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UNIV 3275: Collaborative Project Report
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<div align="center">AI in Marketing</div>

Introduction

The objective of our project was to introduce our peers and other passers-by to several ethical dilemmas in AI in Marketing. While our project's overall theme was AI in Marketing, we focused on three subtopics: Transparency, Personal Privacy and Fake Profiles. For transparency, one ethical problem is that companies often cannot explain the algorithm they use in targeted advertising. For personal privacy, consumers do not really know what data is gathered about them and how it is being used. And lastly, the existence of fake profiles may skew the results of an AI and hinder targeted advertising.

We believe this was an important topic to showcase since AI in Business was not covered in class and AI in Marketing specifically touches all of our personal lives in one way or another. Most likely each student in our class and the broader Vanderbilt student body has an online presence, often in multiple social media channels. After researching the intersection of marketing and AI, we were convinced that our three sub-topics would be imperative to touch upon and we wanted to increase awareness of how, for example, personal social media data can be used for targeted AI advertising.

In the early phases of our project, we wanted to do a formal presentation but later realized that the location (Sarratt Promenade) would not be conducive to this presentation style. As a result, we decided to create a poster to showcase our overarching theme and walk passers-by through our three subtopics. We handed out prompting questions for each subtopic to start one-on-one and small group discussions about the ethics of AI in marketing.

Transparency

The first issue we looked at is transparency. The key issue with transparency is that the more complex an algorithm becomes, the more difficult it becomes for a person, or in this case a company, to understand how the algorithm determines its output. An example of an algorithm being used in marketing is the machine learning used by Target. Recently, it came out that Target was able to use machine learning to predict if customers were pregnant based on the products they had bought in the past (Hill, 2016). This process, while creepy, is not necessarily unethical. However, a potential problem could exist if a company was selling an expensive sports car and an algorithm was able to determine that people are more likely to buy the car if they have risky tendencies or a gambling problem. Would the company ethically want to use this data if they understood how the algorithm received its output? One potential solution is using xAI, which are a simple model that

draws insights from the more complex models and is able to give a report managers can read to understand what characteristics are being used to decide which customers should be targeted (Jair, 2019). This system would put more responsibility on the company rather than the algorithm or programmers about how data can be used ethically.

Personal Privacy

The second issue we looked at is personal privacy and haw an AI should be built to honor personal privacy. Consumers generally do not know what information is being collected about them, how it is used or how to opt out of data collection. For example, the Cambridge Analytica scandal on the 2018 U.S. Presidential election highlighted a situation where consumers do not know how their data may be used: the firm sold psychological profiles of American voters to political campaigns using Facebook user data (Confessore, 2018). This brings up the ethical question of what data should be used by AIs in marketing and should the government limit companies in what data they collect or use. Another key question is whether or not companies should be allowed to sell a customer's data to third parties. Overall, there is a dilemma between how much individuals should have control over their own data versus to what extent should companies be allowed to use their creative business skills in targeting customers more accurately and driving sales. As a potential solution, we highlighted the General Data Protection Regulation (GDPR) in the European Union, which protects individual data privacy rights (2018 Reform of EU Data Protection Rules, n.d.). According to this new regulation, businesses must be transparent about what data is being collected and ask individuals consent to collect this data. Consumers also have the right to delete and modify their stored data even after giving consent.

Fake Profiles

The objective of this section was to explain how the improved capability of General Adversarial Networks in the future may have implications for marketing, especially considering that many companies are already utilizing fake profiles to alter brand perceptions. One of the most pressing concerns is that there is very little law and legal recourse for individuals to claim their personhood has been unlawfully embodied or depicted online. California is currently the only state where any attempt to define these rights has been enacted (Ghosh, 2018). One example which illuminated the need for legal definitions of online personhood, globally, occurred during the election of Jair Bolsonaro in Brazil. A marketing firm hired by his campaign placed people into Whatsapp groups with fake profile bots that spoke to voters utilizing information about their potential biases in order to push them further towards Bolsonaro (Boadle, 2018). This is an ethical concern because the qualitative reasons people vote for candidates is undermined by the campaign because the bots say whatever will push a voter unconsciously to their side, regardless of whether it makes sense in terms of the political goals of the campaign. In relation to marketing, there is the potential for economic information problems to arise if deep- fakes created by GAN's surpass the authentication capabilities of individual people or smaller firms. People and firms will not have accurate economic

or consumer data to make informed investments if increases in online interest are not identifiably the result of real people/ economic desires. The result may be that the ability to invest with confidence becomes a privilege reserved only for those with the means to authenticate the "hype".

