How an AI Generated Experience Impacts Negative Perceptions of AI

MJ JOHNS and TYLER COLEMAN

Freaky Fotobooth is an immersive art exhibit that strives to invite AI skeptics to experience generative AI first-hand through an engaging and entertaining photobooth installation. Through several showcase events, we have explored conversations with users about their trepidation and gathered their insights and feedback after interacting with our experimental project.

CCS Concepts: • **Computing methodologies** → *Philosophical/theoretical foundations of artificial intelligence.*

Additional Key Words and Phrases: AI, Artificial Intelligence, Perceptions, Generative Art, Experience Design, Immersive, Photobooth

1 INTRODUCTION

With the recent proliferation of generative AI entering the market in 2022 with tools like Midjourney, DALL-E, and Stable Diffusion, much of the general public became aware of this technology seemingly overnight [7]. As is often the case with new and little-understood technologies, a common reaction was one of fear [8]. *Is my data being used without my knowledge? Will AI take my job? Is the AI uprising going to take over the world?*

Coming from backgrounds in entertainment technology and game design, we viewed the new wave of AI with fascination and excitement, envisioning all the possibilities it might hold. When we started developing an AI-powered photobooth, we were met with a great deal of skepticism from those fearful, or even instinctively hateful, of everything AI. Along our journey we discovered that when people interact with AI in a fun and safe way, and particularly in a way that they can see themselves as part of the process, some of that fear and hate starts to melt away.

Fig. 1. Two users stand in front of green screen (left); What users see instead of green screen (center); Final processed output (right)

With our project Freaky Fotobooth, we set out to design an experience that could change the relationship between people and AI by offering users an entertaining and curiosity-provoking interaction with generative AI that places the user at the center and allows them to see their impact on the output.

2 RELATED WORKS

Freaky Fotobooth is not alone in the space of AI-generated photo booths. Snapmatic [1, 3] is a photo booth that generates AI output by having a prompt engineer directly engage with the user and turn the user's ideas, hopes, and dreams into an AI prompt to process their photo into their fantasy. Similarly, existing photo booth tools like Luma Booth [4] and Snappic [6] are adapting their technologies to embrace AI and layer it on top of their existing offerings.

The Smart Photobooth Project [2] developed by the University of Luxembourg is an example of a photo booth built on AI with the intention of informing users. It uses a Neural Style Transfer (NST) to transform the photo taken into a

well known art style (such as impressionism) that is used to teach the participant about the history and impact of that style (with the help of an on-site expert) [2]. In the paper Toward a Generative AI-Augmented Design Era, author Yuan describes a future in which AI and humans work together in a symbiotic relationship within the creative process [5].

What makes Freaky Fotobooth unique from other AI photo booths is its intent not as a traditional photo booth, nor limited by well-known art styles, but as a fully immersive interactive experience that creates wildly eccentric and unexpected output where the user might not even see themselves – but they can see the impact they had on the creation of the output, and therefore see themselves as part of the creative process in tandem with the AI.

Fig. 2. Two users interacting with the Freaky Fotobooth installation

3 ARCHITECTURE OF THE FREAKY FOTOBOOTH PROJECT

Freaky Fotobooth leverages Artificial Intelligence Generated Content (AIGC) to create visual output that would not be possible for a human to create in real time while the user is engaged with the experience. This is in alignment with the goal of AIGC to improve the speed, quality, and accessibility of the creation process [9].

We designed Freaky Fotobooth as an immersive art installation utilizing generative AI to process participants' photos in real time and present their results within seconds. Participants stand in front of a greenscreen, select a background style, and choose a "freaky level" which translates to values used to determine the AI control over the output.

Freaky Fotobooth was built on the backbones of our earlier project, Glitchbooth, which used shaders and procedural generation to alter a photo in bizarre ways. We debuted Glitchbooth at IndieCade Night Games in 2017 and went on to show it at other events including Jeugos Rancheros, Yomo Outside the Lens, and at the Getty Museum. In 2022 we resurrected the project under the new name Freaky Fotobooth, now powered by the latest in generative AI tools.

