UMBC

DATA 605
Ethical & Legal Issues in Data Science

SPRING 2022

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FEBRUARY 3, 2022

AGENDA

- Introduction
- Google Form Summary
- Course Expectations & Grading
- Syllabus – Topics Covered
- Synchronous vs. Asynchronous sessions
- Introduction to Ethics

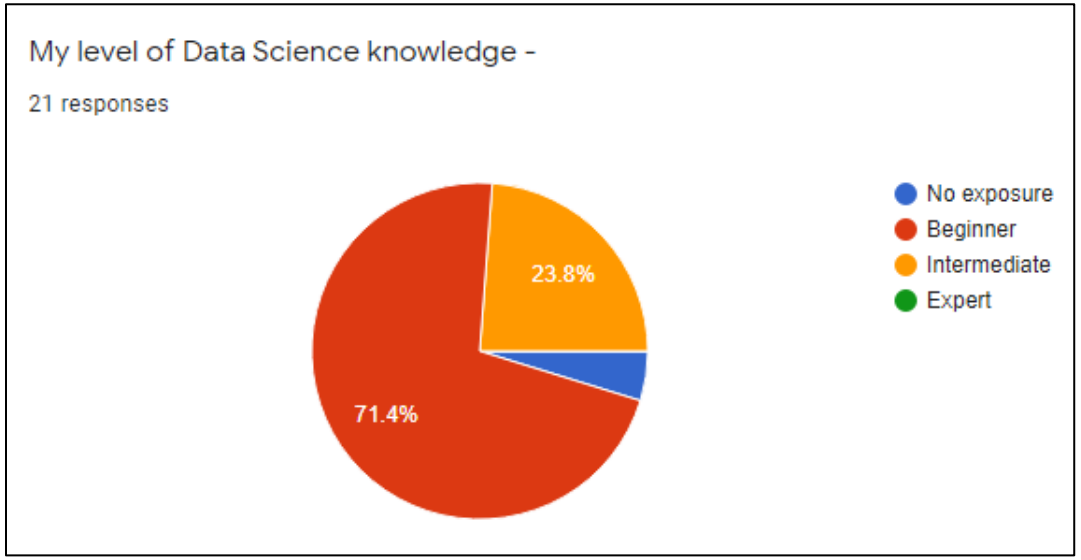
Introductions

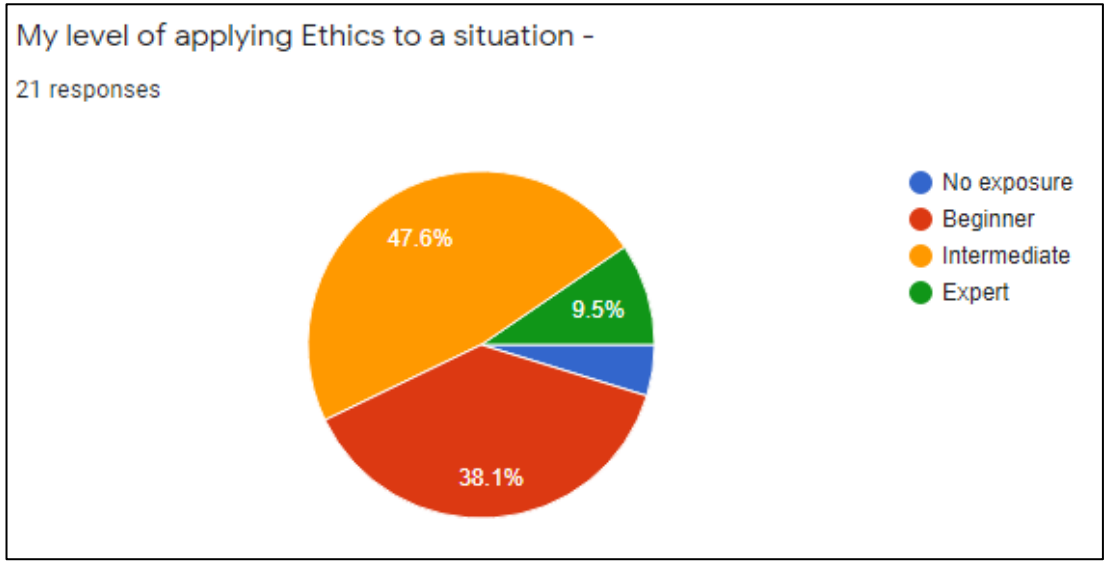
Instructor

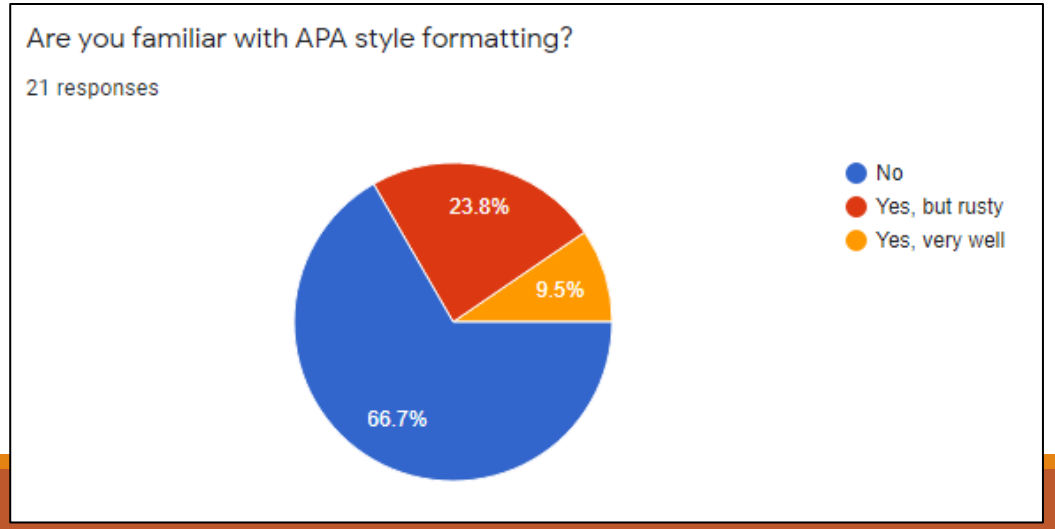
Students – Answer the following questions when you are introducing yourselves!

1. What's your name?
2. What semester are you in the program?
3. What other classes are you taking?
4. Are you a full-time student and/or work full-time?

Google Form Summary







Course Expectations & Grading

- Be present, ask questions, actively participate in discussions and turn on your cameras
- No EXTRA credit activities for this class

Grading

Participation (in-class/online discussions)	10%
Research Presentation (group)	15%
Paper #1 (individual)	25%
Paper #2 (individual)	25%
Paper #3 (individual)	25%

