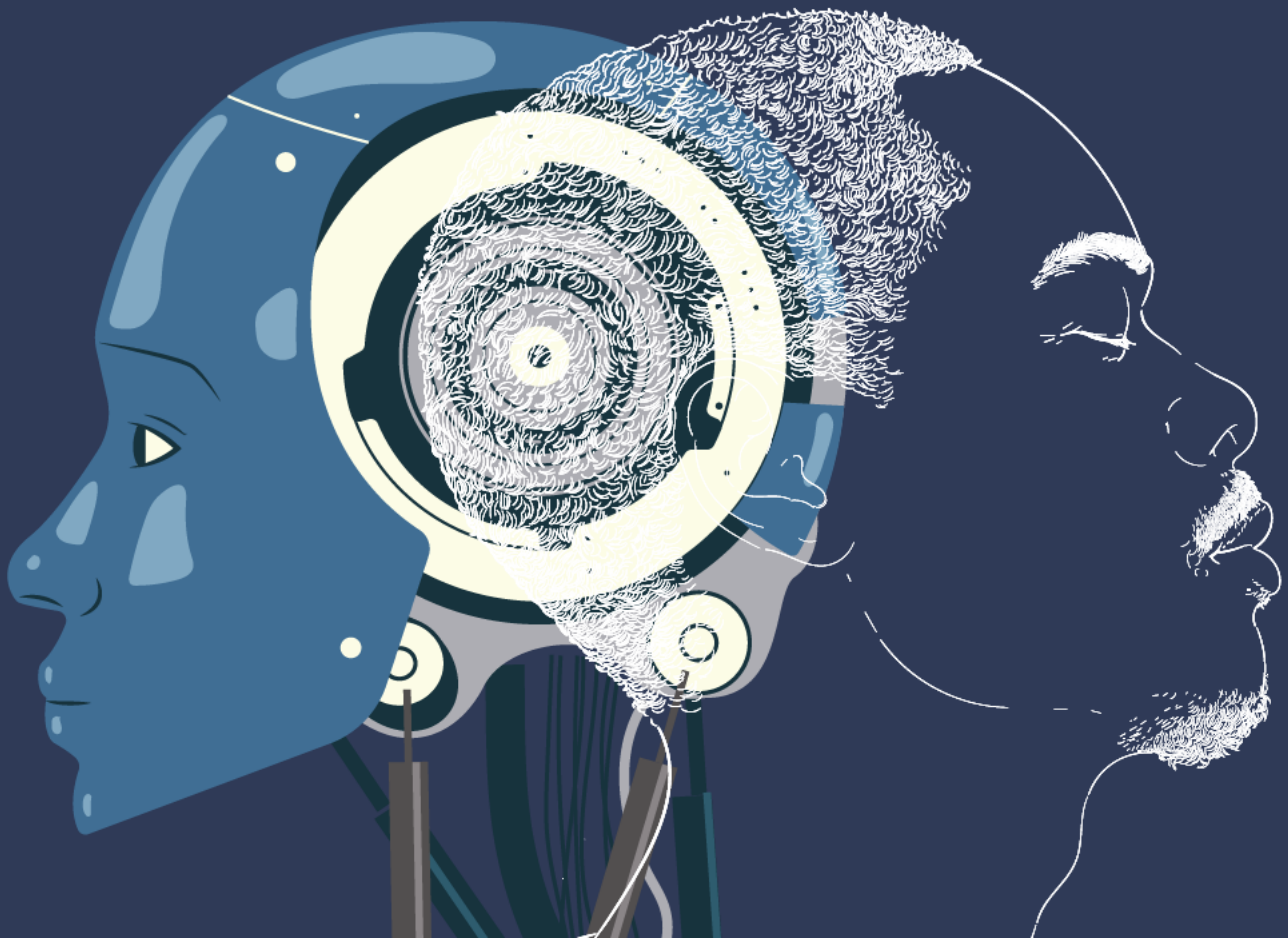
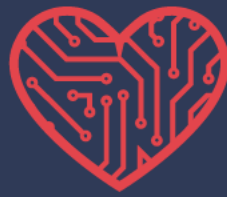


# Appendices



**Author**

Mario Alberto Sosa Hidalgo  
mariososadi@gmail.com

August, 2019

\*\* The cover was designed using illustrations from Freepik.com

# Table of Contents

**APPENDIX A**

Interview Guide (Empirical Research)

**APPENDIX B**

Analyses Performed for the Empirical Research Stage

**APPENDIX C**

Context Mapping Analysis

**APPENDIX D**

Stakeholders Personas

**APPENDIX E**

Quick Survey Results

**APPENDIX F**

Android Application Provotype

**APPENDIX G**

Quick Survey Results

**APPENDIX H**

Provocative Poster (Action Research Cycle 2)

**APPENDIX I**

Ethical Puzzle

**APPENDIX J**

Canvas of the Ethical Framework for AI

**APPENDIX K**

Project Brief (Approved)

## appendix A

# Interview Guide (Empirical Research)

The present interview is part of a master thesis collaboration between the TU Delft and MOBGEN | Accenture Interactive. The topic of the thesis project is the ethics of AI in the development of AI applications. All the information collected from this interview will be anonymized and kept confidential. If it is okay with the interviewee, the session will be recorded for research purposes only and further qualitative data analysis.

### First part: Ethical knowledge and opinion of the ethics of AI - 15 min

1.1 What is your role in MOBGEN | Accenture Interactive/TU Delft research department? (only for employees & researchers)

1.2 Do you have any experience working with AI?

1.3 What is your opinion regarding AI (in general)?

1.4 What's your opinion regarding narrow AI applications (i.e. ML based home appliances)?

1.5 In your opinion, what is the new value that AI/ML applications can provide?

1.6 What do you think are the ethical considerations that developers should take into account for AI/ML applications?

1.7 What are your major concerns regarding AI/ML applications?

### Second Part: Of failure and consequentialism - 15 min

#### Consequentialist approach:

Consequentialism is the class of normative ethical theories holding that the consequences of one's conduct are the ultimate basis for any judgment about the rightness or wrongness of that conduct. Thus, from a consequentialist standpoint, a morally right act (or omission from acting) is one that will produce a good outcome, or consequence.

