

Privacy, Security and Professional Ethics

UBCO Master of Data Science – DATA 553

INSPIRED FROM COURSERA DATA SCIENCE ETHICS COURSE FROM
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Definition of Ethics

Derived from Greek word 'Ethos'

- Custom, habit, character or disposition

Oxford Languages

- Moral principles that govern a person's behavior or the conducting of an activity.
- Concerned with what is good for individuals and society

Shared social values that we agree on.

Ethics

Laws help enforce ethical behaviour (defines a rule) and define punishment when not

- Littering
- Driving

“Ethics are not laws, but laws often follow ethics.” - *Dr. Jagadish*

- Strata

In-class discussion

Provide examples of situation in which we have decided, as a society that it is best to behave ethically.

- In groups of 4 or 5:
 - Find up 10 examples
- Report to the class
 - Report 1 example to the class that another group has not mentioned.

Ethical Behaviour

Lawrence Canter and Martha Siegel were husband-wife partners lawyers from Arizona.

In 1994, the National Science Foundation lifted its unofficial ban on commercial speech on the Internet. In April 1994, they invented a new advertisement strategy using the Internet. Their advertisement used the green card lottery program as an attractive proposition emailing individually all the newsgroups on Usenet, both in April and June 1994. They offered to do the paperwork for new immigrants to obtain a green card at a substantial price. They omitted to mention that those wanting to enter the lottery had only to send a postcard with their name and address on it to the US state department.

This was latter referred to as the “Green card spam”.

Was their behaviour ethical at the time?

Ethical behaviour

As a small business, in a normal situation my clients come to the shop and pay by visa on the machine. During the pandemic, the shop has been closed but I take my client orders by phone. To pay, my clients give me their visa card number, expiry date and 3 digits to make the transaction over the phone.

I do not keep the visa information, but record it on a piece of paper during the phone call so that I can process it after. As I am a small business, I don't believe my garbage will be exposed, so I dispose of the information there.

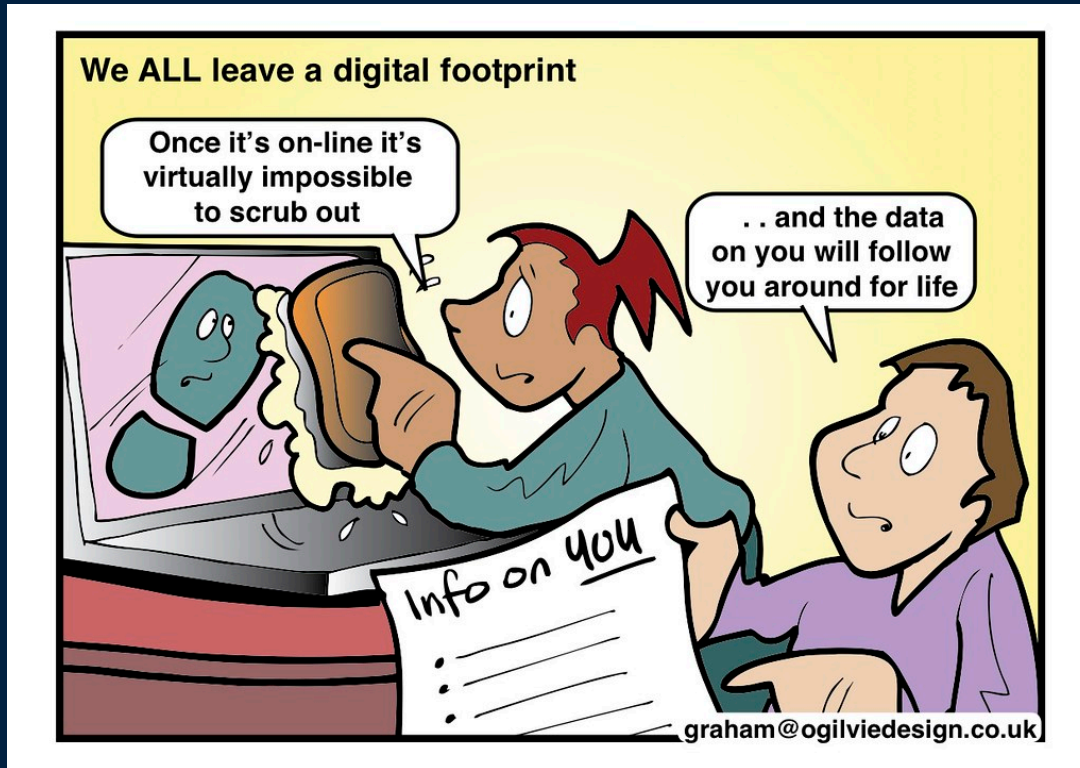
Are my actions ethical?