Experience at the fair

While at the fair, we hoped to use multiple mediums to communicate our research: a poster, guiding questions on sheets of paper, and our verbal presentation of the material. We found that different people seemed to interact with different mediums (some only talking to us, some reading the questions and the poster, etc.), which validated our decision to use these different mediums. To communicate our research, we took into account the person's previous understanding of AI: i.e. if the student was in our UNIV 3275 class, we assumed they had a basic knowledge of AI and had paid attention to the reoccuring ethical questions raised during class periods. For the few passers-by who were not in our class, we did not encounter problems explaining AI in Marketing. Overall, given that the topic is very relevant to average consumers, there seemed to be an high interest in learning about it and passers-by were very engaged in conversation. Furthermore, sectioning our poster with use-cases, core ethical problems and possible solutions gave structure to conversations and a framework through which to think about the current state of AI in Marketing.

The most rewarding aspects of the fair for us were the conversations with the many individuals who had opinions on the topics. One individual who worked in sales at Google last summer was able to give us insight as to how transparency might play a role in her job. She explained how she has to help companies understand how the Google algorithm works, but they may not fully understand the algorithm. Additionally, another individual stated that he believed the responsibility for monitoring algorithms should fall to the government rather than the companies. A third individual questioned if there should be differences between the laws set in place for marketing in a commercial environment versus a political environment. All of these questions and conversations encouraged us to consider even more complexities in our topic than we had initially researched. Through the fair, we believe we were able to teach people about a very relevant topic, but also to gain a better understanding of the topic ourselves.

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Appendix: Fair Poster

Ethics of AI in Marketing

Current State

- **Target:** used machine learning to determine customers likely to be pregnant
- **Facebook:** allowed housing ads to target based on race
- **Hypothetical:** machine learning could find, for example, that certain races are more likely to buy and target when illegal, etc.

- **2018 US Election**: Cambridge Analytica sold psychological profiles of American voters to political campaigns using Facebook user data mining
- **Hypothetical**: A consumer gets an automated phone call from an credit-card company that seems to know too much about them

- **Devumi**: helped companies boost their active following and brand perceptions using billions of fake accounts. They took real profile information from people and created fakes with different names.
- **Hypothetical**: The use of GANs to create deep fakes of users or their speech patterns such that real customers are engaged by people who look like their own friends.

Ethical Problems

Transparency
- **Internal:** the more accurate an algorithm becomes, the more complex and difficult to understand it becomes ("black box") -
- **External:** companies don't want to release their intellectual property, but require customer trust

Personal Privacy
- Consumers do not know what information is being collected about them or how to opt out of data collection
- Consumers have limited control over their personal data and how it is used

Fake profiles and Market Effects
- Social Media users are not aware of how their profiles or personality are being used to alter subjective realities of others online. - Market asymmetries arise when companies begin trying to play to customers who are increasingly indistinguishable from their competitors fake profiles.

Solutions

- **Internal:** (xAI) → simpler model that pulls out key insights from the complex model, but also allows manager to review certain areas in depth
- **External:** put responsibility on company (not algorithm), give customers the generic information about the algorithm

GDPR - Individuals in the EU have a right to data privacy whereby:
- Businesses must ask consent to collect data and be transparent about what is collected
- Consumers can delete or modify their stored data

GDPR - People can object to the processing of their "personal data" which includes deep fakes since personal data is defined as, "any information relating to an identified or identifiable natural person"
- Marketing professionals need to employ strategies of identifying bots and fakes that are being used by other companies to gage the effect it has on their human followers.