2.1 What does "failure" means to you?

2.2 What's the AI/ML application that you use more often?

2.3 What would be a failure scenario of this particular ML/AI application?

## appendix B

# Analyses Performed in the Empirical Research Stage

### B.1 Analyses for the Creation of a Theoretical Framework

First, an analysis using the stakeholder map defined for an AI application was executed. This activity showed how the ethical principles could affect the different stakeholders involved in the development journey. During the analysis it was found that some principles would affect the relationship between users and implementors like transparency, explainability, safety, and data privacy among others. On the other hand, some principles like governance and accountability would be more related to the Implementors and Researchers as these could be taken as high level-issues. Although

some interesting insights were found with this analysis, no strong conclusion was reached and more analysis sessions were executed.

A second analysis session was performed on where to include the ethical considerations during the development journey. From this analysis it was concluded that some ethical principles could be considered in a higher level throughout the whole development process. Furthermore, some other principles could be considered to be included in determined low-level phases. However, at the end of the session, it was concluded that as there was no sense in defining ethical principles in a time



Figure 1: A visual analysis made using the stakeholders map and the classification of the ethical principles.



scale as the one of the development journey of an AI application. This is because of the current lack of ethical tools and ethical awareness in the field. In other words, ethics should be considered in every step of the process as it is something that must not be overlooked. Due to the results obtained on these analysis sessions, it was decided to look for a more developed

approach in other fields (i.e. IoT, blockchain). As it is mentioned in Chapter 5, a more ethically robust approach was found in the literature which has been adapted to the context of the ethics of AI. In order to do so, a couple of more classifications were performed using the ethical principles as Actions or Consequences, so they could be integrated into the framework.

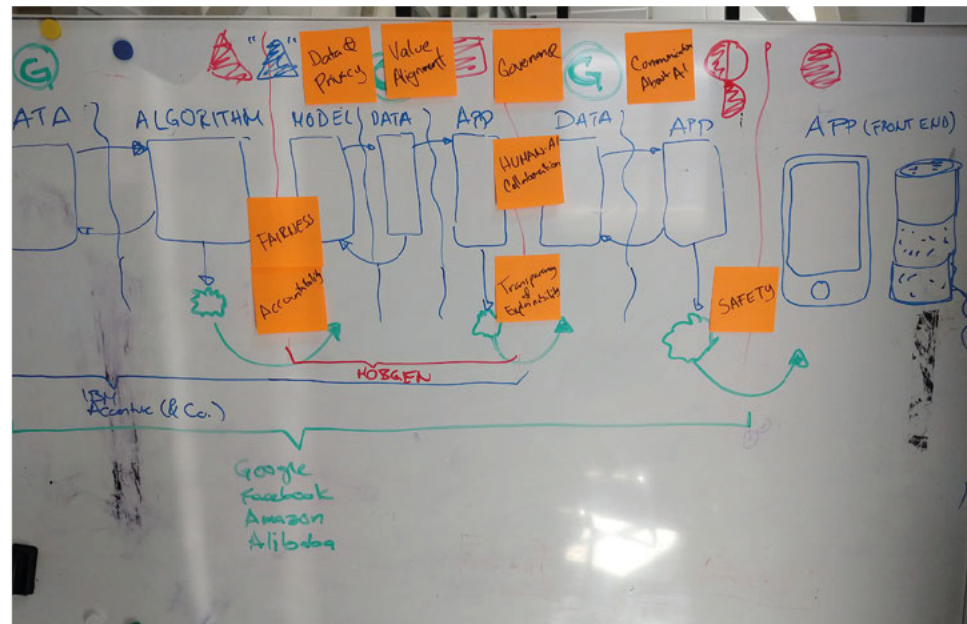


Figure 2: A visual analysis made using the development journey of an AI applications and the ethical principles.

The final result is presented in Chapter 5 where the ethical principles were excluded from the main ethical cycle (as they were too specific) but were added to the final canvas.

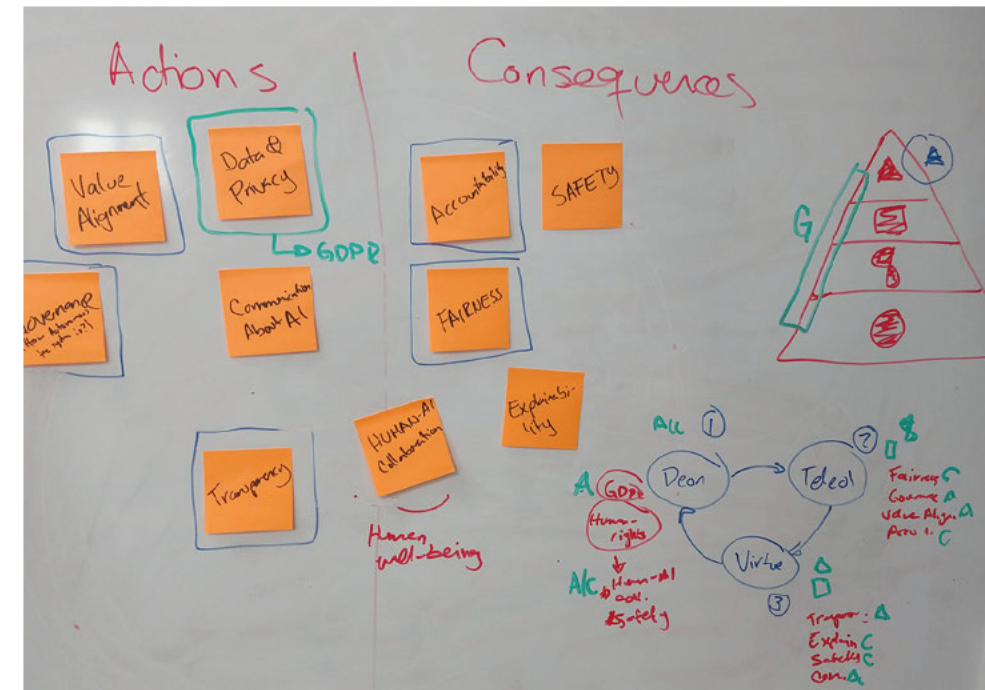


Figure 3: The Actions vs Consequences analysis performed in order to include the ethical principles to the framework.

