?

TRANSPARENCY

- are data processes transparent? do people understand what happens with their data?

ACCOUNTABILITY

- can the system rectify? can it be audited?

PARTICULAR CONSIDERATIONS

- are special needs of vulnerable citizens considered (children e.g.)?

VALUES FOR THE FUTURE

- designing sustainable data solutions. Not just for the here and now

DATAETHICS

DATAETHICS

Principles and Guidelines for
Companies, Authorities
& Organisations

© DataEthics.eu
The Independent ThinkdoTank

Data Ethics Principles

- David Hand – IMS Bulletin (Jan/Feb 2019) – Data and analysis should...
 - Serve the public good
 - Be non-discriminatory
 - Be trustworthy and honest
 - Protect individual identities
 - Adhere to legal requirements



Data Ethics Principles – UK

- Start with clear user need & public benefit
- Be aware of relevant legislation and codes of practice
- Use data that is proportionate to the user need
- Understand the limitations of the data
- Use robust practices and work within your skillset
- Make your work transparent and be accountable
- Embed data responsibly



<https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework>

<https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines>



Building trust in human-centric AI

The Ethics Guidelines for Trustworthy Artificial Intelligence (AI) is a document prepared by the [High-Level Expert Group on Artificial Intelligence](#) (AI HLEG). This independent expert group was set up by the European Commission in June 2018, as part of the [AI strategy](#) announced earlier that year.

[Download the Guidelines](#)

Languages available:

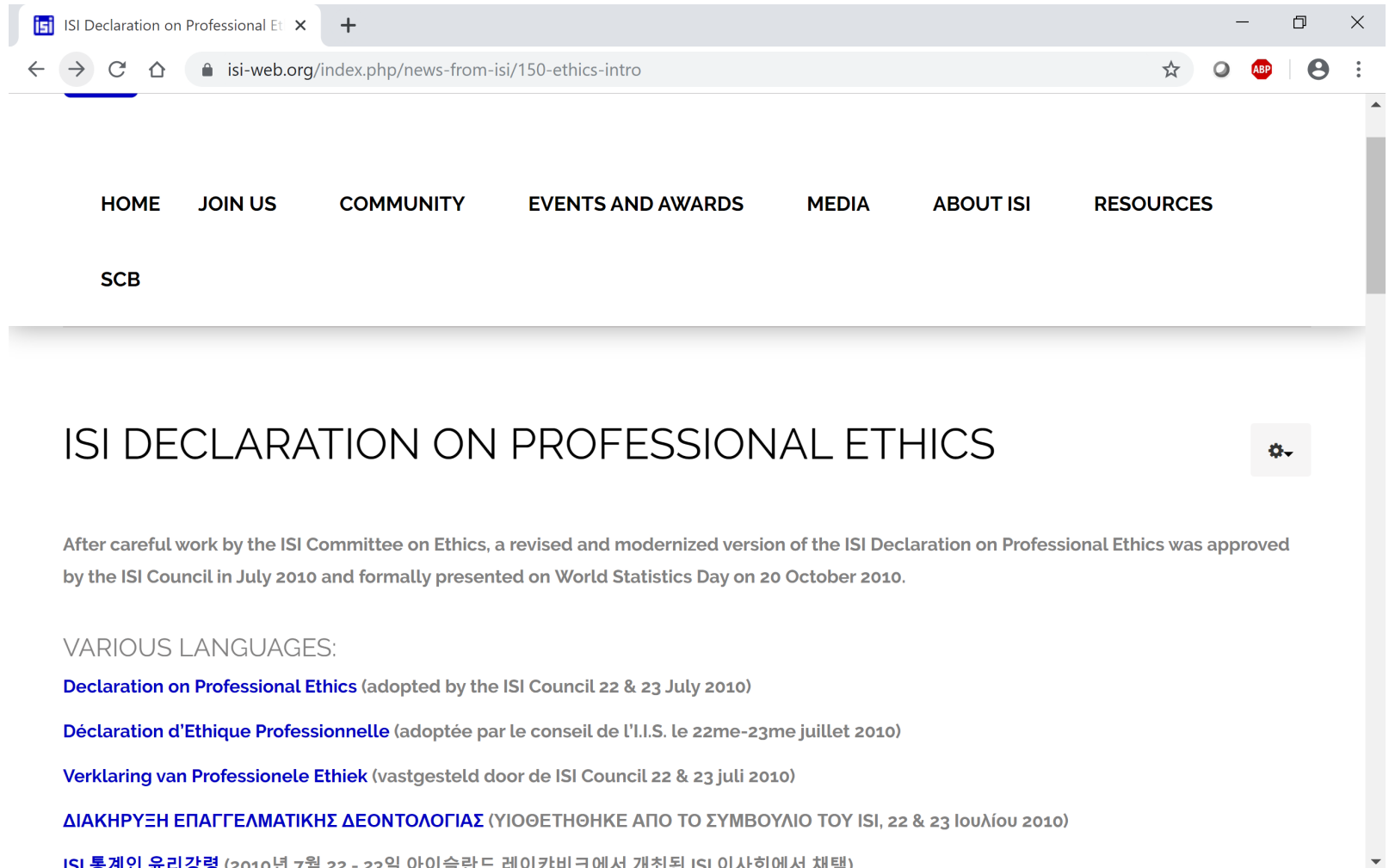
[BG](#) | [CS](#) | [DE](#) | [DA](#) | [EL](#) | [EN](#) | [ES](#) | [ET](#) | [FI](#) | [FR](#) | [HR](#) | [HU](#) | [IT](#) | [LT](#) | [LV](#) | [MT](#) | [NL](#) | [PL](#) | [PT](#) | [RO](#) | [SK](#) | [SL](#) | [SV](#)



What are we doing now?

Professional Associations: ethical guidelines and codes ...

ISI—International Statistical Institute



The screenshot shows a web browser window with the address bar displaying 'isi-web.org/index.php/news-from-isi/150-ethics-intro'. The page features a navigation menu with links: HOME, JOIN US, COMMUNITY, EVENTS AND AWARDS, MEDIA, ABOUT ISI, and RESOURCES. Below the menu is a section titled 'SCB'. The main content area is titled 'ISI DECLARATION ON PROFESSIONAL ETHICS' and includes a paragraph about the revised declaration approved in July 2010. It also lists the declaration in various languages: English, French, Dutch, Greek, and Korean.

ISI Declaration on Professional Et x +

isi-web.org/index.php/news-from-isi/150-ethics-intro

HOME JOIN US COMMUNITY EVENTS AND AWARDS MEDIA ABOUT ISI RESOURCES

SCB

ISI DECLARATION ON PROFESSIONAL ETHICS

After careful work by the ISI Committee on Ethics, a revised and modernized version of the ISI Declaration on Professional Ethics was approved by the ISI Council in July 2010 and formally presented on World Statistics Day on 20 October 2010.

