

# COMP4920 Group Assessment: AI/ADM Case study

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## 1 Introduction

In this assignment you are to consider, discuss, and present your arguments on the ethical dilemmas around a case study of an AI or Automated Decision-Making (ADM) system that is already deployed or planned to be deployed in the society. You are to work in a group of three. All members of a group must be from the same tutorial. In those cases where the total tutorial numbers do not divide into three perfectly, your tutor will arrange things. The assessment components include a group presentation during your tutorial and a project report.

## 2 Background

According to a McKinsey's report<sup>1</sup>, and a more recent one on the state of AI<sup>2</sup>, AI has a huge potential to significantly boost economic productivity. The adoption of AI-based automation, or ADM-S technologies are increasingly prevalent in the private and public sector with a direct impact on our society. With AI and ADM being used in influencing the situations or outcomes where people's lives or livelihoods are at stake, responsible innovation practices and FATE (Fairness, Accountability, Transparency, and Ethics) in AI is becoming more paramount. These ethical frameworks are often not considered during the design of an AI or ADM technology. Although this technology or system might have been designed "for good", it might lead to clashes of values and objectives among the potential stakeholders of the proposed technology.

## 3 Your Task

Your task is to investigate a particular AI or ADM technology as if you and your team are the ones who are responsible for deciding whether to adopt and deploy this technology, and if so, how to do it ethically and responsibly.

1. Pick a technological case study to be investigated. Describe the technology, the purpose, the scope, the needs, and the benefits.
2. Consider your users and the stakeholders. List them all and describe their attributes and traits, needs and skills, why they are considered a user or a stakeholder.

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<sup>1</sup>Modeling the impact of AI on the world economy, <https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontier-modeling-the-impact-of-ai-on-the-world-economy>

<sup>2</sup>The State of AI in 2021, <https://www.mckinsey.com/capabilities/quantumblack/our-insights/global-survey-the-state-of-ai-in-2021>

3. Using value-sensitive design, conduct a conceptual investigation around the human values in the technology. Pick three main users/ stakeholders (one per every group member) out of your list of possible users/stakeholders and perform an imaginary role play to discuss the possible impact of the technology to them. You can use the Judgment Call game<sup>3</sup>(printable) as a tool to review these technologies from the point of view of the stakeholders. Discuss the impact of the technology along each of the ethical principles (e.g. Microsoft's ethical principles of fairness, privacy and security, reliability and safety, transparency, inclusion, and accountability)<sup>4</sup>, as shown in the Judgment Call's cards<sup>5</sup>. Ideally, perform this task before you conduct the research in the next step. Record your discussions (e.g. take photos) and summarize the conceptual investigation<sup>6</sup>.
4. Conduct research on how similar technology has been used. Pick two of the issues or concerns in relation to the technology that were discussed by the stakeholders, which might include fairness, transparency, explainability, and/or responsibility issues, ethical and/or discrimination risks. Provide critical analysis on its impact with examples from similar or related real-world technologies.
5. Compare your findings with your initial conceptual investigation. Are there any agreements or disagreements? Are the findings complementary? What can you conclude from this exercise?
6. Provide your recommendation. Should you adopt and deploy this technology? If so, do you need to perform some changes or adapt it in a specific way?
7. Prepare a group presentation and project report

## 4 Group Presentation

- To be scheduled during your Week 9-10 tutorial.
- Each group presentation is 15 mins, followed by 3 mins Q&A.

## 5 Group Report

- Word length: 4000-4500 words excluding references and appendix (which can include photos).
- There is no prescribed template. You are suggested follow the structure of the tasks.
- Ideally, prepare an interim report prior to your presentation. Then incorporate feedback from your class and tutor to improve your report.
- The report is due at the end of Week 11: **Friday Nov 25th, 23:59**.

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<sup>3</sup>Stephanie Ballard, Karen M. Chappell, and Kristen Kennedy. 2019. Judgment Call the Game: Using Value Sensitive Design and Design Fiction to Surface Ethical Concerns Related to Technology. In Proceedings of the 2019 on Designing Interactive Systems Conference (DIS '19). Association for Computing Machinery, New York, NY, USA, 421- 433, <https://doi.org/10.1145/3322276.3323697>

<sup>4</sup>Microsoft's ethical principles, <https://www.microsoft.com/cms/api/am/binary/RE4pKH5>

<sup>5</sup>Judgment Call, <https://learn.microsoft.com/en-us/azure/architecture/guide/responsible-innovation/judgmentcall>

<sup>6</sup>In an ideal world, you will follow this up with a user study, but this will require more time and effort to find the users/stakeholders, within a human ethics approved study, which will not be feasible in the timeframe of this course.se

## 6 Course Learning Outcomes

This assignment will contribute to the following Course Learning outcomes:

- Students will discover and learn to define ethical values, principles, and practices towards responsible research and innovation of technological and computing advances.
- Students will have an increased awareness of the ethical issues and pitfalls in their own professional practice of developing novel technologies, including AI (e.g. fairness, transparency, accountability), and learn about existing efforts to mitigate these issues.
- Students will learn to discuss ethical dilemmas around specific technological case studies openly and robustly.

## 7 Assessment Weight

- Presentation - 20% (marked individually)
- Report - 30% (marked collectively)