Ethical Principles and Communication in Technology: Exploring the philosophical and linguistic foundations of ethics in tech design and use: A Case Study

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CASE

DISCLAIMER: The following scenario is a fictional scenario that incorporates references to actual events.

The Apple Card Gender Bias Incident

In the bustling city of San Francisco, tech enthusiasts eagerly awaited the launch of the Apple Card, a credit card designed to integrate seamlessly with Apple's ecosystem. Among them was Maya, a 30-year-old software engineer with a stellar credit score and a passion for technology. She was excited about the prospect of using the Apple Card for its innovative features and cash-back rewards. However, her experience with the card would soon reveal a troubling reality about gender bias in algorithmic decision-making.

On August 20, 2019, Apple officially launched the Apple Card, generating significant media buzz. The card promised a user-friendly experience, no annual fees, and a transparent fee structure. Maya eagerly applied for the card, confident that her excellent credit history would ensure her a favourable credit limit. She had worked hard to maintain her credit score of 790, which was well above the national average. However, when she received her credit limit notification, she was shocked to find that it was significantly lower than expected. Despite having a higher credit score than many of her male colleagues, Maya's credit limit was set at $5,000. In contrast, her friend Jake, who had a similar financial background but was male, received a limit of $15,000.

Maya decided to investigate further. She reached out to customer service to understand how her limit was determined. During the call, she learned that Goldman Sachs, the issuing bank for the Apple Card, used an algorithm to assess creditworthiness. While the representative assured her that gender was not explicitly considered in their calculations, Maya could not shake off the feeling that something was amiss. Her suspicions were confirmed when David Heinemeier Hansson, a well-known programmer and entrepreneur, tweeted about his own experience with the Apple Card just days later. He revealed that he had been granted a credit limit twenty times higher than that of his wife Jamie, despite her having a better credit score. This revelation quickly went viral and led to widespread outrage on social media.

As more users shared their experiences online—many reporting similar discrepancies based on gender—the issue gained traction. Notable figures like Steve Wozniak also chimed in with their own stories of gender-based disparities in credit limits.

In response to the growing public outcry, the New York State Department of Financial Services (DFS) announced an investigation into Goldman Sachs' lending practices related to the Apple Card. The DFS aimed to determine whether the algorithms used in assessing credit limits violated state laws prohibiting discriminatory lending practices.

Maya followed the developments closely as news outlets reported on the investigation. Goldman Sachs maintained that their algorithms had undergone third-party vetting for bias

and insisted that gender was not a factor in their decision-making process. However, as more information surfaced about how algorithms could inadvertently reflect societal biases present in historical data, public scepticism grew.

The incident raised critical ethical questions about algorithmic decision-making in financial services such as the prominent concern was the lack of transparency surrounding how decisions were made by automated systems. Users like Maya were left without clear explanations for why their credit limits differed so drastically from those of their peers. The incident prompted discussions about accountability for biases embedded within algorithms. While Goldman Sachs claimed neutrality in their assessments, it became evident that algorithms could still discriminate based on proxy variables correlated with gender. The consequences of such biases were not merely anecdotal; they had real implications for consumers' financial lives and opportunities. Discriminatory lending practices could exacerbate existing inequalities in access to financial resources.

Feeling frustrated and undervalued by the system designed to empower consumers like herself, Maya decided to share her story on social media. Her post detailed her experience with the Apple Card and highlighted how algorithmic bias could lead to unfair treatment based on gender. As her post gained traction and resonated with many women facing similar challenges, Maya found herself at the center of a growing movement advocating for algorithmic fairness in financial services. She began receiving messages from women across the country who had experienced similar issues with their Apple Card applications. In March 2021, after conducting its investigation into gender discrimination allegations associated with the Apple Card's lending algorithms, the New York DFS concluded that while there was no evidence of deliberate discrimination based on gender during underwriting processes, systemic issues related to algorithmic design could lead to unintended biases.

The DFS report emphasized the importance of ensuring transparency in lending practices and urged financial institutions to adopt clearer communication strategies regarding how algorithms functioned and how decisions were made. This outcome underscored the need for ongoing vigilance regarding algorithmic fairness and accountability within financial services.

Maya's experience with the Apple Card serves as a poignant reminder of the ethical complexities inherent in algorithmic decision-making within financial services. As technology continues to transform industries worldwide, it is essential for companies to prioritize fairness and transparency while addressing potential biases embedded within their systems. By fostering open communication channels with consumers and engaging regulatory bodies proactively, organizations can work towards rebuilding trust while ensuring equitable treatment for all users. As society grapples with these challenges moving forward, it is crucial for stakeholders across sectors—technologists, ethicists, regulators—to collaborate effectively in navigating this evolving landscape.

SYNOPSIS: The Apple Card gender bias incident highlights algorithmic discrimination in credit limit determinations, affecting women disproportionately and raising ethical concerns.

KEYWORDS:

Algorithmic bias; transparency; accountability; financial services; inclusivity.

