Data Management Assignment 1
Lecturer: Dr Emma Murphy

Assignment Context, Background and Aim

"Data is an asset but is it also a risk" (Hasselbach and Tranberg, 2017)

All data that is processed has an impact on people in some way and has the potential to create great benefit but can also cause harm if not properly managed (Keefe and O'Brien, 2018). The field of ethics provides useful concepts and frameworks to identify risk and understand best practice to data governance and data privacy. The aim of this assignment is to understand critical issues in data ethics, governance and privacy by exploring and critically evaluating real world examples.

Assignment Brief

Part 1 – Research and Group Presentation (not marked)
Working in groups, choose a data science domain that requires the processing and storing of data to predict human or machine behaviour or to make autonomous decisions (i.e. in the health, finance, education, government, transport or energy sectors). For example you might focus on Digital Health (Health) or Autonomous Vehicles (Transport), Smart Metering (Environment). Once you have selected your domain you are required to:

1. Conduct desk research to identify the critical issues for ethics, data governance and data privacy in that domain.

2. Identify one application, product or service within your chosen domain. Describe the product that you have chosen in terms of the way that it collects and processes data and how this is used to make decisions.

3. Conduct desk research try to identify publicly available information on the company's approach to data governance, data privacy and data ethics.

4. Based on your desk research conduct a First Principles Ethical test as described by O'Keefe and O'Brien (2018).

   What is the outcome of the product or service you have chosen?

   • Does it preserve or enhance human dignity?
   • Does it preserve the autonomy of the human?
   • Is the processing necessary and proportionate?

- Does it uphold the common good?

  Does the outcome violate any of these four points? If yes how could you mitigate any ethical risk?

5. Present your findings to the class in a presentation (maximum 15 minutes).

Presentations will not be marked but you will be given formative feedback that should help you to complete the individual report that will be assessed.

Part 2: Individual Report (marked)
Based on the research conducted in Part 1, write up an individual report with the following structure:

- Introduction - Provide a background to the product that you have chosen by describing the key ethical and legal issues in the wider domain. [250 words]
- Describe the product that you have chosen detailing the way that it collects and processes data with reference to its data lifecycle. [250 words]
- Identify and critique the publicly available information on the company's approach to data governance, data privacy and data ethics. [500 words]
- Based on your desk research conduct a First Principles Ethical test as described by O'Keefe and O'Brien (2018). You can also reference other ethical theories in your analysis. [250 words]
- Present recommendations on how the company's approach to data governance, data privacy and data ethics could be improved or clarified based on the first principles ethics assessment that you conducted [500 words]
- Summary and Reflection - Summarise key findings and reflect on what you have learned during both parts of the assignment [250 words]
- References

For part 2, you can decide to use the product that you researched for your group presentation or you can choose a different product and/or domain for your individual report.

Submission Details:

Your final *Individual Report* should be submitted to Brightspace as a word document, 1.5 spaced, size 12 font with clear heading structures, using APA referencing style with a maximum of 2000 words.

Deadline:
Presentation: Schedule will be published with times for each group during week 5 and week 6.

Individual Report: Sunday 14 March 2021

Late Submissions
Extensions due to acceptable personal circumstances must be requested by email in advance of the deadline.

Assessment Rubric
This assignment is worth 50% of the overall module mark.

Rubric for the Individual Report (100)
Background and Context - the key ethical and legal issues in the wider domain (10)
[1-2] Poor understanding and analysis of key issues
[2-4] Weak understanding with some analysis of key issues
[5-6] Sufficient understanding with some analysis of key issues
[7-8] Good understanding with fair analysis of key issues
[9-10] Excellent understanding with deep analysis of key issues
Presentation of chosen product and relevant data processing and lifecycle (15)
[1-3] Product poorly presented, no clear understanding of data processing or data lifecycle
[4-6] Product adequately presented but data processing and lifecycle unclear.
[7-9] Product adequately presented with clear description of data processing and lifecycle
[10-12] Product well presented with clear description and good understanding of data processing and lifecycle
[13-15] Product optimally presented with clear description and excellent understanding of data processing and lifecycle
Identification and critique of the publicly available information on the company's approach to data governance, data privacy and data ethics (20)
[1-4] No identification or critique provided
[5-8] Some identification and critique without clear evidence of research
[9-12] Adequate identification and critique with evidence of research
[13-16] Identification and critique are clearly presented with evidence of research and critical thinking
[17-20] Identification and critique are optimally presented with evidence of research with deep analysis and deep critical thinking.
Ethical Impact (First Principles) Evaluation (15)
[1-3] Poor understanding and application of First Principles ethical test with no critical thinking.
[4-6] Weak understanding and application of First Principles ethical test with some analysis and no critical thinking.
[7-9] Sufficient understanding and application of First Principles ethical test with some analysis and some critical thinking

[10-12] Good understanding and application of First Principles ethical test with fair analysis and fair critical thinking.

13-15] Excellent understanding and application of First Principles ethical test with deep analysis and deep critical thinking.

Recommendations for Data Governance and Data Privacy (20)

[1-4] No recommendations provided

[5-9] Some recommendations without clear support from literature or critical thought.

[10-13] Adequate recommendations with some support from literature and critical thinking

[13-16] Recommendations are clear and well supported and defined with analysis and critical thinking.

[17-20] Recommendations are extremely convincing, well supported and defined with deep analysis and deep critical thinking.

Summary and Reflection (5)

[1] No summary or reflection

[2] Summary with poor reflection on learning

[3] Summary of key findings with basic reflection on learnings

[4] Key findings well summarised and expressed, insightful reflection on learning

[5] Key findings optimally summarised and expressed with insightful reflection on learning

Report Structure; Use of language; Referencing (15)

[1-3] Poorly organised, very unclear language with serious errors and poorly referenced.

[4-6] Adequately organised and expressed. Clear use of language but with significant errors/typos. Fair referencing but with some inconsistency.

[7-9] Generally well organised and expressed with clear use of language but with minor errors/typos. Competent referencing but with some inconsistency.

[10-12] Well organised and expressed, easy to follow and clear use of language. Very good referencing.

[12-15] Optimally organised and expressed. Excellent use of language with no errors at all. Fully and appropriately referenced.

Learning Outcome Alignment

1	Demonstrate cognisance of the roles and responsibilities of data management stakeholders and be able to critically evaluate their significance in relation to relevant EU and International legislation.	
2	Analyse the critical issues for data protection and data governance in public and private sector organisations across different domains such as health, education, transport and energy.	X
3	Identify the role data quality plays, discuss deficits and limitations and explain appropriate remedies	
4	Contribute to key ethical debates in data science and machine learning (i.e. data quality, bias in data, informed consent and privacy issues)	X
5	Design and implement data balancing and fairness strategies to overcome bias in data	
6	Critically analyse different GDPR functions and responsibilities for organisations of various sizes	
7	Critically analyse the impact of data privacy needs on organisations and individuals	X
8	Design and implement anonymisation strategies and examine related issues	
9	Design a data management plan for a complex multistakeholder prediction tool in the field of digital health.	
10	Conduct a Data Protection Impact Assessment (DPIA)	