

November 9-12, 2020 • Online Event

Data Ethics



Speakers

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Data Ethics

What is Data Ethics? Impact from Big Data Data Ethics vs Information Ethics Other Definitions of Data Ethics

Why Now Regulatory focus Minimize bias and social inequities Corporate and Public Perspective



Data Ethics

Impact on Data Professionals Data Governance Specialized Area of Governance

Codes of Behavior Codes of Conduct exist for various professions

Guidelines Includes 3rd Party Data Personally Identifiable Data Data Handling Algorithms / Data Models Business Practices



A Data Science Data Ethics Checklist

- Data Collection
- Data Storage
- Analysis
- Modeling
- Deployment



But does this apply to actuaries?

- Code of Conduct
- Principles
- ASOP 23

ASOP No. 23-Doc. No. 185

sets or data sources, if any, to be considered. The actuary should do the following:

- a. consider the **data elements** that are desired and possible alternative **data elements**; and
- b. select the **data** for the analysis with consideration of the following:
 - 1. whether the **data** constitute **appropriate data**, including whether the **data** are sufficiently current;
 - 2. whether the **data** are reasonable with particular attention to internal consistency;
 - 3. whether the **data** are reasonable given relevant external information that is readily available and known to the actuary;
 - 4. the degree to which the **data** are **sufficient**;
 - 5. any known significant limitations of the **data**;
 - 6. the availability of additional or alternative **data** and the benefit to be gained from such additional or alternative **data**, balanced against how practical it is to collect and compile such additional or alternative **data**; and
 - 7. sampling methods, if used to collect the **data**.

Collection

Ensure Informed Consent.

Avoid Collection Bias

• Minimize PII

License agreements
Cambridge Analytica
Twitter polls
Modeling your book of business

Oculus Quest 2Billing Data

- School used key-card to gather detailed behavioral data
- Gave data to a data science vendor
- Used advanced algorithms to identify at-risk students & recommend remediation
- Significant improvement in outcomes, but at what cost?

OPTIMIZING SCHOOLS

CASE STUDY:

The development of artificial intelligence (AI) systems and their deployment in society gives rise to ethical dilemmas and hard questions. This is one of a set of fictional case studies that are designed to elucidate and prompt discussion about issues in the intersection of AI and Ethics. As educational materials, the case studies were developed out of an interdisciplinary workshop series at Princeton University that began in 2017-18. They are the product of a research collaboration between the University Center for Human Values (UCHV) and the Center for Information Technology Policy (CITP) at Princeton. For more information, see http://www.aiethics.princeton.edu



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Storage

• Security

• Privacy

• Retention

Breaches Stalking

The right to be forgotten CCPA requirements

Facebook Texts



Analysis

• Blind Spots & Bias

• Honest Representation

• Auditability

Gender presuppositions Age vs Driving Experience

Y-axis scope & scale
Anomalies and transformations

Documentation Repeatability



- Phone app that identifies song title and artist enhanced
- Able to identify both speaker and use internet to attach all available data
- Able to distinguish birth gender from identity gender and provide full history of changes
- How much should be invested to protect that information?

DYNAMIC SOUND IDENTIFICATION

CASE STUDY

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Modeling

Proxy Discrimination

• Metric Selection

• Communicate Weaknesses

Credit Scoring Territorial Rating

Target variable choice Reason messages

Potential bias Use beyond current book



Deployment

• Redress & Rollback

• Concept Drift

• Unintended Use

Model fixes & updatesRegulatory mandates

- Model inputs change behaviorEnvironment or process changes
- Model abuse
- Agent gaming



• AI chatbot trained to "sound" like cybercriminal

• Used to troll the dark web offering to buy stolen identities

• Only pursued against individuals with existing criminal investigations

• But does it entice criminal behavior and entrap?

LAW ENFORCEMENT CHATBOTS

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Conclusion

- None of this is new
- But is it part of our Best Practices?



Call to Action

Have the conversation Review Governance Programs

Final Message





• Thank You!