VARIOUS LANGUAGES:

[Declaration on Professional Ethics](#) (adopted by the ISI Council 22 & 23 July 2010)

[Déclaration d'Ethique Professionnelle](#) (adoptée par le conseil de l'I.S. le 22me-23me juillet 2010)

[Verklaring van Professionele Ethiek](#) (vastgesteld door de ISI Council 22 & 23 juli 2010)

[ΔΙΑΚΗΡΥΞΗ ΕΠΑΓΓΕΛΜΑΤΙΚΗΣ ΔΕΟΝΤΟΛΟΓΙΑΣ](#) (ΥΙΟΘΕΤΗΘΗΚΕ ΑΠΟ ΤΟ ΣΥΜΒΟΥΛΙΟ ΤΟΥ ISI, 22 & 23 Ιουλίου 2010)

[ISI 통계인 윤리강령](#) (2010년 7월 22 - 23일 아이슬란드 레이카비크에서 개최된 ISI 이사회에서 채택)

Ethical Guidelines for Statistical Practice

[https://www.amstat.org/
ASA/Your-Career/Ethical-
Guidelines-for-Statistical-
Practice.aspx](https://www.amstat.org/ASA/Your-Career/Ethical-Guidelines-for-Statistical-Practice.aspx)

- Professional Integrity and Accountability
- Integrity of Data and Methods
- Responsibilities to Science/Public/Funder/Client
- Responsibilities to Research Subjects
- Responsibilities to Research Team Colleagues
- Responsibilities to Other Statisticians & Data Scientists
- Responsibilities Regarding Allegations of Misconduct
- Responsibilities of Employers

Ethical Guidelines for Statistical Practice

Principle B

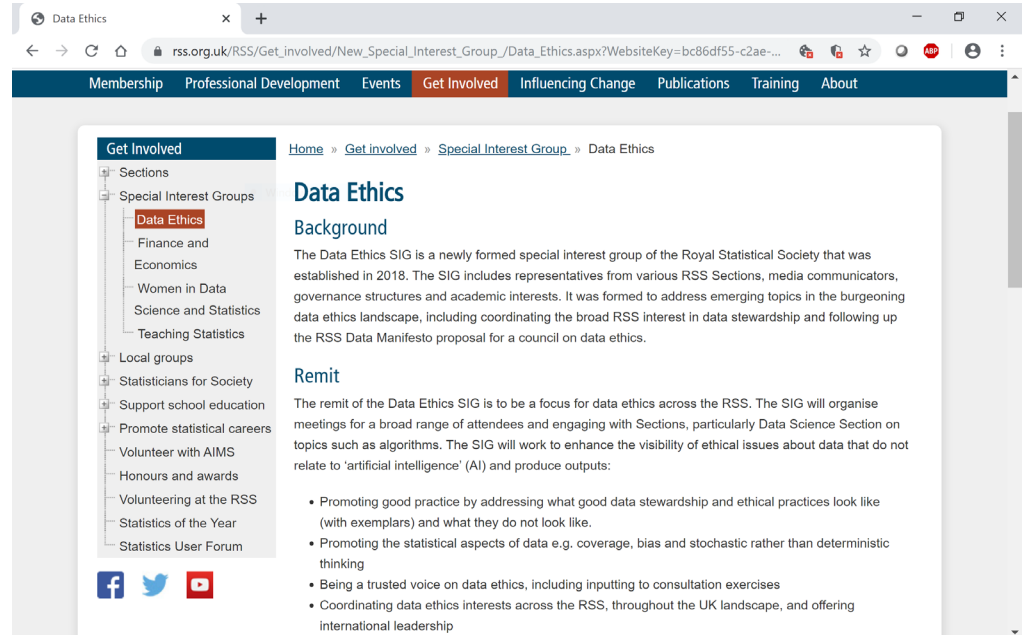
Integrity of data and methods

The ethical statistician is candid about any known or suspected limitations, defects, or biases in the data that may affect the integrity or reliability of the statistical analysis.

Objective and valid interpretation of the results requires that the underlying analysis recognizes and acknowledges the degree of reliability and integrity of the data.



Royal Statistical Society



The screenshot shows a web browser displaying the 'Data Ethics' page of the Royal Statistical Society. The browser's address bar shows the URL: rss.org.uk/RSS/Get_involved/New_Special_Interest_Group/Data_Ethics.aspx?WebsiteKey=bc86df55-c2ae-4000-b010-000000000000. The page has a dark blue navigation bar with links: Membership, Professional Development, Events, Get Involved (highlighted), Influencing Change, Publications, Training, and About. On the left, a 'Get Involved' sidebar lists various sections, with 'Data Ethics' highlighted under 'Special Interest Groups'. The main content area features the title 'Data Ethics' and a 'Background' section. The background text states that the Data Ethics SIG is a newly formed special interest group of the Royal Statistical Society established in 2018, aimed at addressing emerging topics in the data ethics landscape. Below this is a 'Remit' section with a bulleted list of the group's goals.

Home » [Get Involved](#) » [Special Interest Group](#) » Data Ethics

Data Ethics

Background

The Data Ethics SIG is a newly formed special interest group of the Royal Statistical Society that was established in 2018. The SIG includes representatives from various RSS Sections, media communicators, governance structures and academic interests. It was formed to address emerging topics in the burgeoning data ethics landscape, including coordinating the broad RSS interest in data stewardship and following up the RSS Data Manifesto proposal for a council on data ethics.

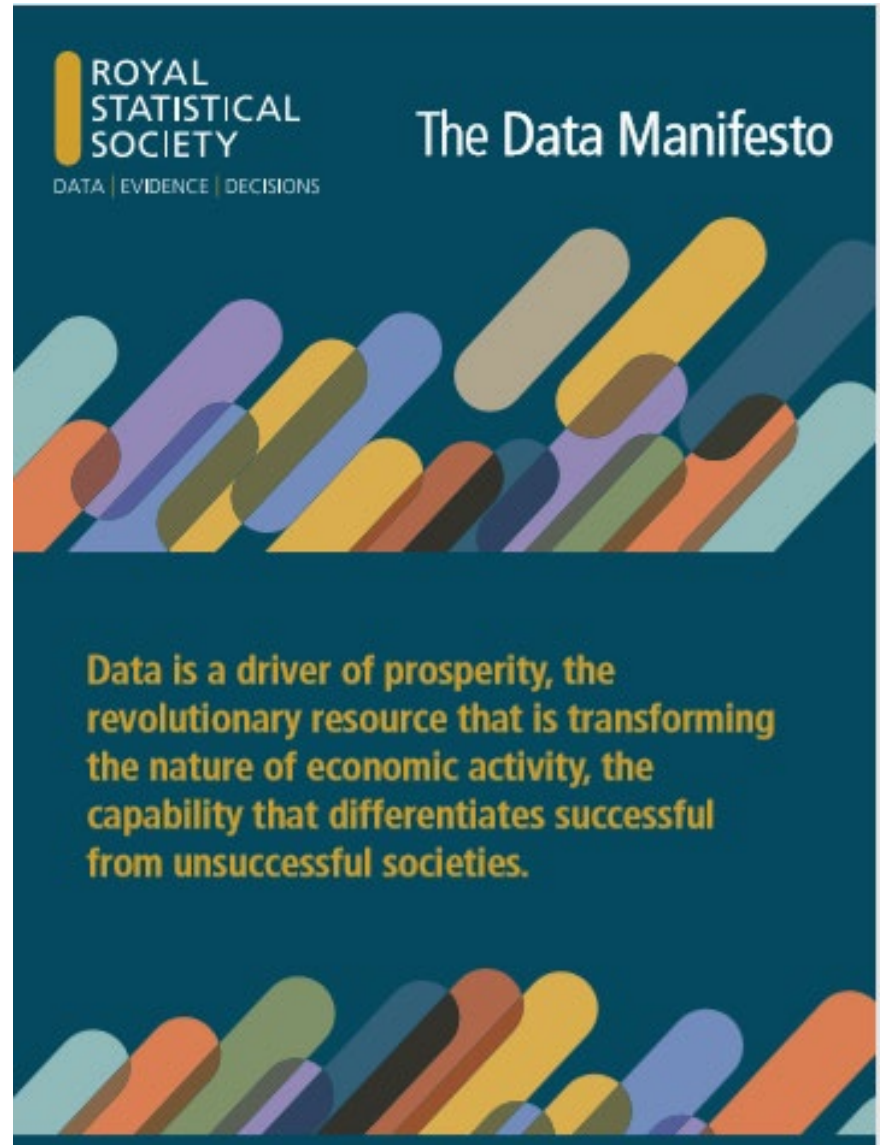
Remit

The remit of the Data Ethics SIG is to be a focus for data ethics across the RSS. The SIG will organise meetings for a broad range of attendees and engaging with Sections, particularly Data Science Section on topics such as algorithms. The SIG will work to enhance the visibility of ethical issues about data that do not relate to 'artificial intelligence' (AI) and produce outputs:

- Promoting good practice by addressing what good data stewardship and ethical practices look like (with exemplars) and what they do not look like.
- Promoting the statistical aspects of data e.g. coverage, bias and stochastic rather than deterministic thinking
- Being a trusted voice on data ethics, including inputting to consultation exercises
- Coordinating data ethics interests across the RSS, throughout the UK landscape, and offering international leadership

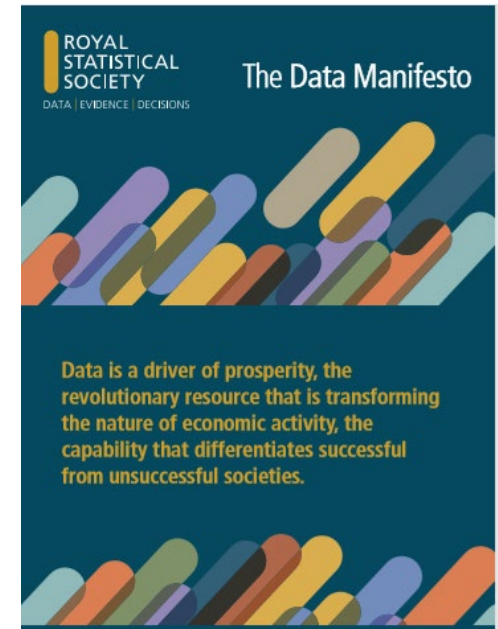


Royal Statistical Society



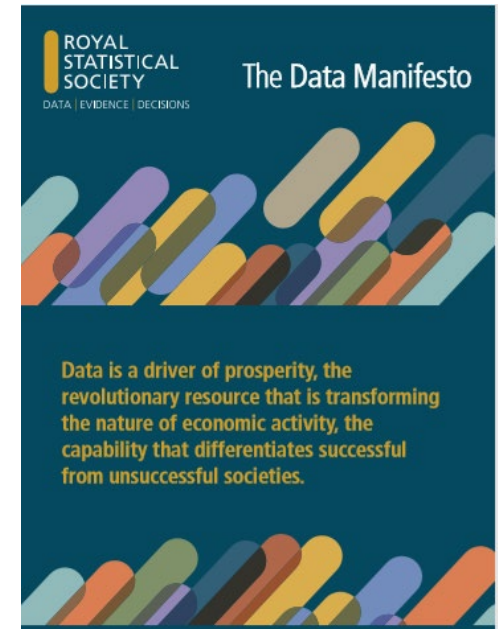
Royal Statistical Society

- Ensure official statistics are at the heart of policy debate
- Commit to greater data sharing between government departments for statistics and research purposes
- Champion basic training in data handling and statistics for politicians, policymakers and other professionals working in public services
- Maintain the commitment to keep pace with other leading scientific nations on investment in research and development
- Give the Office for National Statistics and the wider Government Statistical Service adequate resources



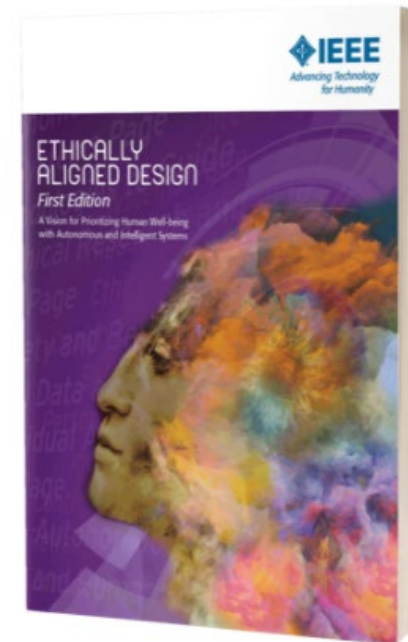
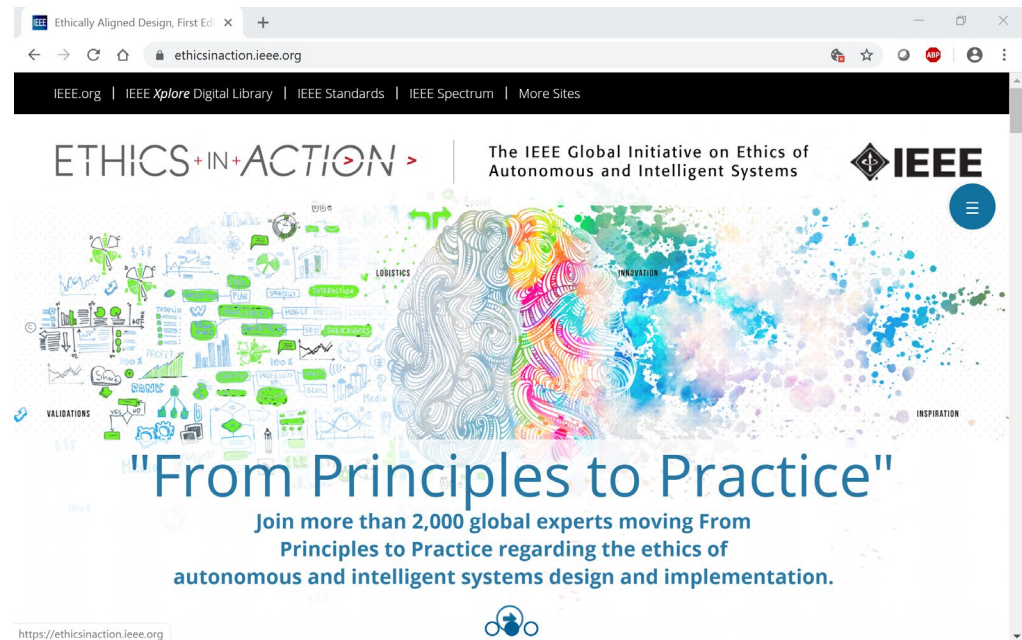
Royal Statistical Society

- Prepare for the data economy by skilling (training) up the nation
- Involve the public in shaping the conversation about how data is used.
- Misinformation needs countering but without undermining free speech
- Move beyond averages and break down data to a much more granular level
- Keep data regulation updated to protect the public



IEEE – Ethics in Action

[https://ethicsinaction.ieee.org/
#read](https://ethicsinaction.ieee.org/#read)



General Principles

- Respect, promote & protect internationally recognized **human rights**
- Increased **human well-being** as success criterion
- **Individuals** to access and securely share data & to **have control** over their identity
- Provide evidence of **effectiveness** and **fitness** for purpose
- **Transparency** in decision making
- Unambiguous rationale for decisions - **accountability**
- Guard against **all** potential **misuses** and **risks**
- Specify **competence** required for operation

Legislation

What countries are
doing...

