



**DTMB**  
Technology, Management & Budget

# Bias and AI

Ti'Kyra Napoleon

# Agenda

- Learning Objectives
- Understanding Bias
- Impact of Bias
- Bias in AI video
- Sources of Bias
- Mitigating AI Bias
- Using AI to Mitigate Bias
- Wrap Up Video



[This Photo](#) by Unknown author is licensed under [CC BY-SA](#).

# Learning Objectives



[This Photo](#) by Unknown author is licensed under [CC BY-SA](#).

- Raise awareness about bias in artificial intelligence
- Explore the importance of addressing bias in AI
- Provide practical insights and strategies to mitigate bias in AI systems

# Understanding Bias in AI

## What is AI bias?



AI bias is an anomaly in the output of machine learning algorithms, due to the prejudiced assumptions made during the algorithm development process or prejudices in the training data.

---

# Impact of Bias in AI

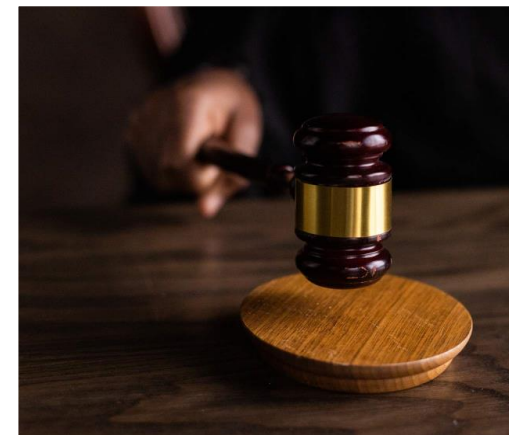
Discrimination



Loss of Trust



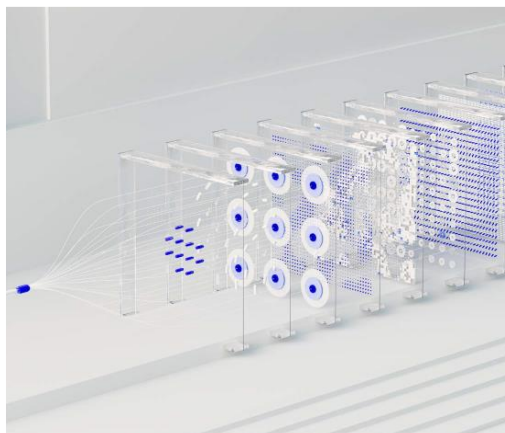
Ethical and legal ramification



Missed opportunities



Reinforcement of stereotypes



Inequitable opportunities



# Bias in AI

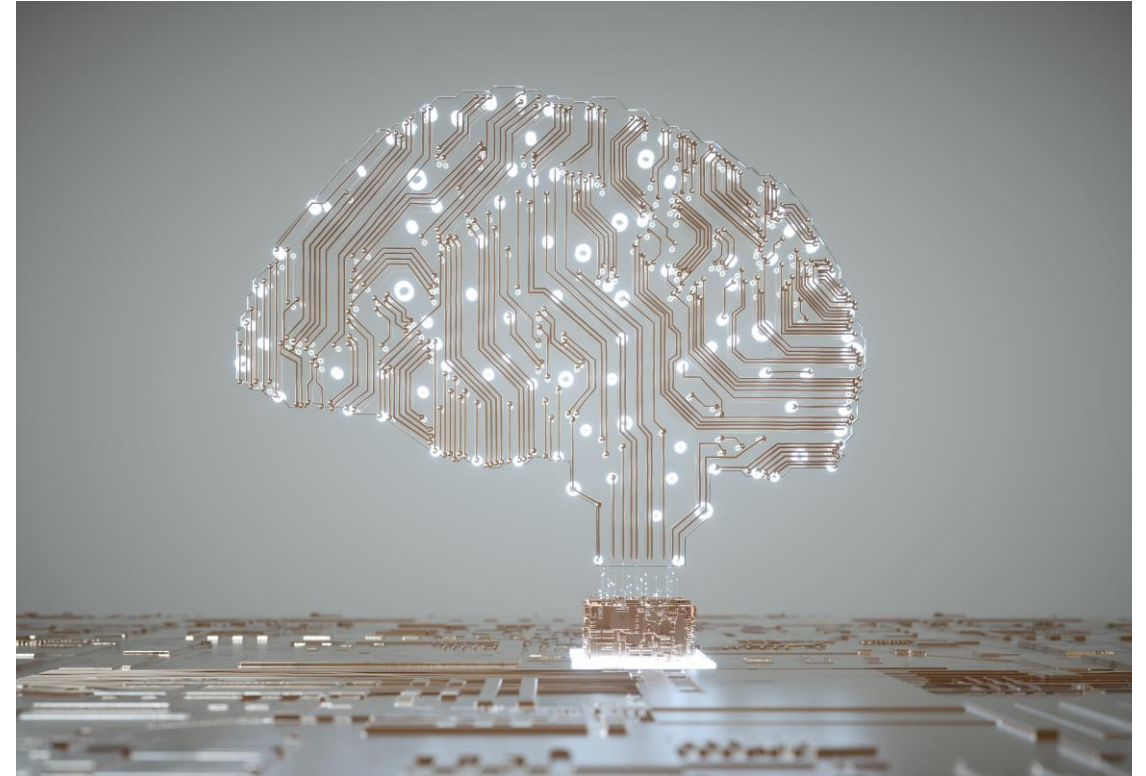


## Sources of Bias

**Question: What might cause biases to show up in AI?**

# Sources of Bias

Bias can emerge from the training data used to build AI models. If the training data contains any form of bias the AI system may learn and spread those biases.





# Sources of Bias



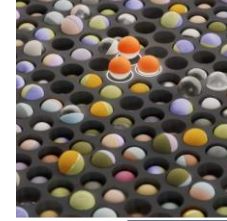
## Societal Bias

Biases from the culture due to the human involvement piece of creating AI.



## Selection Bias

Training data not representative of the entire population or target audience.



## Latent Bias

- Bias based on historical data or because of a stereotype that exists in society.