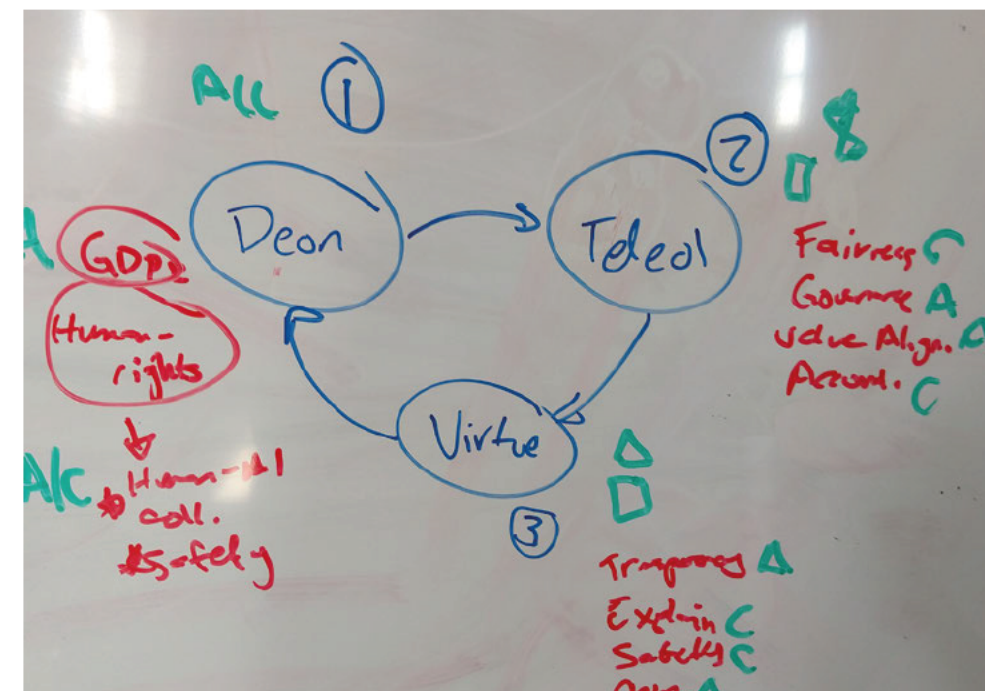


Figure 4: The first version of the Ethical Framework for AI.



## appendix C

# Context Mapping Analysis

Some of the tools used for the analysis made with the Staement Cards described in Chapter 4 are shown in this Appendix. From a sample of a single participant Statement Cards (there were 16 in total) to some pictures of the clusters formed and the line of thought followed.. Interview transcripts are too long to be included.

Paraphrase		<b>AI is the new thing, so it is good to be involved on it.</b>	Paraphrase		<b>We need regulations for AI to hold accountability of failure.</b>
Quote	Page #	Q: "What's your opinio about AI?" I feel like AI is one of the biggest things thats gonna happen, it is such a powerful thing... So, either way, I think it's exciting, it's important.	Quote	Page #	Q: "What are the ethical considerations that developers...?" How do we design regulations and laws around this stuff because it will go wrong sometimes. You know, the way we perceive the world, somebody needs to be held responsible.
Space for notes during the session			Space for notes during the session		
Paraphrase		<b>The social use of AI can bring people together.</b>	Paraphrase		<b>AI (and technology) is taking away our humanity</b>
Quote	Page #	Q: "Do you use any AI application?" Yeah, I have a Google Home.... I study how my friends interact with it. And so when my friends come over, I find it fascinating just to observe, how they interact and how they perceive its presence.  And some things that I do think are really interesting is more like the social dynamics around it. So it's like, I like the fact that it is more of a collective interface. More like a collective device.	Quote	Page #	Q: "What are the ethical considerations that developers...?" How do we ensure that AI is helping us to be more human? And it doesn't isolate us inside because if everything is automated we will no longer have the need to engage with the world. So isolation will be perfectly possible...
Space for notes during the session			Space for notes during the session		
Paraphrase		<b>Smart Assistants (AI) were cool before but now they are boring and not useful (just a fancy interface).</b>	Paraphrase		<b>Not involving all stakeholders during AI development is a big concern.</b>
Quote	Page #	Q: "What value do this AI brings to you?" Yeah, I mean, to be really honest, as a user, I think at this point it is not that valuable (...) I mean, I asked it today, when's my next meeting, whats on my calendar? What's the weather? (...) so I'm now interactign through a different interface but I'm not doing anything that I could not previously do on my phone. It just saves me a few tabs.	Quote	Page #	Q: "What are your major concerns about AI?" Most of the people who would "benefit" from AI are not part of the conversation. We are not using AI to solve major problems, we are using that to sell more shit (...) and the people who are going to be most affected by the consequences are like least engaged in the process. That's my biggest concern.
Space for notes during the session			Space for notes during the session		
Paraphrase		<b>Ethics depends of a binary right/wrong approach</b>	Paraphrase		<b>AI would create mre social inequality.</b>
Quote	Page #	Q: "What's your definition of ethics?" What is right and wrong... a moral judgement of right and wrong.	Quote	Page #	Q: "What are your major concerns about AI?" That will get this like crazy dystopian world where some of us live in beautifully smart connected houses where everything's automated and wonderful and our burgers are injected with extra nutrition and we have fucking designer babies and we have CRISPR in our bathroom in case we feel sick crazy stuff and then there's the rest of the world suffering like eating trash.
Space for notes during the session			Space for notes during the session		
Paraphrase		<b>Biases and Accountability are the most important ethical considerations.</b>	Paraphrase		<b>Proactiveness of the AI in a Smart Home Assistant is not a cool feature.</b>
Quote	Page #	Q: "What are the ethical considerations that developers...?" One thing that I think is interesting is like bias in the data, often for historical reasons (...) If your data is extremely biased towards highly digitalized Western Caucasik Eurocentric view of the world and thats problematic. The other ones goes around regulation, for example with the moral machine (...) Even if you kill anyone, still someone's dead, who's responsible? Who's responsible for the outcome, ether direct outcome or like in healthcare (...) AI things that may help you in decision making, what happens with it goes wrong and it is fatal or has serious consequences.	Quote	Page #	Q: "What would be a failure scenario of this particular ML/AI application?" Now, sometimes he starts yelling me in Spanish (...) Random proactive behavior of the AI system definitely feels weird. Like, responsive interfaces are feel very different than proactive interfaces, when it just starts speaking and I didn't ask it for something.
Space for notes during the session			Space for notes during the session		