Protecting Data via Laws

- Protection of personal data is critical.
- Europe – GDPR – General Data Protection Regulation
- India – Personal Data Protection Act
- Brazil – General Data Protection Law
- California (US) – California Consumer Protection Act



Protecting Data Rights

- Right to be informed
- Right to object
- Right of access
- Right to rectification or to be corrected/fixed
- Right to be forgotten



UNCTAD

Prosperity for all

About

Topics

Projects

Publications

Meetings

Statistics

COVID-19

Data Protection and Privacy Legislation Worldwide

58%

COUNTRIES WITH
LEGISLATION

10%

COUNTRIES WITH
DRAFT LEGISLATION

21%

COUNTRIES WITH
NO LEGISLATION

12%

COUNTRIES WITH
NO DATA

Countries:

Select a country

Regions:

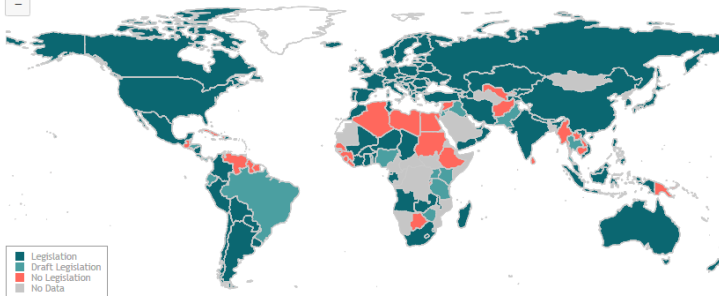
Select a region

Download:

Full Data



Data Protection and Privacy Legislation Worldwide



Source: UNCTAD, 14/01/2020

[https://unctad.org/en/Pages/DTL/STI and ICTs/ICT4D-Legislation/eCom-Data-Protection-Laws.aspx](https://unctad.org/en/Pages/DTL/STI%20and%20ICTs/ICT4D-Legislation/eCom-Data-Protection-Laws.aspx)



Government Trends 2020

What are the most transformational trends in government today?

<https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/public-sector/lu-government-trends-2020.pdf>

DATA AND AI ETHICS INITIATIVES

Canada issued a directive on automated decision-making to ensure decisions made by automated systems are interpretable and transparent and reduce the risk for Canadian citizens.

Germany's Ethics Commission on Autonomous Vehicles is developing ethical guidelines for AVs.

Serbia's National Assembly enacted a new data protection law in November 2018 modeled after the European Union's General Data Protection Regulation.

Singapore has established an advisory council on the ethical use of AI and data to advise on the responsible development and deployment of AI.

The **European Union's General Data Protection Regulation** mandates organizations, private and public, to provide "data protection by design" and "data protection by default."

The city of **New York** has established an automated decision systems task force to explore how the city uses algorithms to make decisions.

Brazil approved the General Data Protection Law in August 2018.

The **United Kingdom's Centre for Data Ethics and Innovation** has been established to advise the government on how to use AI and other technologies to benefit society.

Dubai has established an AI ethics advisory board to encourage fair, transparent, and accountable AI systems.

Bahrain passed a data protection law in July 2018, making it the first Middle Eastern country to adopt a comprehensive privacy law.

The **Netherlands' Utrecht Data School** has developed a data ethics decision aid tool that is currently used by various Dutch municipalities to make ethical decisions related to data.

Japan's Ministry of Internal Affairs and Communications launched guidelines for AI research and development in 2017 that focus on protecting interests of citizens by mitigating risks of AI systems.

Australia has released a discussion paper that proposes an AI ethical framework.

Hong Kong published an ethical accountability framework in October 2018 that includes guidelines for businesses operating in Hong Kong on protecting the privacy of citizens.

US – Federal Data Strategy

← → ↺ 🏠 strategy.data.gov

 An official website of the United States government [Here's how you know](#) ▼



Federal Data Strategy

Leveraging Data as a Strategic Asset

[Home](#) [About ▼](#) [Action Plan](#) [Action Progress](#) [Resources](#) [News](#)



Federal Data Strategy —
Data,
accountability,
and
transparency:
creating a data
strategy and
infrastructure
for the future

US – Federal Data Strategy

What is the Purpose of the Federal Data Strategy?

The use of data is transforming the world. The way the Federal Government provides, maintains, and uses data has a unique place in society, and maintaining trust in Federal data is pivotal to a democratic process. To meet the changing role of data and needs of democracy, the Federal Government created a coordinated and integrated data strategy that better enables data to deliver on mission, serve the public, and steward resources while respecting privacy and confidentiality.

The mission of the Federal Data Strategy is to fully leverage the value of federal data for mission, service, and the public good by guiding the Federal Government in practicing ethical governance, conscious design, and a learning culture.

- [The Federal Data Strategy](#), which comprises the Mission Statement, Principles, and Practices, provides a whole-of-government vision and offers guidance on how agencies should manage and use Federal data.
- [Annual Government-wide Action Plans](#) identify concrete steps for agencies in a given year, to achieve the long-term vision.

The Federal Data Strategy is designed to derive value from data while supporting robust data governance and protecting security, privacy, and confidentiality.

<https://strategy.data.gov/news/2020/12/01/data-skills-catalog-and-data-ethics-framework/>

Data Skills Catalog and Data Ethics Framework Now Available


December 1, 2020

Washington – The mission of the Federal Data Strategy (FDS) is to fully leverage the value of federal data for mission, service, and the public good.

As part of the FDS 2020 Action Plan, the General Services Administration (GSA) committed to complete **Action 13: Develop a Curated Data Skills Catalog (Catalog)** and **Action 14: Develop a Data Ethics Framework (Framework)**.

- The [Catalog](#) can be used to help agencies develop competencies for managing data as a strategic asset and making data-driven decisions.
- The [Framework](#) can be used by federal leaders and data users as they make ethical decisions when acquiring, managing, and using data to support their agency's mission.

The release of these products marks the culmination of months of work by data experts across the Federal Government. We are grateful to the teams who made this possible. The Catalog and Framework are [now available](#) on resources.data.gov. Read and use today!



