

Angel Dong

## Generative AI as a Double-Edged Sword for Marginalized Communities

Did you know that 18 billion messages are sent to ChatGPT each day? What makes generative AI so prevalent in our lives today? What are the implications of this innovation on our future? The purpose of my thesis, advised by Dr. Pary Fassihi, is to investigate how generative AI could both be a benefit and a danger to our society today, specifically in shaping the lives of marginalized groups. I argue that while AI offers significant advancements in healthcare, accessibility, research, and criminal justice, it simultaneously amplifies existing social inequalities through data, algorithmic, and user biases. Drawing on existing scholarship and a large-scale case study of text-to-image models, my research further demonstrates that AI systems can reinforce harmful stereotypes related to race and gender. Building on this analysis, I explore several prominent bias mitigation methods and their limitations. To assess whether these methods have improved over time, I replicated elements of a prior experiment on occupational image generation and compared results from 2023 and 2025. My findings reveal that, despite slight progress in reducing certain stereotypical representations, biases remain highly prevalent in AI systems, highlighting the limitations of current mitigation strategies and underscoring the need for greater awareness of such discriminatory patterns. Ultimately, I argue that technological solutions alone are insufficient to eliminate bias, as meaningful change requires critical engagement, transparency, and collective societal effort to prevent AI from further exacerbating existing social inequalities.