# Examples of AI Bias



# Examples of AI Bias



## Apple Card Credit Limits:

- **Solution:** Apple promised to investigate and address the issue. They stated that the Apple Card decisions are based on an individual's creditworthiness, but they committed to addressing gender bias concerns.

## Amazon's Gender Bias in Hiring:

- **Solution:** Amazon discontinued the tool and reevaluated its recruiting practices. They now use AI to assist human recruiters but have focused on improving diversity in their teams.



# Examples of AI Bias

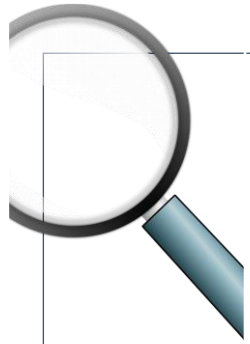


- **Google's Image Recognition Algorithm:**
- **Solution:** Google immediately apologized and worked to improve the image recognition algorithm. They also blocked certain search terms that could be offensive.

- **YouTube's Content Recommendation Algorithm:**
- **Solution:** YouTube has made several adjustments to its algorithm to reduce the promotion of harmful content. They've increased human moderation, refined recommendation algorithms, and provided users with more control over their content recommendations.



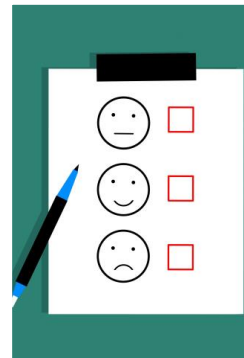
# Mitigating AI bias



Transparent  
Algorithms



Regular Bias  
audits

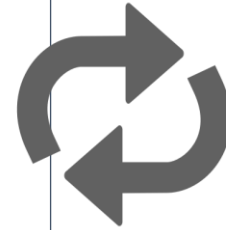


User  
Feedback

# Mitigating AI bias



Diverse and  
Inclusive teams



Frequent  
development



Public  
Awareness

# Getting it right



# AI to Mitigate Bias

Bias mitigation algorithms



Data analysis and detection



Explainability and interpretability





# Wrap up





# THANK YOU!

Feel free to reach out to me

Email: [Napoleont@michigan.gov](mailto:Napoleont@michigan.gov)

LinkedIn: Ti'Kyra Napoleon