UN Secretary-General's Data Strategy 2020-22



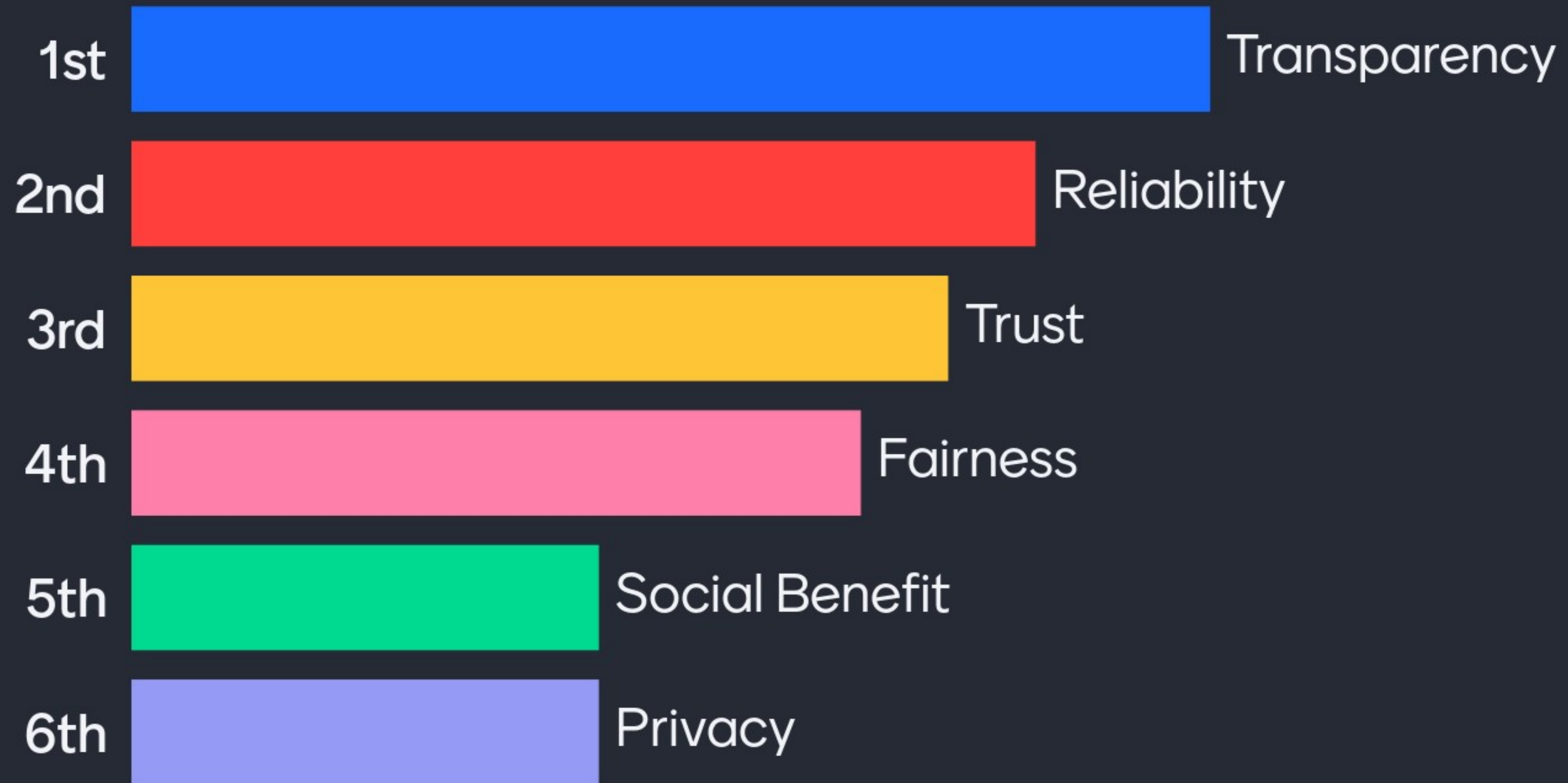
https://www.un.org/en/content/datastrategy/images/pdf/UN_SG_Data-Strategy.pdf

What data
ethics principles
are important
to you?

We discussed
several principles.

Go to
www.menti.com
and enter the code.

Ranking



Name one thing you will tell others about data ethics

General awareness

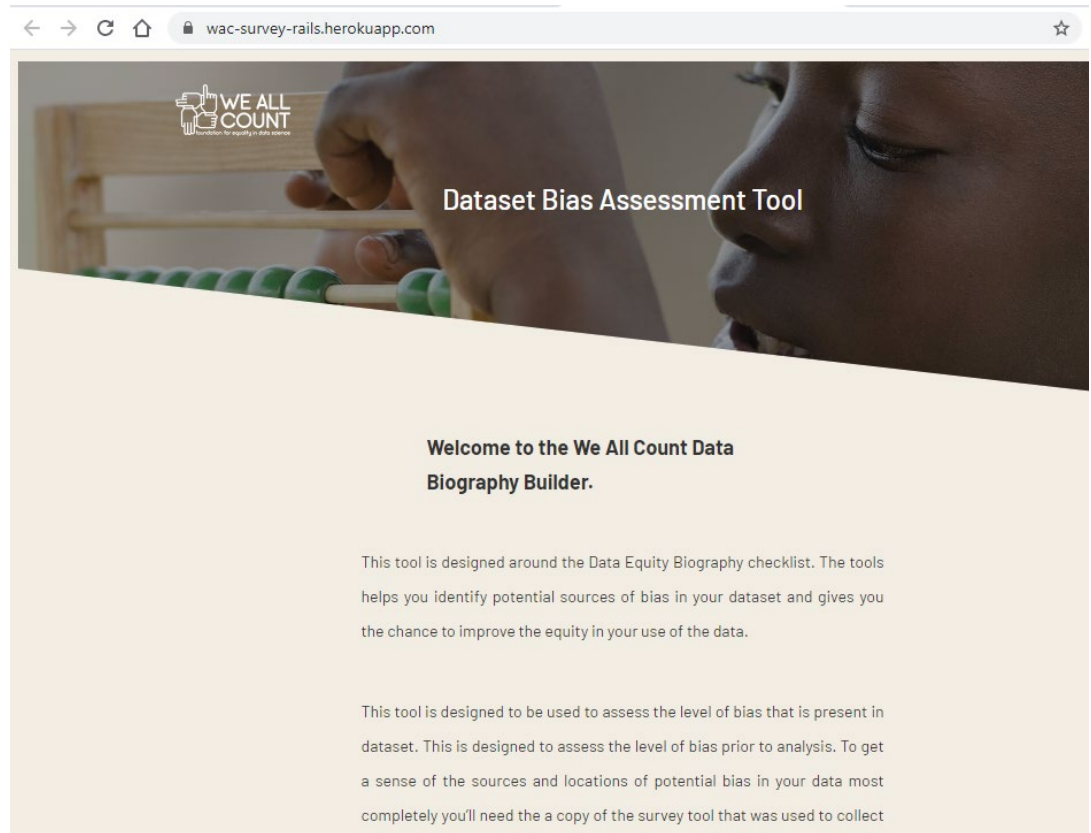
If you haven't started thinking about it, you should.