Syllabus – Topics Covered

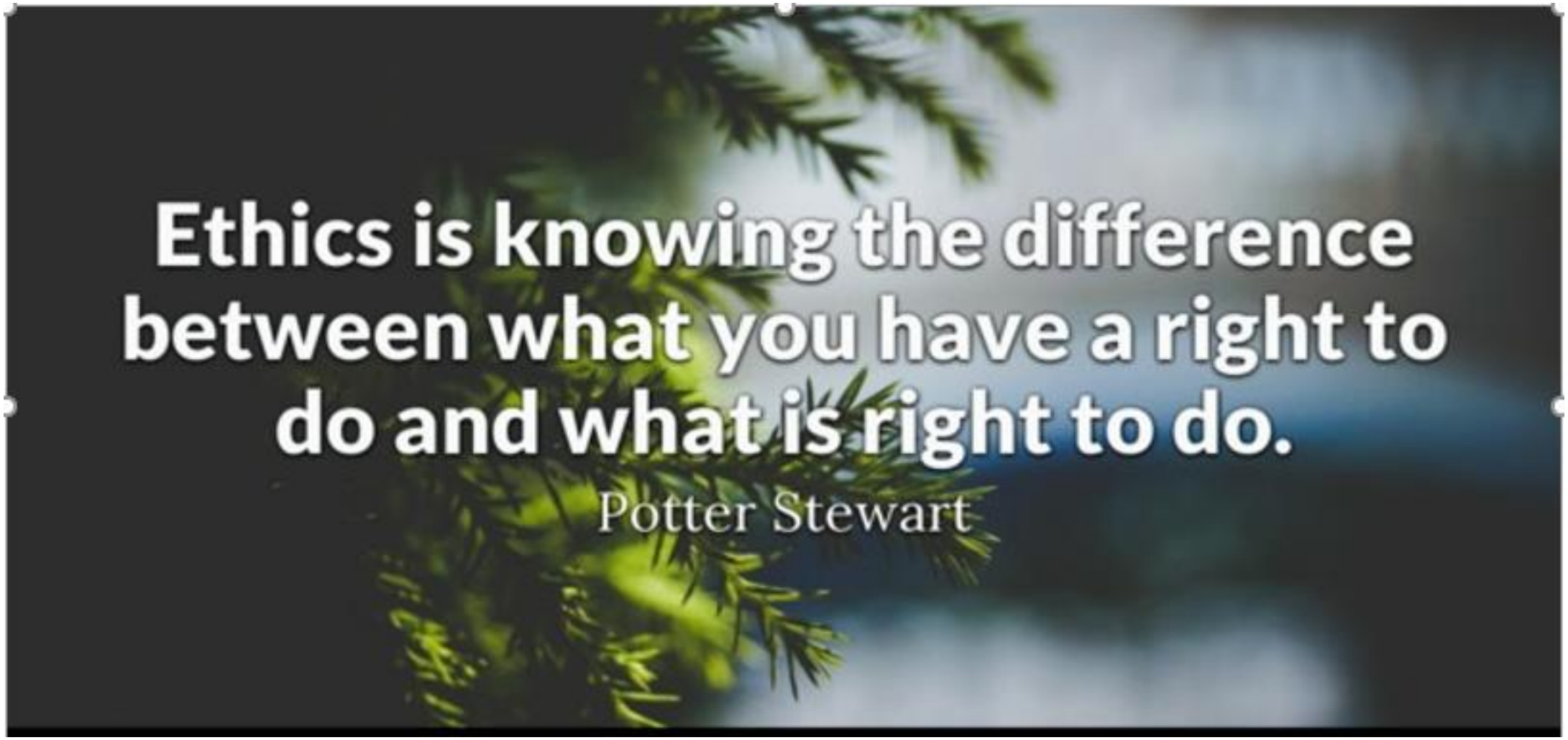
Topics Covered

Description
Foundational Ethical Principles
Ethics in the Context of Information Management
Introduction to Ethical Concepts and Frameworks
Data Science & Society
The Ethics of Data
Defining Appropriate Targets & Appropriate Usage
Ethics, Privacy & Analytics
Information Ethics, Artificial Intelligence: concepts and thought experiments
Ethics in the Data Management
Developing an Ethical Architecture for Information Management
Introducing the Ethical Enterprise Information Management framework
Information Ethics as an Information Quality System
Information Ethics and Data Governance
Information Ethics and Risk
Ethics in Data Collection
Ethics in Data Analysis

Synchronous vs. Asynchronous sessions

- Majority of the weekly classes are “live” synchronous
- Couple of classes will be asynchronous and will be informed in advance
  - February 24th will be asynchronous (no “live” session)
  - Reading materials will be shared
- Online graded discussion will be included for synchronous and asynchronous sessions

Introduction to Ethics


Ethics is knowing the difference between what you have a right to do and what is right to do.
Potter Stewart


"So that's all there is to it! Just remember to always look busy, the boss likes to drop in unexpectedly sometimes!"
FRY.
CARTOONSTOCK .com
Search ID: mfrn126


ALWAYS GIVE 100% AT WORK
12% MONDAY
23% TUESDAY
40% WEDNESDAY
20% THURSDAY
5% FRIDAY

What is Ethics?

Moral principles that govern a person's behavior or the conducting of an activity; branch of knowledge that deals with moral principles.

A system of moral principles, guides us to tell the truth, keep our promises, help someone in need, etc.

Ethics is concerned with what is good for individuals and society.

Term derived from Greek word ethos which can mean custom, habit, character or disposition.

In simple terms, **ethics is a set of rules that define right and wrong conduct**.