Figure 5: Sample of the Contextmapping cards used for this project based on the insights from one of the interviewees.



Figure 6: In total, 120 cards resulted from the analysis of the interviews transcripts.

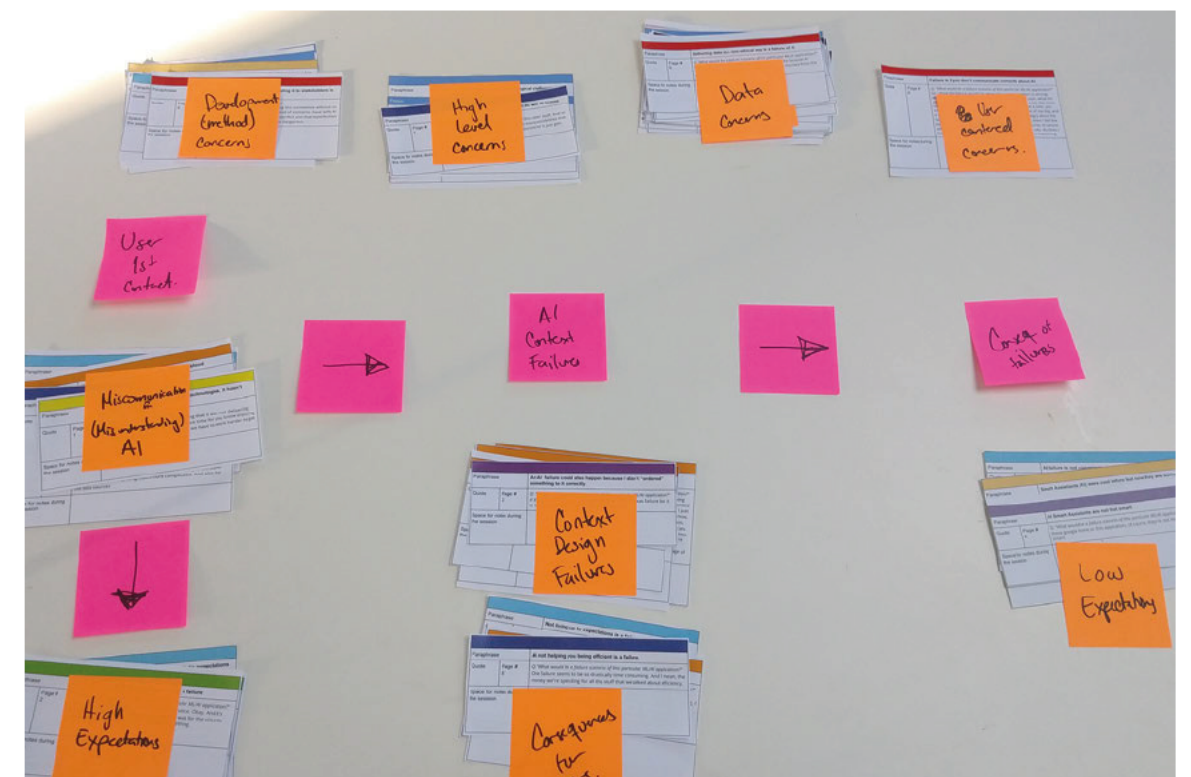


Figure 7: Example of the different clusters created with the statement cards. In this case, the clusters were formed following a consequentialist result mixed with an interaction starting process of a user with and AI application.



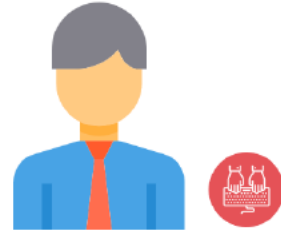




## Alessandro

AI Implementor

Digital Development Lead @ MOBGEN | Accenture Interactive



### Personal Characteristics

- Strong technical and development skills
- Always open to learn more about AI and other new technologies
- Extremely Analytical

### Needs & Goals

- Looks for delivering a high quality AI application.

### Drawbacks

- Not actual interest in including ethics in the development process due to the difficulty of this task.
- Looks for performance of solution before ethics.

### Ethical Views

- Personal level: Accountability is important .
- Ethical flags and interest only on:
  - Data privacy
  - Bias in data

## Cindy

AI User

Conversational Agents User (i.e. Alexa)



### Personal Characteristics

- Conceives ethics as a high-level complex concept.
- Ethics is subjective, but important at the same time.
- Always willing to buy the latest AI technology.