Explainability of models

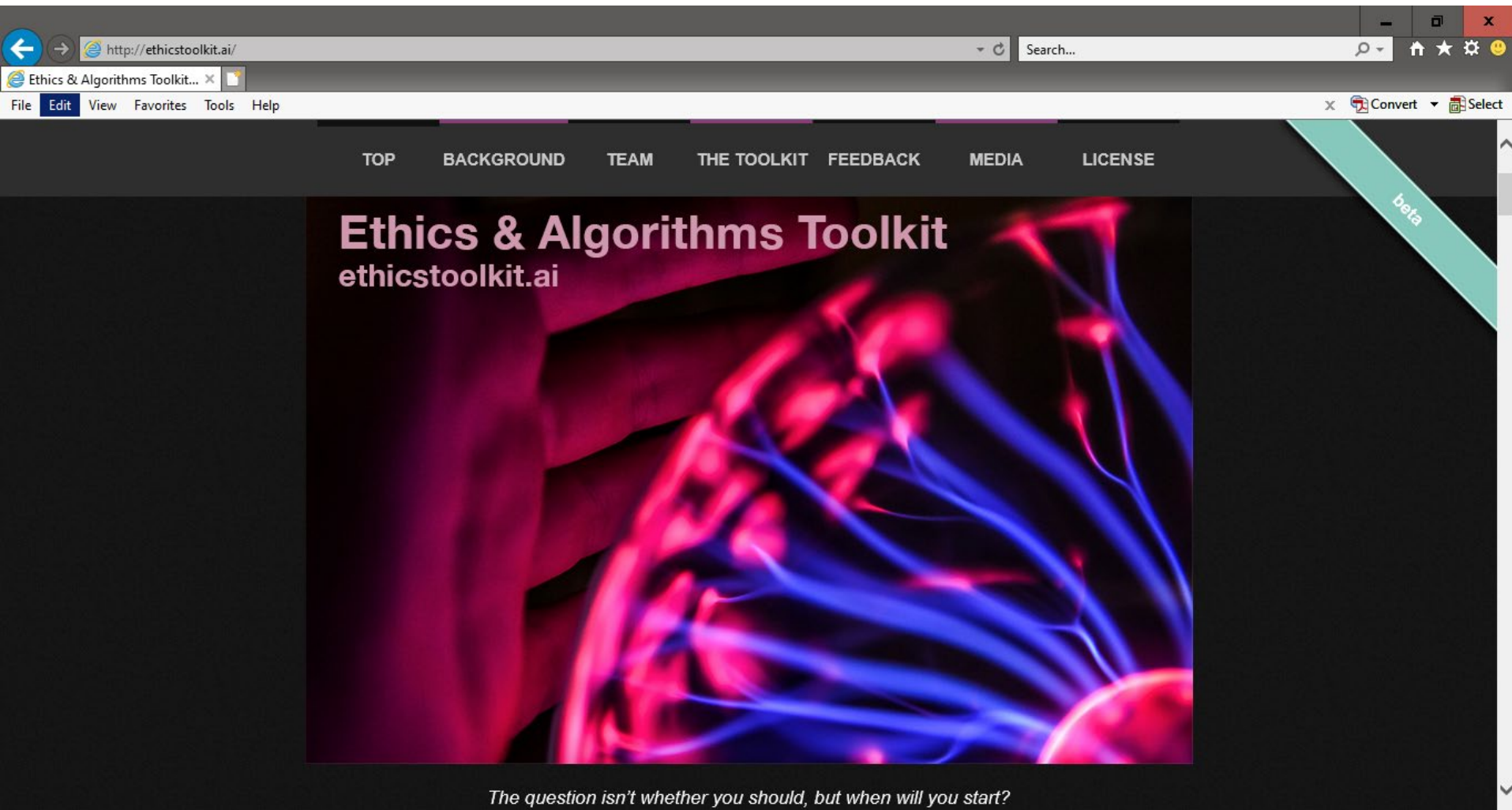
Tools

To help us navigate to
a better future...

<https://wac-survey-rails.herokuapp.com/>



<http://ethicstoolkit.ai/>



<https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html>

The screenshot shows a web browser window with the URL <https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html>. The browser's address bar and tabs are visible at the top. The page header includes the Government of Canada logo and name in both English and French, a search bar, and a language selector set to 'Français'. A dark blue 'MENU' button is located on the left side of the header. Below the header, a breadcrumb trail reads: [Canada.ca](#) > [About government](#) > [Digital Government](#) > [Digital government innovations](#) > [Responsible use of artificial intelligence \(AI\)](#). The main content area features the title 'Algorithmic Impact Assessment Tool' in a large, bold, black font, followed by a horizontal red line. Below this, the section 'On this page' is displayed in a large, bold, black font. Under 'On this page', there is a list of links: [1. Introduction](#), [2. Using and Scoring the Assessment](#), [2.1 Scoring](#), [2.2 Impact Levels](#), [3. Instructions](#), and [3.1 When to Complete the AIA](#). A 'Window Snip' watermark is visible over the list. At the bottom of the page, a small portion of the URL is visible in the browser's address bar.

Algorithmic Impact Assessment...

File Edit View Favorites Tools Help

Convert Select

Français

Search Canada.ca

MENU

[Canada.ca](#) > [About government](#) > [Digital Government](#) > [Digital government innovations](#) > [Responsible use of artificial intelligence \(AI\)](#)

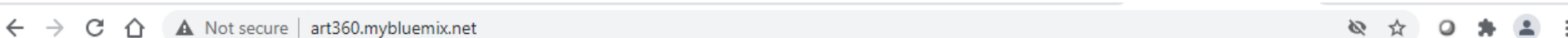
Algorithmic Impact Assessment Tool

On this page

- [1. Introduction](#)
- [2. Using and Scoring the Assessment](#)
 - [2.1 Scoring](#)
 - [2.2 Impact Levels](#)
- [3. Instructions](#)
 - [3.1 When to Complete the AIA](#)

<https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html>

<http://art360.mybluemix.net/>



IBM Research Trusted AI

[Home](#)

[Demos](#)

[Resources](#)

[Videos](#)

Adversarial Robustness 360

The open source Adversarial Robustness Toolbox provides tools that enable developers and researchers to evaluate and defend machine learning models and applications against the adversarial threats of evasion, poisoning, extraction, and inference.



[API Docs](#)

[Get Code](#)

Not sure what to do first? Start here!

Read More

Learn about adversarial robustness concepts, terminology, and tools before you begin.

Try Web Demos

Explore interactive web demos that illustrate the capabilities available in this toolbox.

Watch Videos

Watch videos to learn more about the Adversarial Robustness Toolbox.

Read a Paper

Read a paper describing the details of the Adversarial Robustness Toolbox.

Use Tutorials

Step through a set of in-depth examples to evaluate and defend AI models.

Another story...



CODED BIAS

A SHALINI KANTAYYA FILM



WMM A WOMEN MAKE MOVIES RELEASE

NETFLIX

C O D E D B I A S

Coded Bias

2020 | TV-MA | 1h 25m | Social & Cultural Docs

This documentary investigates the bias in algorithms after M.I.T. Media Lab researcher Joy Buolamwini uncovered flaws in facial recognition technology.



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- Cell: +1 202-360-3588

References

- Listening to recordings:
<https://www.bloomberg.com/news/articles/2019-04-10/is-anyone-listening-to-you-on-alexa-a-global-team-reviews-audio>
- Algorithm bias:
<https://www.nytimes.com/2019/11/19/technology/artificial-intelligence-bias.html>
- Paper on strengthening ethics via guidelines.
<https://osf.io/preprints/socarxiv/93wuk>
- <https://phys.org/news/2017-02-statistics-ethically-combat-scientific-credibility.html>
- Latest issue of HDSR Harvard Data Science Review – article on algorithms:
<https://hdsr.mitpress.mit.edu/pub/56lnenzj>
- https://www.academia.edu/17607856/Creating_a_culture_of_ethics_in_Biomedical_Big_Data_adapting_guidelines_for_professional_practice_to_promote_ethical_use_and_research_practice
- https://www.academia.edu/29647535/A_beginners_guide_to_reasoning_with_the_ASA_Ethical_Guidelines

References

- Cynthia Rudin speaks a lot about interpretable models.
 - <https://www.nature.com/articles/s42256-019-0048-x>
 - <https://rss.onlinelibrary.wiley.com/doi/abs/10.1111/rssa.12227>
 - One of the relevant full papers is here:
<https://arxiv.org/pdf/1811.10154.pdf>
- https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf
- <https://bdes.datasociety.net/council-output/example-big-data-research-controversies/>
- <http://raw.rutgers.edu/docs/wcars/38wcars/Presentations/Dan%20-%20Ethics%20for%20Big%20Data%20and%20Analytics.pdf>
- <http://magnacartafordata.org/about/data-ethics-case-studies-project/>

