Uncovering Bias in AI: Ethical Issues in Healthcare and Skincare Systems

Articles:

1. "*Ethics & AI: A Systematic Review on Ethical Concerns and Related Strategies for Designing with AI in Healthcare*"

Authors: Fan Li, Nick Ruijs, Yuan Lu

Published in AI Journal (2023)

Link: Ethics & AI in Healthcare

2. "*How Artificial Intelligence Adopts Human Biases: The Case of Cosmetic Skincare Industry*"

Authors: Anastasia Georgievskaya, Timur Tlyachev, Daniil Danko, Konstantin Chekanov, Hugo Corstjens

Published in AI and Ethics (2023)

Link: Artificial Intelligence Adopts Human Biases

1. Summary of Articles

1. Ethics & AI in Healthcare

This article talked about the ethical challenges of using AI in healthcare, it focuses on various ethical issues but mainly highlights fairness, transparency, and trust. The author directs the focus on risks posed by opaque AI systems such as the black-box models in critical areas like diagnosis and treatment. The paper doesn't leave it just up till the risk, it also talks about stratigies to mitigate these risks, these include fostering transparency, ensuring equitable datasets, and creating interdisciplinary ethical guidelines. The article mentions the importance of aligning AI with laws and regulations to protect patient safety and promote trust.

2: Bias in the Cosmetic Skincare Industry

This article talks about how AI-driven systems used in the cosmetic skincare industry propagate human biases, such as racial, gender, and cultural biases.

Bias can be found in all steps of the AI lifecycle, starting from data acquisition to modeling, validation, and deployment. For example, biased data sets would always be in favor of lighter skin tones and those systems that do not consider ethnic diversity in skincare needs. The article encourages inclusive design and suggests that AI might just work as a tool which can be used to

find hidden biases in society, which could be eliminated through deliberate regulation and innovation.

2. Comparing the Two Articles

When we look at the two article from a broader perspective, we will see it talks about how human bias is present in the AI systems and its basically the unintentional bias which is already present in humans and therefore leads to unfair or harmful outcomes. Whether it's in healthcare or the skincare industry, the core issue remains the same: AI systems can perpetuate existing biases if they're not designed without the consideration of human bias. The healthcare article says that biased AI in medical diagnoses can lead to misdiagnoses or unequal treatment, and the skincare article mentions how beauty standards are shaped by AI, often excluding or misrepresenting people with darker skin tones. And both recognize that the only way to remove this is by creating a transparent system, considering a better dataset and most importantly ensuring AI systems are designed to be fair and inclusive.

Now through both articles point towards the same source of the issue, they both portray different sectors of health care, the main difference is in the stakes and context, the first article talks about AI in **healthcare which** addresses a much higher level of risk, here the decisions made by AI can directly impact people's health, and even their lives. Whereas the second article's focus is on the AI bias present in the **cosmetic skincare industry**. The adverse effect of biasness in the system will cause creating harmful beauty standards, affecting people's self-esteem and reinforcing stereotypes. The skincare article emphasizes the need for more inclusive design and highlights how bias can contaminate AI at every stage of development, from data collection to product recommendations.

Although Article 1 provides a structured approach to the ethical issue through governance and transparency, Article 2 presents a lifecycle approach where one can identify bias at each stage in the AI development process.

3. Analysis of the Ethical Issue: Bias and Fairness

Issue: There whole discussion of the articles is about biasness and fairness. Bias, came to picture from unrepresentative data sets, poor algorithms, or uninhibited prejudice within society, brings about discrimination or inequity. In health care, this can be discriminatory recommendations for treatments; in skincare, the AI systems could create impossible and unrealistic beauty standards.

Ethical theory: Utilitarianism

In both cases, the utilitarian stance applied will demonstrate that addressing bias in AI is not only a question of fairness to individuals but also one of maximizing overall well-being in society. In healthcare, the focus is on preventing harm to patients and assuring that AI contributes to better, more equitable health outcomes. In the skincare industry, the focus shifts slightly to social harm, where biased AI systems can create negative beauty standards. In both cases, designing fair and inclusive AI systems aligns with the utilitarian goal of promoting the greatest good for the greatest number, ensuring that vulnerable groups are not harmed and that AI benefits society.

4. Assessment and Recommendations

Assessment : *Are the Issues Being Resolved?*

Both of the articles mention the strategies, but the proper answer is yet to be finalized. In healthcare, interdisciplinary efforts and regulations like the EU's AI Act address some concerns, yet enforcement and global harmonization lag. In skincare, while initiatives like balanced datasets (e.g., the Atlas of Beauty) are steps forward, biases persist in practice due to entrenched societal norms.

Recommendations

1. Standardized Datasets: The expectation is that both fields will have global representation of datasets to avoid bias in training and testing AI.
2. Transparent Systems: Developers should focus on explainability and proactively involve stakeholders, including patients and consumers.
3. AI as Bias Detector: According to Article 2, AI can also actively uncover latent biases in industries and allow for targeted interventions.

5. Relation to Class Discussions

The two articles mainly talked about the discussion on bias in AI. This was discussed in class when we talked about algorithmic bias as well as in facial recognition class last week. In class, in the last breakout session while talking about the ethical issues of such AI systems we ended up realizing the importance of aligning AI systems with laws and regulations to ensure fairness and transparency and therefore building a better trusted lifestyle which will include the AI tech,

which aligns well with the strategies proposed in the articles to address bias. For instance, in healthcare, the necessity for strict oversight and a properly representative datasets gained a good about of importance in our class debates about the ways biased algorithms-like those in facial recognition-operate as disproportionate mechanisms of harm against already-marginalized persons. Similarly, the broader societal implication of biased AI in skincare is like our discussions on the greater consequences of unchecked algorithmic bias, such as the continuance of stereotypes or denial of individual rights.

Conclusion

The two articles highlight the need to address bias in AI systems which might be induced by human bias to ensure fairness and inclusivity. Be it in healthcare or skincare, eliminating these biases aligns with the utilitarian goal of maximizing societal well-being and building trust in AI systems.