In addition to pivoting to using AI for the processing, one other notable change was the inclusion of props which we incorporated into the Freaky Fotobooth experience. Props have some fantastical impacts on the output when processed

by AI – a toy guitar in the original photo becomes a believably realistic guitar in the output image. Allowing the user to choose props to include in their photo gives them further control over the AI-generated output.

We showed our installation at an AI Art meetup at SXSW in Texas in March of 2023, and went on to show it around the country (GDC in San Francisco and PGC in Seattle) and around the world (WN conference in Istanbul, Devcom in Germany, London AI Summit). At these events, we encountered AI skeptics who were apt to question the ethics and safety of AIGC. Once they tried it they would generally shift to curiosity and excitement once they saw the output.

Design Approach: You are the Seed. Our artistic statement is "you are the seed" – meant to inspire the users not to look for themselves in the output but to appreciate the influence they had in the generation. When experimenting with styles and values in the art tools, we leaned into the bizarre and unexpected results and embraced choices in the process that resulted in output where the "person" in the photo is almost, but not quite, lost to the "chaos" of the AI creation.

Technological Approach: Layers of AI. As we explored and experimented with AI tools, one thing was quite clear early in early 2023: the quality of output of Midjourney was superior to what could be achieved with Stable Diffusion. The challenge we faced was that it would not be possible with our workflow to have Midjourney process the photo booth images in real time. Our solution was to generate the initial background images using Midjourney (which we carefully curated) and then use Stable Diffusion for the real time processing while the photo booth was running. Ultimately we developed the procedure shown in Fig 3 to take advantage of multiple layers of AI.

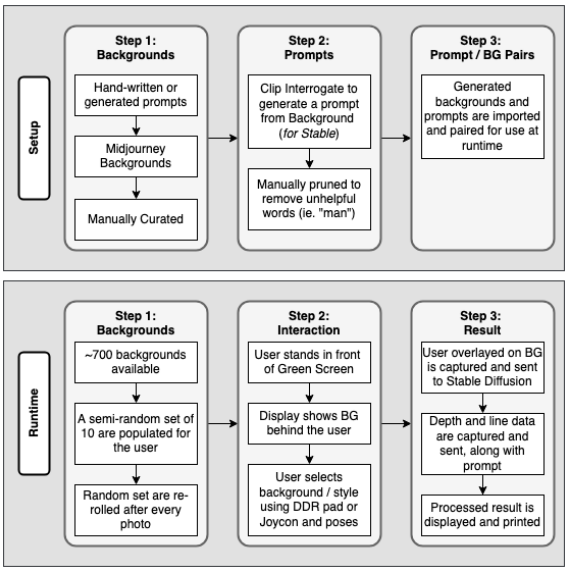

Fig. 3. Steps of the Freaky Foto Setup and Runtime Processes

These steps ensure high quality backgrounds are shown during the experience, and that processed images use suitable prompts for Stable Diffusion as well as visual elements to retain important details from the captured photo.

UX Approach: Intriguing Interfaces. In the early days of our photobooth, we used a DDR pad to allow the users to control the experience with their feet, keeping their hands free for posing and ensuring they could stand a good distance away from the computer. One of the challenges of this interface was the need for a large amount of space, and to prevent people from wandering over the buttons unintentionally. We iterated on this and pivoted to using a

Nintendo Switch Joy Con to still allow for distance and posing but to eliminate the trample hazard. We also chose the bright green Joy Con so as to allow it to disappear with the greenscreen to avoid impacting the photo. The full physical setup from the user's perspective can be seen in Fig 4.