Summary

Ethics are shared rules we usually agree on because it provides us a shared benefit

- follow a moral compass (right/wrong)

Ethics in Data Science - Digital Footprint



We all leave a trail behind us when we use the Internet.

All social media comments, Skype calls, app uses, emails and more are part of your online history

Can potentially be seen or tracked in a database

Ethics and Data Science

The use of this data can have both positive and negative impact with societal consequences:

- Privacy
- Fairness
- Equity

Ethics guides us in doing it right:

- Are there things we could do that we agree we should not do?
- What is the **impact** of my work?

Informed Consent

Research that involves human participants requires informed consent

Why?

- Notable historical cases of research and clinical abuses
 - Holocaust (1947 – 16 individuals guilty of abuse under the guise of medical research)
 - Nuremberg Code
 - Milgram Obedience Studies (1960s – voluntary participation but not told the whole truth about the experiment)

Milgram Obedience Experiment

Stanley Milgram was social psychologist (<https://research.ucdavis.edu/wp-content/uploads/CIRTification-Curriculum.pdf>)

- He wanted to see how far “obedience” would go
- To evaluate that, he developed a study that involved deception. By this, I mean that he did not reveal whole truth about the experiment.

Let's look at a short video describing this experiment.

- Participants told to give electric shocks to an unseen individual in another room.
- Shocks were not real, but many people did not stop despite protests
- Caused anxiety, embarrassment, and discomfort for participants
- Not enough debriefing

<https://youtu.be/Kzd6Ew3TraA?feature=shared>



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 - Syphilis Study (1932-72 – informed consent was not obtained. Voluntary participation, but without knowledge of what the risks were)
 - Public outrage
 - Canada - Nutrition research on residential school children (1942-52; research on vitamin supplements, relationship between nutrition and health)
- Research ethics board: 3 “golden” rules
 - Respect people
 - Do good, not harm
 - Fairness

Informed Consent

Tri-Council: TPC2

- Consent shall be given voluntarily
- Consent can be withdrawn at any time
- If a participant withdraws, they can request the withdrawal of their data or human biological materials

Consent should be informed and include in plain language

- What the research is about, a description of the research procedures, and the responsibilities of the participant
- What are the potential risks and benefits (to participants and in general)
- Explicitly mention the voluntary and opt-out rules

Participants must have time to make the decision

Research Ethics Board

Multidisciplinary committee that ensure the safety and well-being of research participants, in accordance with scientific and ethical principles

It reviews:

- the type of participants, and means by which they will be recruited
- the procedures for conducting research (where and how)
- the materials developed to recruit, and conduct the research including emails, posters
- The potential risks and benefits
- How will the data be treated, during and after the study is completed, including how/when will the data be destroyed.

Must be approved before the study can be conducted

Limitation of informed consent

Only required for research purposes or PII collection. Not for ordinary conduct of business.

- Web companies regularly conduct experiments A/B testing to validate which interface is better for their business.
 - Group A : receives one version of the interface
 - Group B : receives a different version
 - Data analysis of which group had the best outcome in terms of business needs
 - Other types of studies might involve eyes tracking, how much time spent on specific areas of the screen, etc.

In-class discussion

Case studies from Facebook and OkCupid

- Both had included in their policies the use of data for research
- What went wrong?
- Why were people outraged?
- What is the social convention that they broke?

Limitation of informed consent

Created a new understanding of what is acceptable or not in the conduct of a business

Companies **cannot intentionally deceives** its customer during the conduct of its experiments, even if doing so is not much different from the conduct of their business, or if they were being incompetent

In-class discussion - REB

You conduct research in computer science education. Using your teaching experience, you develop a software to have students collaborate synchronously using a web interface. You need to test the efficacy of the interface to evaluate whether it is useful for students. The test consist in asking a group of user to play with the interface together, both when being side by side; and when online, and then report on their experience.

Do you still need to obtain research ethics board approval?

Who is responsible for the data?

I take a picture at the beach, and you are in the background

I record our conversation

I collect reviews on businesses (Amazon, Yelp, Trip advisor...)

I videorecord customers in my shop

The data is the property of whoever records the data

Who is responsible for the data

Some socially acceptable/unacceptable behaviour are clear:

It is not acceptable to use video recording from a store and place it on the Internet

It is acceptable to use it for video surveillance

People expect the data to be used for the purpose it has been collected.

Privacy policy continue to be in effect even after bankruptcy

Summary

We all leave a footprint on the Internet

Ethics provide a rulebook to follow for a shared societal benefit

Ethical consideration exists both in academia and in business

Research ethics board ensure ethical behaviours of researchers when conducting research involving humans

Informed consent indicated in businesses policies provide limited protection

Whoever records the information is responsible for the data they collect

There are shared expectations of what can or cannot be done with data



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