LEARNING OBJECTIVES:

- Understand the implications of algorithmic bias in decision-making processes.
- Analyse the ethical responsibilities of technology companies regarding fairness and transparency.
- Evaluate regulatory responses to incidents of perceived discrimination.
- Propose strategies for fostering inclusivity and trust in technology design.

DISCUSSION QUESTIONS:

1. **What were the major gaps between the existing coursework and Sushma's processing style?**
   - Analyse how the coursework failed to accommodate Sushma's unique learning needs and processing styles.

2. **How can the unique sensibilities of neurodiverse audiences be used to bring fresh perspectives to complex technological subjects?**
   - Discuss how incorporating diverse learning styles can enhance the curriculum and foster innovation.

3. **What changes, without redoing the entire curriculum, can be brought into the coursework to make it more inclusive?**
   - Propose practical modifications that could improve inclusivity in existing coursework.

4. **Apart from neurodiverse students, will these changes positively impact other students as well? How?**
   - Evaluate how inclusive practices can benefit all students, not just those who are neurodiverse.

5. **Apart from the difficulty in communication, how else does the current pattern of coursework do a disservice to individuals like Sushma?**
   - Explore other ways in which traditional coursework structures may hinder learning for diverse student populations.

TEACHING NOTE

CASE OVERVIEW:

The Apple Card gender bias incident serves as a critical examination of algorithmic discrimination in financial services. Following the launch of the Apple Card in August 2019, users, particularly women, reported significant discrepancies in credit limits based on gender. This case centers on Maya, a fictional software engineer who experiences firsthand the impact of these biases when her credit limit is substantially lower than that of her male peers, despite having a better credit score. The case study highlights the ethical implications of algorithmic decision-making, the importance of transparency, and the need for inclusive practices in technology design.

LEARNING OBJECTIVES:

1. **Understanding Algorithmic Bias:** Students will explore how biases can be embedded in algorithmic processes and the consequences of these biases on marginalized groups.

2. **Evaluating Ethical Responsibilities:** The case encourages students to critically assess the ethical responsibilities of technology companies in ensuring fairness and transparency in their products.

3. **Analysing Communication Strategies:** Students will examine how effective communication can mitigate public backlash and restore trust following incidents of perceived discrimination.

4. **Exploring Regulatory Implications:** The case provides insights into the role of regulatory bodies in overseeing algorithmic practices and ensuring compliance with anti-discrimination laws.

5. **Developing Inclusive Practices:** Students will propose strategies for creating more inclusive algorithms that account for diverse user experiences and backgrounds.

DISCUSSION QUESTIONS:

1. **What were the major gaps between the existing algorithmic practices and the experiences reported by users?**

- This question invites students to analyse how the algorithm's design may have overlooked critical factors influencing creditworthiness, leading to biased outcomes.

2. **How can technology companies enhance transparency in their algorithms?**

- Students should consider practical measures that companies can implement to ensure users understand how decisions are made, fostering trust and accountability.

3. **What role do regulatory bodies play in addressing algorithmic bias?**

- This question encourages students to explore the responsibilities of regulators in monitoring technology companies and enforcing compliance with anti-discrimination laws.

4. **In what ways can inclusive design principles be integrated into algorithm development?**

- Students should discuss strategies for incorporating diverse perspectives during the design process to create fairer algorithms that better serve all users.

5. **How can public backlash influence corporate policy changes regarding algorithmic practices?**

- This question prompts students to consider the impact of consumer advocacy on corporate accountability and ethical practices in technology.

KEY TEACHING CONCEPTS:

1. **Algorithmic Accountability:** Emphasizing the importance of holding technology companies accountable for their algorithms' impact on users, particularly marginalized groups.

2. **Transparency in Technology:** Highlighting the necessity for clear communication regarding how algorithms function and make decisions, fostering user trust.

3. **Ethical Design Principles:** Encouraging students to think critically about ethical considerations in technology design, aiming for inclusivity and fairness.

4. **Regulatory Oversight:** Understanding the role of regulatory bodies in ensuring compliance with anti-discrimination laws and promoting equitable practices within industries reliant on algorithms.

TEACHING APPROACH AND METHODOLOGY:

- **Case Discussion:** Begin by presenting the case study to students, allowing them to share initial thoughts on the incident's implications.

- **Group Work/Breakout Sessions:** Divide students into small groups to discuss specific questions related to algorithmic bias, transparency, and regulatory implications, encouraging collaborative problem-solving.

- **Peer Feedback:** After group discussions, have students present their ideas and receive feedback from peers, fostering a collaborative learning environment.

ADDITIONAL RESOURCES:

- Articles on algorithmic bias and its impact on various sectors.
- Case studies highlighting successful interventions addressing similar issues.
- Research papers discussing ethical frameworks for technology design.
- Guidelines on best practices for inclusive design principles in technology development.

CONCLUSION:

The Apple Card gender bias incident serves as a vital case study that not only addresses pressing issues related to algorithmic fairness but also highlights broader societal implications regarding gender equality in financial services. By engaging students with this case, educators can foster critical thinking about ethics, accountability, and inclusivity within technological advancements, preparing them to navigate complex challenges in their future careers.

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