### Needs & Goals

- Need to develop trust in AI technology and developing company.
- Be efficient with the proper use of AI applications.
- Get entertained by using AI applications.

### Drawbacks

- Hard time understanding complexity.
- Not willing to pay for complex things.

### Ethical Views

- Personal level: "simple ethical principles vs. complex ethical principles".
- Ethical flags and interest (simple ethics) only on:
  - Bias in Data (Fairness)
  - Accountability
  - Data privacy

## appendix E

# Quick Survey Results

Although the quick survey performed did not reach a statistically significant population of respondents (only 19), some interesting insights were found. An overview of the questions, scale and answers are shared in this Appendix.

### 1. For me, Responsible AI refers to:

- The accountability of any project involving AI.
- Developing AI technology taking into consideration its ethical implications.
- All of the aforementioned

### 2. How often do you follow any type of ethical assessment (reflection session with team, discussion with client, personal reflection) before or during any project?

1. Always
2. Usually
3. Sometimes
4. Never

### 3. Are you honest when sharing information with other stakeholders of the projects you work on?

1. Always
2. Usually
3. Sometimes
4. Never

### 4. Do you balance organizational and personal needs during a project?

1. Always
2. Usually
3. Sometimes
4. Never

### 5. Are you able to manage your personal biases during the course of a project?

1. Always
2. Usually
3. Sometimes
4. Never

### 6. Do you challenge yourself to "do the right thing" during a project?

1. Always
2. Usually
3. Sometimes
4. Never

### 7. Does your organization have a written ethics policy?

1. Yes
2. No
3. I don't know

### 8. Are ethical behaviors rewarded within your organization?

1. Yes
2. No
3. I don't know

9. Did you consider some of the ethical implications, besides GDPR, of applying/developing AI before or during a project? (i.e. Data Privacy, Accountability, Explainability, etc)

1. Yes
2. No
3. Only GDPR related

<b>1. For me, Responsible AI refers to:</b>	
All of the aforementioned	9
Developing AI technology taking into consideration its ethical implications.	8
The accountability of any project involving AI.	2
<b>2. How often do you follow any type of ethical assessment (reflection session with team, c</b>	
Never	6
Sometimes	9
Usually	4
Always	0
<b>3. Are you honest when sharing information with other stakeholders of the projects you w</b>	
Never	0
Sometimes	1
Usually	3
Always	15
<b>4. Do you balance organizational and personal needs during a project?</b>	
Never	0
Sometimes	3
Usually	12
Always	4
<b>5. Are you able to manage your personal biases during the course of a project?</b>	
Never	0
Sometimes	3
Usually	12
Always	4

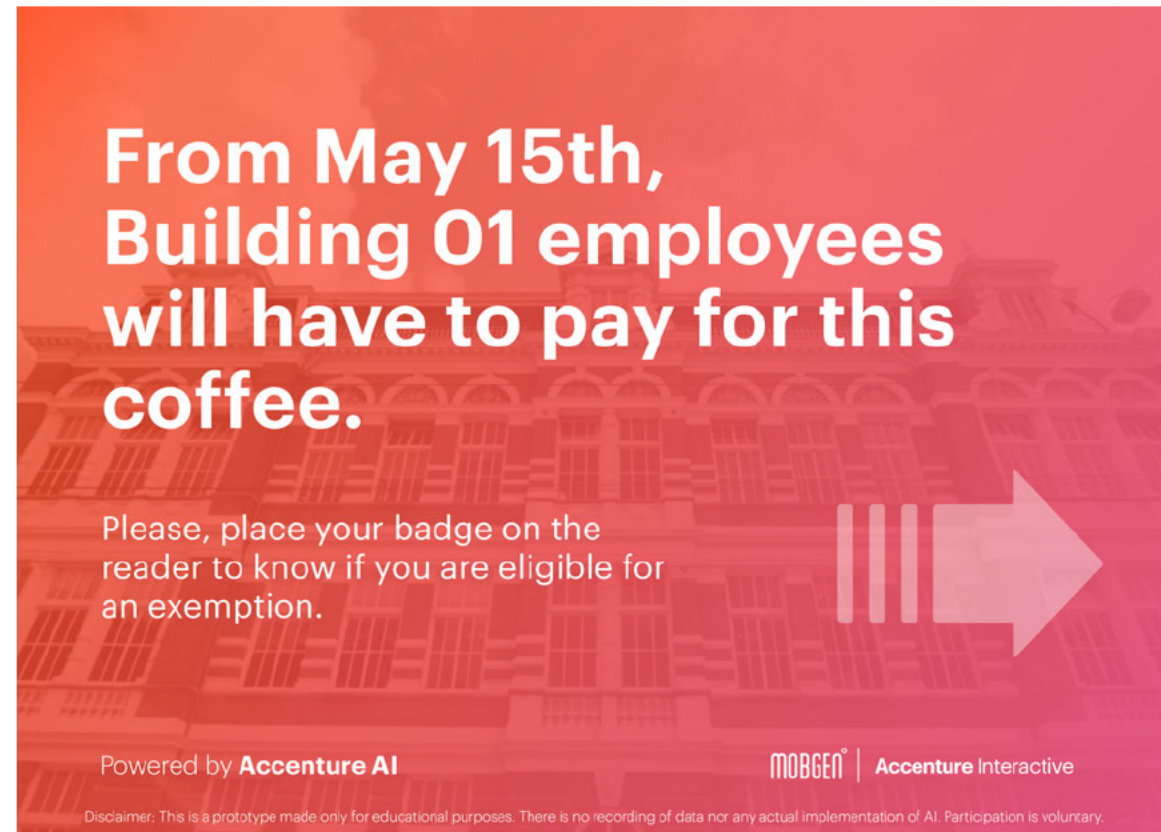
<b>6. Do you challenge yourself to "do the right thing" during a project?</b>	
Never	0
Sometimes	6
Usually	1
Always	12
<b>7. Does your organization have a written ethics policy?</b>	
I don't know	9
Yes	10
<b>8. Are ethical behaviors rewarded within your organization?</b>	
Yes	4
I don't know	10
No	5
<b>9. Did you consider some of the ethical implications, besides GDPR, of applying/developin</b>	
Yes	12
No	2
Only GDPR related	5



## appendix G

# Android Application Provotype

All the screens of the provotype in the form of an Android application are presented in this Appendix.