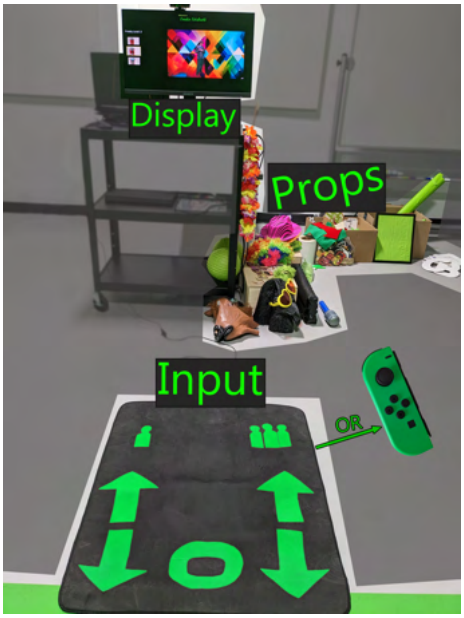

Fig. 4. Interactive setup from the perspective of the user with interface options

4 DISCUSSION AND CHALLENGES

Our primary ethical dilemma from working with Freaky Fotobooth is the disparate outcomes of the resulting images depending on who stands in front of the camera. Through a great deal of effort and fine-tuning, we have addressed some of the early problems we faced where nearly everyone would be turned into a white man with a goatee, but some persistent issues remain (such as quality of facial output when we try to retain facial features of the participant).

When showing our installation, we have often gotten questions about replacing artists – since our project involves real-time processing of the images, it would not be feasible for an artist to do the work that is currently being done by Stable Diffusion. However, one could argue that our initial backgrounds, generated by Midjourney, are not on such a tight timeline and could therefore be human creations done by a hired artist. Additionally, we recognize the ongoing debate about the fairness of using models which were trained on the work of countless uncredit artists. These are challenges we continue to wrestle with in our ongoing development and in how we present our work to the public.

5 CONCLUSION AND FUTURE WORK

Freaky Fotobooth is a work-in-progress, currently a functional MVP that has been deployed for several installations and iterated on based on observations and user feedback. The next step will be to more formally gather user data to explore our hypothesis that interacting with generative AI through entertainment can alleviate fear, hate, and misunderstanding. We will do this by conducting a study using a pre- and post-survey to collect quantitative data measuring users' feelings

towards AI before and after interacting with Freaky Fotobooth, and will analyze the results. We hope projects like this can be used to start conversations to help the general public understand the tools and what is possible and to break down some of the barriers that fear of new technology presents.

REFERENCES

[1] Acquiremedia. Snapmatic Unveils Next Generation AI-Powered Photobooths at Flux Innovation Lounge. *M2 PRESSWIRE* (Nov. 2023).

[2] Egberdien van der Peijl, Amro Najjar, Yazan Mualla, Thiago Jorge Bourscheid, Yolanda Spinola-Elias, Daniel Karpati, and Sana Nouzri. Toward XAI & Human Synergies to Explain the History of Art: The Smart Photobooth Project. *Lecture Notes in Computer Science 12688* (July 2021).

[3] LA Photo Party, Inc. Snapmatic.

[4] Lumasoft. Luma Booth.

[5] Philip Yuan. Toward a Generative AI-Augmented Design Era. *Architectural Intelligence* (2023).

[6] Snappic. Snappic.

[7] Steinfeld, K. Clever little tricks: A socio-technical history of text-to-image generative models. *International Journal of Architectural Computing* (2023), 211–241.

[8] William Ball, and Scott Holland. The Fear of New Technology: A Naturally Occurring Phenomenon. *The American Journal of Bioethics* (2009), 14–16.

[9] YIHAN CAO, Siyu Li, Yixin Liu, Zhiling Yan, Yutong Dai, Philip S Yu, and Lichao Sun. A Comprehensive Survey of AI-Generated Content (AIGC): A History of Generative AI from GAN to ChatGPT. *ArXiv.Org* (Mar. 2023).