References

- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/737137/Data_Ethics_Framework.pdf
- <https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework>
- <https://www2.deloitte.com/us/en/insights/industry/public-sector/government-trends/2020/government-data-ai-ethics.html>
- https://www2.deloitte.com/content/dam/insights/us/articles/government-trends-2020/DI_Government-Trends-2020.pdf
- <https://www.dataversity.net/what-are-data-ethics/#>
- <https://blog.datasciencedojo.com/big-data-ethics-10-experiments/>
- <https://aiethics.princeton.edu/case-studies/>

References

- <https://aiethics.princeton.edu/case-studies/case-study-pdfs/>
- <https://www.forbes.com/sites/ciocentral/2018/10/29/a-rising-crescendo-demands-data-ethics-and-data-responsibility/#5237979ab5d5>
- <https://wac-survey-rails.herokuapp.com/> This is a tool to assess bias in a data set.
- https://www.nature.com/articles/d41586-020-00274-3?utm_source=Nature+Briefing&utm_campaign=dcc6ede003-briefing-dy-20200204&utm_medium=email&utm_term=0_c9dfd39373-dcc6ede003-44476129
- <https://www.nbcnews.com/news/us-news/police-were-cracking-cold-cases-dna-website-then-fine-print-n1070901>



Case studies ...

What do you think ??

DNA – Genealogy

- April 2018 – Golden State Killer found in part by submitting DNA to a DNA database
- Information on distant relatives helped identify him
- Privacy policies changed to restrict law enforcement searches ... Unless one opts in
- **Would you opt in?**
- **Would it depend on the type of offense?**
- Go to [menti.com](https://www.menti.com)



<https://www.nbcnews.com/news/us-news/police-were-cracking-cold-cases-dna-website-then-fine-print-n1070901>

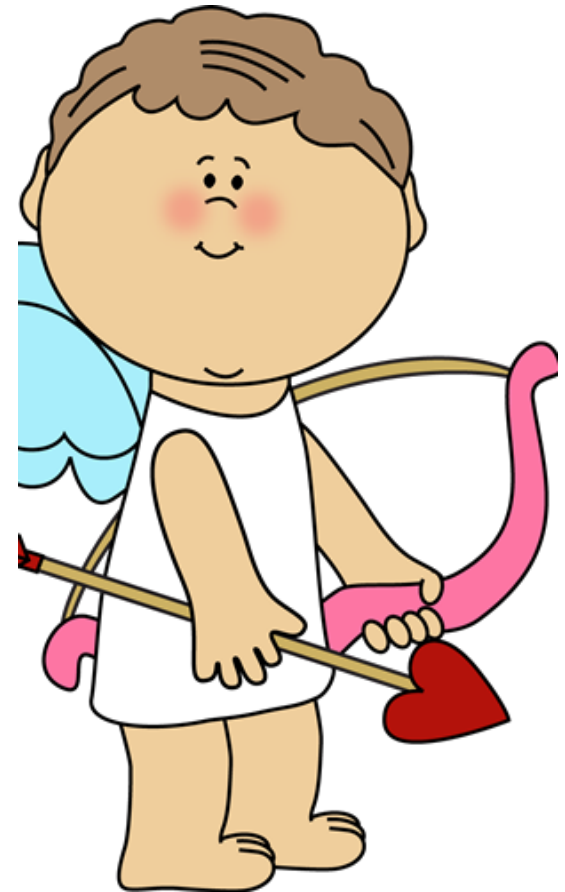
More DNA ...

- Direct-to-consumer DNA testing provides genetic information
 - Determining ancestry
 - Finding mutations - diseases
- Other uses of genetic information
 - Medical research
 - Drug development
- **Would you agree to share your DNA to a for-profit company for research?**
- **What are the dangers of freely sharing genetic information?**

- <https://pharmacogeneticstesting.com/pharmacogenomic-companies/23andme-new-genetic-testing-products/>

OkCupid Data Set

- In 2016 ... data from ~70,000 OkCupid profiles were released – Open Science Framework (osf.io)
- Two researchers scraped data with a bot profile
 - Age
 - Gender
 - Sexual orientation
 - Personal responses
- Did not think violated ethics – data is public.
- **What do you think?**
- Go to menti.com.



Education

Through case studies and more...



DATA ETHICS CASE STUDIES PROJECT

The Data Ethics Case Studies Project endeavours to understand the ethical issues faced by people conducting data research. This project uses interviews to explore the issues that concern the researchers themselves, analyses and distils the issues into brief explorations and key questions, and makes the resulting documents publicly available.

The aim of the project is to give a platform to researchers and their concerns thus bringing them a step closer to other researchers who are facing the same issues and to researchers who are experts in ethics, law or human rights. Bringing researchers closer to one another will hopefully spark collaboration or at least co-operation and problem solving when it comes to ethical problems.

Search your criteria



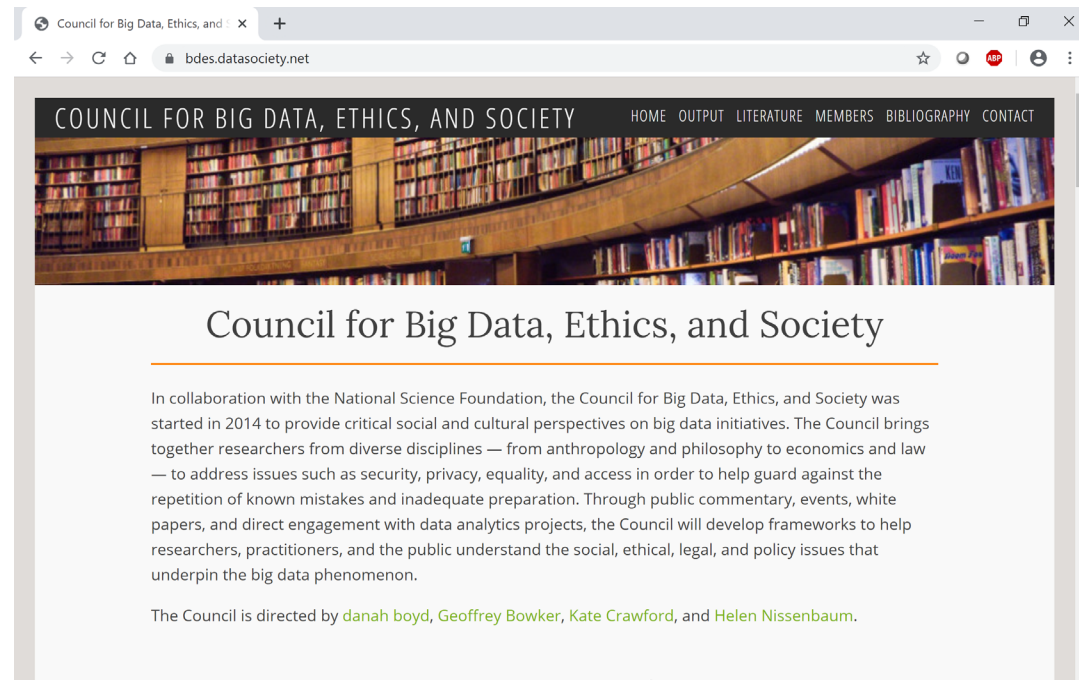
SUBMIT A CASE STUDY



RECENT POSTS

Fake news – technology as part of the solution, not just

Case Studies in Ethics (NSF)



Case Studies in Ethics

- Include data ethics in all courses – not just one lecture
- Case studies have been developed.
- Council for Big Data, Ethics, and Society
 - <https://bdes.datasociety.net>
- Real situations ...
 - Should academic researchers use hacked data sets that have been released in public?
 - What to consider when researchers co-opt Internet of Things (IoT) devices without knowledge or consent?