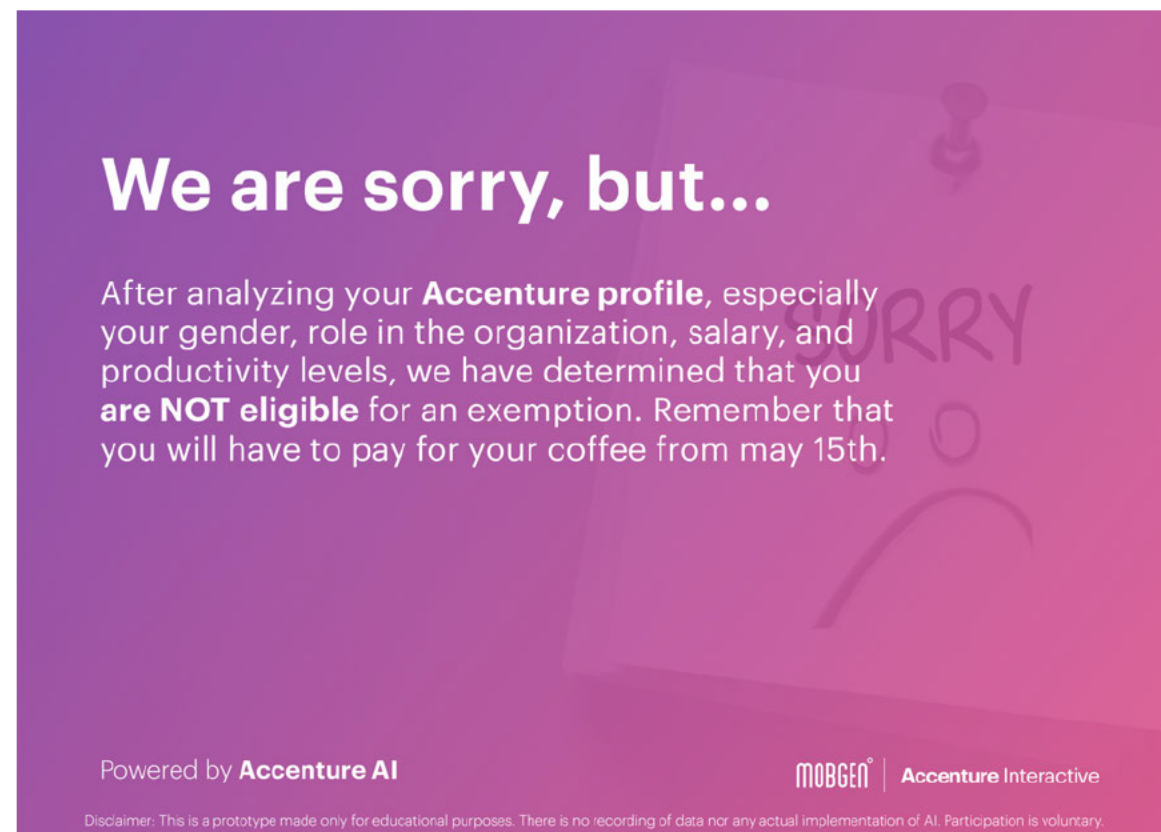
**From May 15th,  
Building 01 employees  
will have to pay for this  
coffee.**

Please, place your badge on the reader to know if you are eligible for an exemption.

Powered by **Accenture AI**

MOBGEN | Accenture Interactive

Disclaimer: This is a prototype made only for educational purposes. There is no recording of data nor any actual implementation of AI. Participation is voluntary.