Ethics vs. Morals

Ethics leans towards decisions based upon individual character and the more subjective understanding of right and wrong by individuals

Morals emphasizes the widely-shared communal or societal norms about right and wrong

Examples of Ethics

A **person** chooses to return a wallet that they found on the ground to lost and found rather than keep it for themselves due to their personal ethics of honesty.

Examples of ethical behaviors in the **workplace** - obeying the company's rules, taking responsibility of your actions, trust and mutual respect for your colleagues at work.

Examples of Morals

- It is bad to steal candy (based on a value of honesty)
- Helping a friend is a good thing to do (based on a value of friendship)
- It is bad to skip a workout (based on a value of a healthy lifestyle)
- Working late at night is a good thing to do (based on a value of success)

Discussion of Ethics Through Scenarios

Breakout Session: 30 minutes

- Scenario 1
- Scenario 2
- Scenario 3
- Scenario 4

Reflect …

on the process you used in each scenario to come up with your answers

- How did you decide if particular actions or decisions were right or wrong?
- Were your reasons consistent from one case to the next?
- If someone disagreed with you on the answer to one of these questions, how would you try to convince that person that your position makes more sense?

Why are Business Ethics Important?

Helps cultivate a culture and environment of success and respect in the workplace

Helps encourage better relationships with suppliers and outside sources

Gives clients a sense of what your company stands for

Ensures financial security for investors

Strengthens employee retention

Ethics in Information Systems

Privacy: What information about oneself or one's associations must a person reveal to others, under what conditions and with what safeguards? What things can people keep to themselves and not be forced to reveal to others?

Accuracy: Who is responsible for the authenticity, fidelity and accuracy of information? Similarly, who is to be held accountable for errors in information and how is the injured party to be made whole?

Property: Who owns information? What are the just and fair prices for its exchange? Who owns the channels, especially the airways, through which information is transmitted? How should access to this scarce resource be allocated?

Accessibility: What information does a person, or an organization have a right or a privilege to obtain, under what conditions and with what safeguards?

What is Data Ethics?

Oxford professors and philosophers *Luciano Floridi* and *Mariarosaria Taddeo* states:

Data ethics is a new branch of ethics that studies and evaluates moral problems related to:

data (including generation, recording, curation, processing, dissemination, sharing and use)

algorithms (including artificial intelligence, artificial agents, machine learning and robots)

corresponding practices (including responsible innovation, programming, hacking and professional codes), in order to formulate and support morally good solutions (e.g., right conducts or right values).

Sample Data Ethics Checklist

- Have we listed how this technology can be attacked or abused? [SECURITY]
- Have we tested our training data to ensure it is fair and representative? [FAIRNESS]
- Have we studied and understood possible sources of bias in our data? [FAIRNESS]
- Does our team reflect diversity of opinions, backgrounds, and kinds of thought? [FAIRNESS]
- What kind of user consent do we need to collect to use the data? [PRIVACY/TRANSPARENCY]
- Do we have a mechanism for gathering consent from users? [TRANSPARENCY]
- Have we explained clearly what users are consenting to? [TRANSPARENCY]
- Do we have a mechanism for redress if people are harmed by the results? [TRANSPARENCY]
- Can we shut down this software in production if it is behaving badly?
- Have we tested for fairness with respect to different user groups? [FAIRNESS]
- Have we tested for disparate error rates among different user groups? [FAIRNESS]
- Do we test and monitor for model drift to ensure our software remains fair over time? [FAIRNESS]
- Do we have a plan to protect and secure user data? [SECURITY]

Discussion

The Cambridge Analytics Data Apocalypse Was Predicted in 2007

https://www.wired.com/story/the-cambridge-analytica-data-apocalypse-was-predicted-in-2007/

In the 2010s, personal data belonging to millions of Facebook users was collected without their consent by British consulting firm Cambridge Analytica, predominantly to be used for political advertising. The data was collected through an app called "This Is Your Digital Life", developed by a data scientist and his company Global Science Research in 2013. The app consisted of a series of questions to build psychological profiles on users and collected the personal data of the users' Facebook friends via Facebook's Open Graph platform. The app harvested the data of up to 87 million Facebook profiles. Cambridge Analytica used the data to provide analytical assistance to the 2016 presidential campaigns.

Additional Resources

Ethics a General Introduction

Introduction to Ethics