Case Studies in Ethics

Ethics Education for Geospatial Professionals Products



gisprofessionalethics.org

[About this Project](#) | [Case Studies](#) | [Codes of Ethics](#) | [Syllabi](#) | [Interview Protocols](#) | [Other](#)

Case Studies

Students develop ethical awareness and moral reasoning skills through methodical analysis and discussion of case studies. The main contribution of the GIS Professional Ethics Project is a collection of case studies that pose a range of ethical challenges faced by geospatial professionals. Related educator resources are available on request for most cases.

To learn more about the case method, including a "Seven Step Guide for Ethical Decision Making," see Davis, Michael (1999) *The Case Method. Ethics and the University*. New York: Routledge. For an example of ethical decision making using the

Case Studies

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To learn more about the case method, including a "Seven Step Guide for Ethical Decision Making," see Davis, Michael (1999) *The Case Method. Ethics and the University*. New York: Routledge. For an example of ethical decision making using the "Mapping Muslim Neighbors" case, see DiBiase, David, Chris Goranson, Francis Harvey and Dawn Wright (2009). [The GIS Professional Ethics Project: Practical Ethics Education for GIS Pros](#). *Proceedings of the 24th International Cartography Conference*. Santiago, Chile, 15-21 November. Also in Unwin, D., K. Foote, N. Tate and D. DiBiase, Eds. (2011). *Teaching Geographic Information Science and Technology in Higher Education*. London: Wiley and Sons.

For more information about GIS ethics, see DiBiase, D. (2017). Professional and Practical Ethics of GIS&T. *The Geographic Information Science & Technology Body of Knowledge* (2nd Quarter 2017 Edition), John P. Wilson (ed.). doi: [10.22224/gistbok/2017.2.2](https://doi.org/10.22224/gistbok/2017.2.2)

mapping_muslim_neighbors_case.pdf	A police department's plan to map potential terrorist enclaves brings charges of racial profiling.
caribou_routes_case.pdf	A GIS analyst is asked to exclude pertinent data from maps prepared for a public hearing.
mobile_phone_tracking_case.pdf	Researchers track mobile phone users' movements to derive predictive models of human mobility. <i>Updated 4 December 2019</i>
software_emergency_case.pdf	Too few software licenses are available in the aftermath of a tsunami.

<https://www.education.psu.edu/research/projects/gisethics>

Case Studies

The ACM Code of Ethics and Professional Practice (“the Code”) is meant to be a **useful** code, a document that can inform practice and education. It is useful as the conscience of the profession, but also for individual decision-making. The following resources may be used in learning to apply the Code to your own situation.

As prescribed by the Preamble of the Code, computing professionals should approach a dilemma with a holistic reading of the principles and evaluate the situation with thoughtful consideration to the circumstances. In all cases, the computing profession should defer to the public good as the paramount consideration. The analyses in the following fictional cases highlight the intended interpretations of members of the 2019 Code task force.

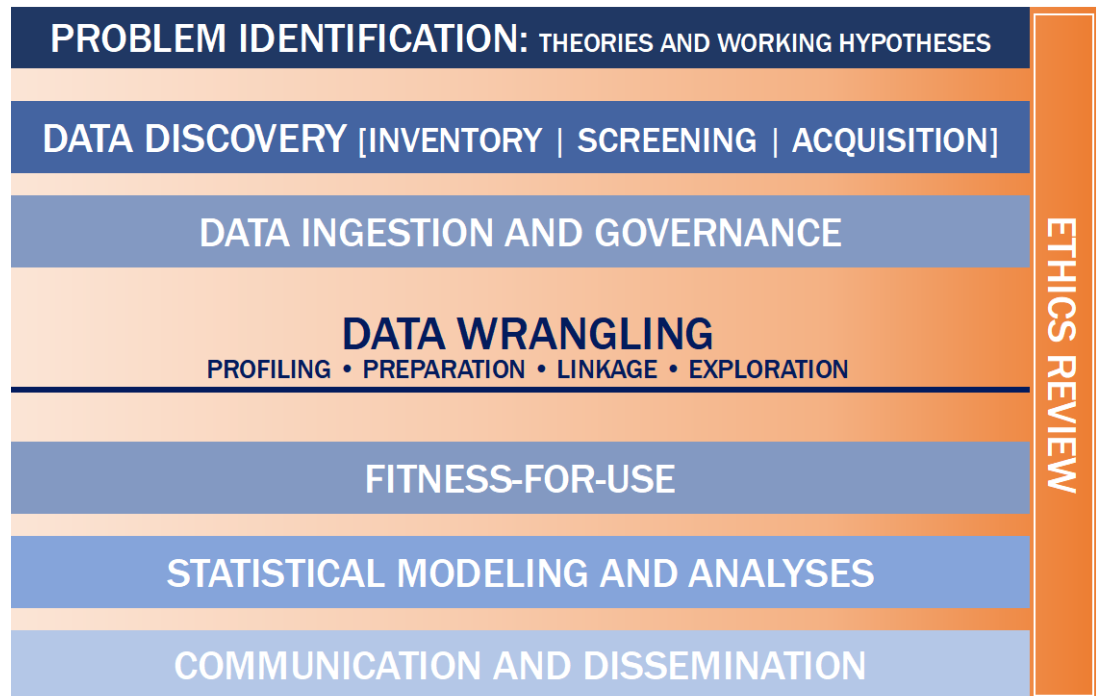
Case Studies Ethics

<https://ethics.acm.org/integrity-project/case-studies/>

- **Malware Disruption**: Security vendors and government organizations collaborate to disrupt the operation of an ISP that hosts malware.
- **Medical Implant Risk Analysis**: A medical implant device maker creates a smartphone application to monitor and control the device.
- **Abusive Workplace Behavior**: A manager fails to address abusive behavior by a technical team leader.
- **Autonomous Active Response Weapons**: A defense contractor that specializes in autonomous vehicles begins to integrate automated weaponry.
- **Dark UX Patterns**: A web developer realizes that their client’s requests are intended to trick users into making accidental and expensive purchases.
- **Malicious Inputs to Content Filters**: An Internet content filtering service deploys machine learning techniques to automate the classification of blocked content.

Data Science Framework

Source: S. A. Keller, V. Lancaster, S. Shipp. (2017). Building Capacity for Data Driven Governance - Creating a New Foundation for Democracy, *Statistics and Public Policy*, 4:1-11. <https://amstat.tandfonline.com/doi/full/10.1080/2330443X.2017.1374897#.XQf-M9NKhBw>



Data ethics is in each step of the data product life cycle.



Funding



Motivation



Project
Design



Data Collection
& Sourcing



Analysis



Interpretation



Comu
& Dist

- <https://weallcount.com/the-data-process/>



DataEthics.eu

DATA ETHICS PRINCIPLES

BENEFIT

- who benefits from the data processing?

DATA CONTROL

- who has primary control (access, storage, consent)?

TRANSPARENCY

- are data processes transparent? do people understand what happens with their data?

ACCOUNTABILITY

- can the system rectify? can it be audited?

PARTICULAR CONSIDERATIONS

- are special needs of vulnerable citizens considered (children e.g.)?

VALUES FOR THE FUTURE

- designing sustainable data solutions. Not just for the here and now

DATAETHICS