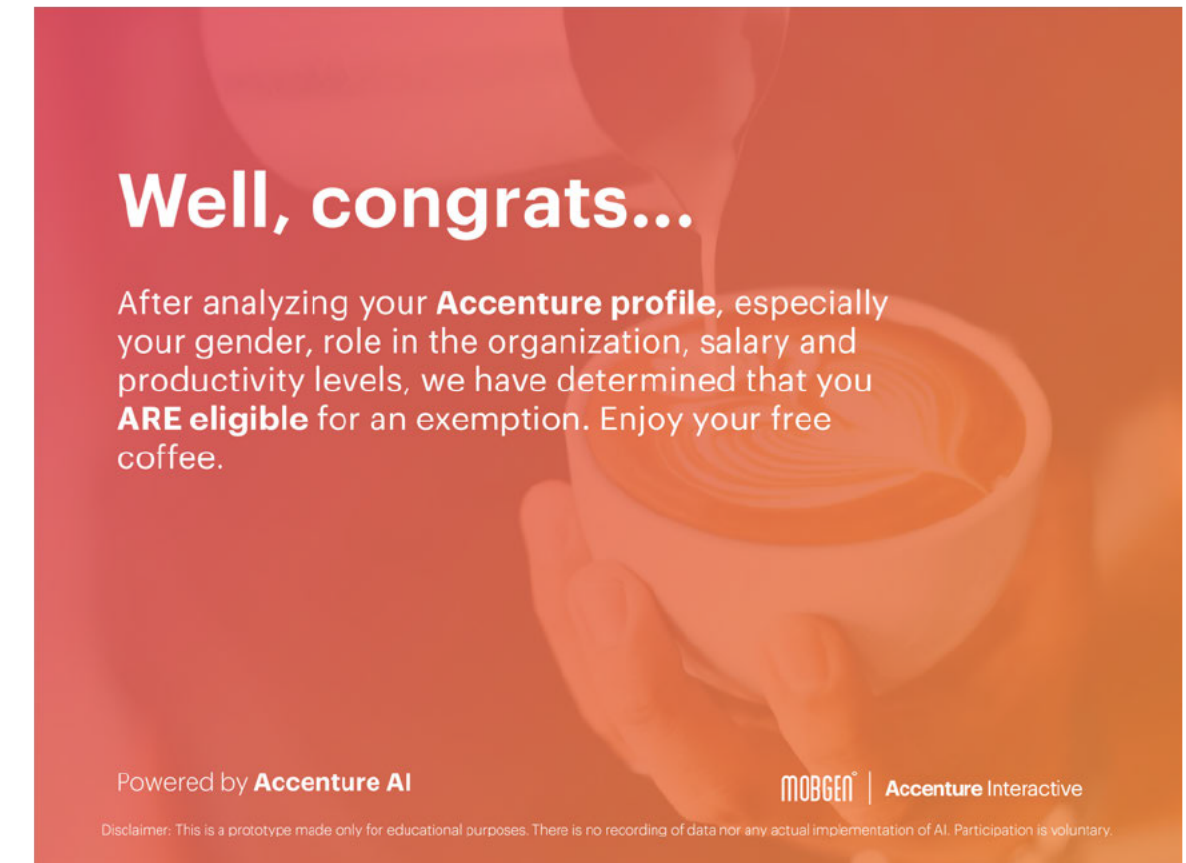
**We are sorry, but...**

After analyzing your **Accenture profile**, especially your gender, role in the organization, salary, and productivity levels, we have determined that you **are NOT eligible** for an exemption. Remember that you will have to pay for your coffee from may 15th.

Powered by **Accenture AI**

MOBGEN | Accenture Interactive

Disclaimer: This is a prototype made only for educational purposes. There is no recording of data nor any actual implementation of AI. Participation is voluntary.



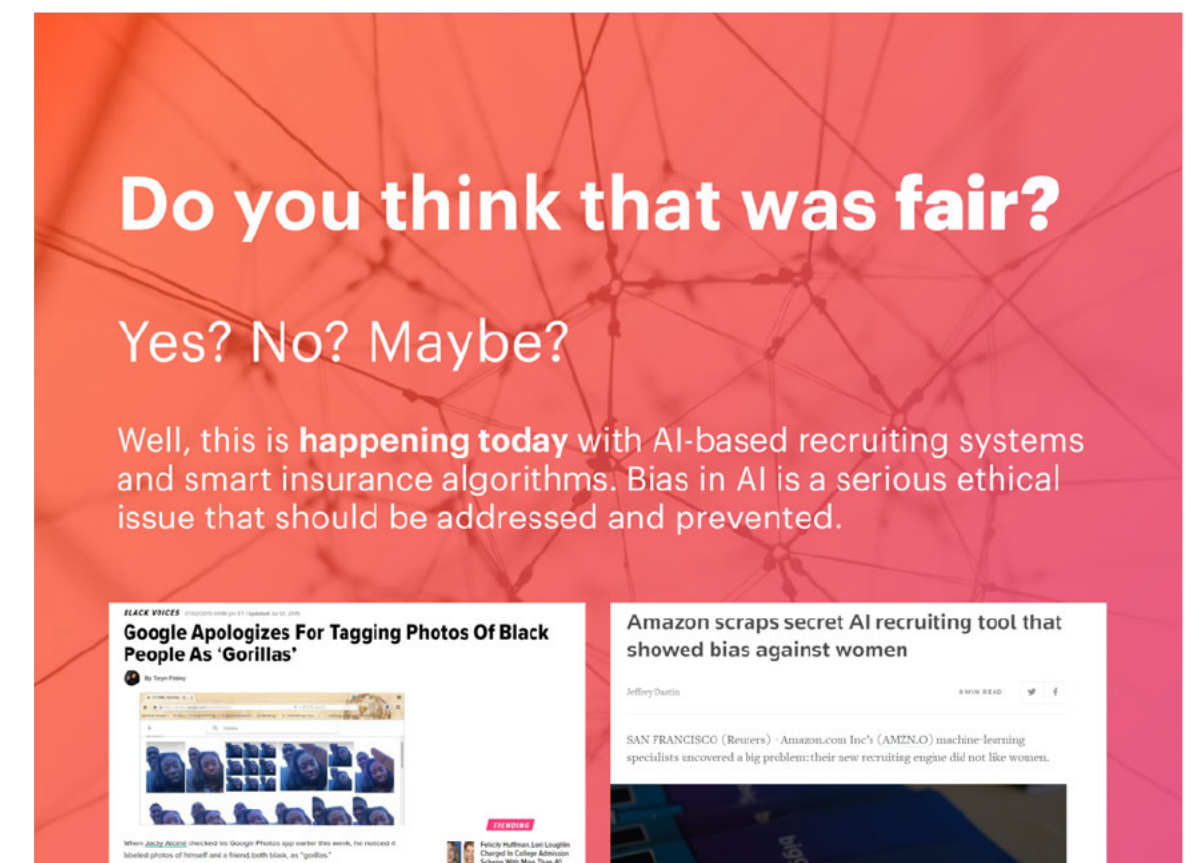
**Well, congrats...**

After analyzing your **Accenture profile**, especially your gender, role in the organization, salary and productivity levels, we have determined that you **ARE eligible** for an exemption. Enjoy your free coffee.

Powered by **Accenture AI**

MOBGEN | Accenture Interactive

Disclaimer: This is a prototype made only for educational purposes. There is no recording of data nor any actual implementation of AI. Participation is voluntary.



**Do you think that was fair?**

Yes? No? Maybe?

Well, this is **happening today** with AI-based recruiting systems and smart insurance algorithms. Bias in AI is a serious ethical issue that should be addressed and prevented.

**BLACK VOICES**  
**Google Apologizes For Tagging Photos Of Black People As 'Gorillas'**

**Amazon scraps secret AI recruiting tool that showed bias against women**

Powered by **Accenture AI**

MOBGEN | Accenture Interactive

Disclaimer: This is a prototype made only for educational purposes. There is no recording of data nor any actual implementation of AI. Participation is voluntary.

Remember, ETHICS IS  
IMPORTANT when  
designing AI apps...

Thanks for participating in this provotype  
and don't worry, coffee is still free.

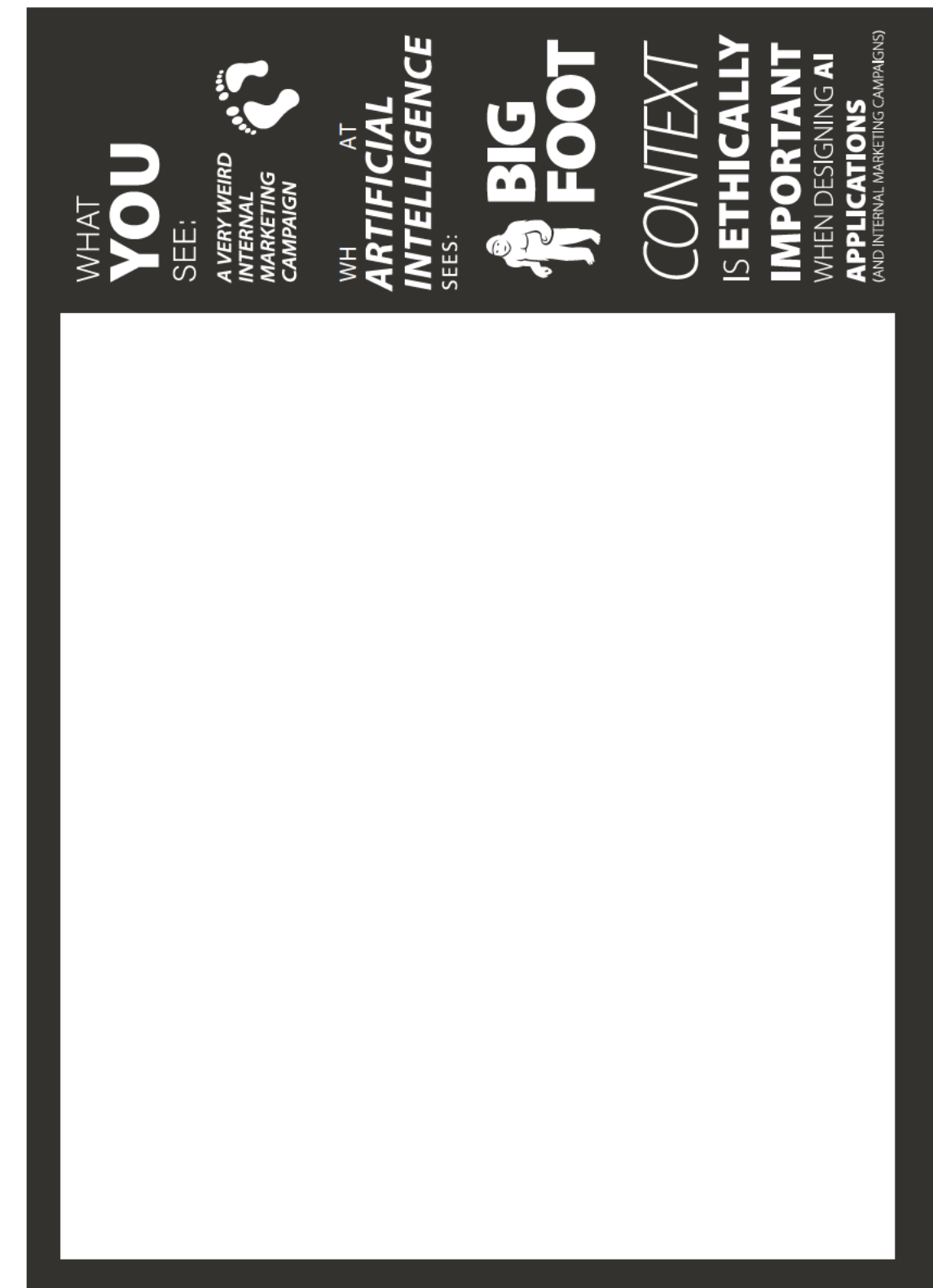


For more information on how to be more ethical with AI  
and also to provide feedback, you can contact this guy:  
Mario Sosa  
@mario.sosa.hidalgo

Disclaimer: This is a prototype made only for educational purposes. There is no recording of data nor any actual implementation of AI. Participation is voluntary.

## appendix H

# Provocative Poster (Action Research Cycle 2)





## appendix I

# Ethical Puzzle



Figure 10: The prototype of the Ethical Puzzle features a 5 piece pyramid puzzle



Figure 11: Overview of the prototype of the Ethical Puzzle on top of the Ethical Framework Canvas



Figure 12: The prototype of the Ethical Puzzle

# ETHICAL FRAMEWORK FOR AI

01  
LEGAL



What are the AI regulations out there?

What is our approach for human well-being?

DEONTOLOGICAL ETHICS

STAKEHOLDERS  
PYRAMID OF  
AI ETHICS

VIRTUE ETHICS

CONSEQUENTIALISM ETHICS



What is our vision for AI?

What are our values?

02  
VALUES

## ETHICAL CONSIDERATIONS

Data Privacy & Security Policy

Human Well-Being  
Safety

Fairness  
Governance  
Value Alignment  
Accountability

Transparency  
Explainability  
Communicating AI  
Safe AI

03  
MORAL



What are our best practices for AI?



