

Ideal Persona AI in Real-time

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Abstract

This position paper presents the findings of a case study on the user experience of generating AI personas using StreamDiffusion and ChatGPT. I provided participants with an experience of exploring and creating their own persona model, generated by Generative Artificial Intelligence (GenAI), in text and image formats. Through post-study interviews and observations, this research presents multifaceted findings, including *inconsistent persona prototypes*, *an uncanny valley*, *disconnections*, *AI bias*, and *creative exploration* when participants receive real-time feedback on their AI-generated personas. This position paper also offers four suggestions, ranging from “Creative Writing” to “Structural Engineering”, aimed at improving future LLM user experience systems to encourage ethical behaviour and increase user satisfaction when creating AI personas and participating in other real-time AI interactions.

Keywords

Generative Artificial Intelligence, Personas AI, AI ethics

1. Introduction

In HCI (human-computer interaction), ethical issues are often considered at the level of AI (artificial intelligence) models [1]. This position paper argues that AI system performance optimisation methods to prevent malicious output must aim to create interactions that ethically protect users [2]. In the rapidly developing era of large language models (LLMs), “*personality*” is no longer simply a value humans assign to their individual AI agents, but a central function in the collaborative relationship between users and AI [3].

LLMs are not adept at capturing specific user characteristics [4], and this “Persona AI” is often generated randomly by the AI system, going beyond the content it is programmed to handle. This can create significant obstacles to a positive user experience if the AI generates offensive personas. Therefore, in addition to empowering users to create their own personas, guiding them on the correct methods for entering prompts and empowering the control are ways to optimally empower control and enhance the effectiveness of the user experience. Moreover, the behaviours GenAI creates in AI personas are no longer fully automated but rather pre-programmed by the end user. Prompts, whether text or voice, actively help bind the AI tool’s ethical behaviour to the product it creates for the user. In this position paper, the concept of an “AI persona” is used to describe a personality belonging to a participant. More specifically, participants are asked to associate with an ideal version of themselves, and AI helps them to construct an image of that personality. This position paper argues that guiding users to provide specific, precise prompts or requests to LLMs is crucial for establishing a boundary structure between honest, ethical AI responses and user control.

According to a comprehensive study from Muth & Carbon [5], *the notions of distributed cognition of a situated, embedded, or extended mind* can highlight the role of the social and physical environment in the way a person perceives the world in three ways.

- The human mind is deeply connected to cultural activities.
- Everything can expand the human body schema.

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- Humans can use external physical structures as cognitive resources.

These three ways of perceiving the world help shape and enhance an artist's sensitivity. In the age of technology, the ideal self is influenced by interactions in the digital environment. In addition to the cognitive sensitivity of the senses, the environment significantly influences how artists interpret information in their artworks [6]. An artist's ideal self is their inner self. As a creative person, working in the creative field often mobilises emotional resources to nurture spiritual identity [7].

Another characteristic is that the artist's ideal self is more distant than the average person's, as they often perceive themselves as "contemplative and detached" [8]. However, they can transform emotions, including positive or unwanted states, into a creative outcome [9] [10]. This research is based on converting emotional needs into text prompts to provide to the GenAI system in real time, aiming to support artist users explore their ideal persona more clearly.

This paper makes three contributions to the emerging study of human-AI persona co-creation. First, it presents a real-time interaction system that enables users to iteratively construct and refine AI-generated personas through a *continuous prompt-generation-feedback loop*. Second, it identifies recurring breakdown patterns in user experience when engaging with dynamic persona generation, including prompt compression, perceptual instability, and loss of trust. Third, it advances a conceptual shift from "creative writing" towards a more structured, system-supported approach to persona construction, framing persona generation as a form of guided interaction design rather than purely expressive input.

2. Case study

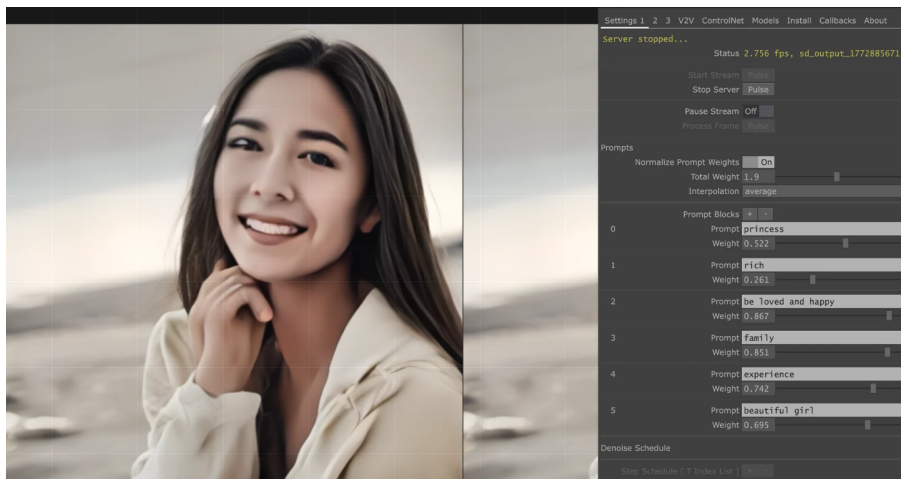


Figure 1: Image generated in real-time by StreamDiffusion's AI, with prompts from participant. Participants then used ChatGPT to enrich the context of the input prompts, leading to creative writing with the following text: *"I am a woman with a heart full of happiness, raised in a family where love was always gentle, warm, and endless. I grew up surrounded by soft laughter, comforting embraces, and the quiet feeling of always being cherished. Because of that, I learned to see beauty in everything, in sunlight touching the window, in flowers blooming after the rain, and in the small moments that make life feel magical."*

This study adopts an exploratory case study approach to examine early-stage interactions with real-time AI persona systems. Given the emergent nature of this design space, a small sample ($n = 6$) was considered appropriate to identify recurrent interaction patterns and breakdowns. Data were collected through screen recordings, think-aloud protocols, and post-session interviews, and analysed using an iterative thematic approach. Rather than aiming for generalisability, the analysis focuses on surfacing interactional tensions and user strategies that arise under real-time constraints, particularly in relation to prompt formulation and system interpretability. Each session took 25-30 minutes. Our research targeted participants who worked primarily in creative and artistic fields, individuals with high idealism who aspire to express this idealism in their creative work.

In addition, participants were asked to chat with Chat GPT about creating paragraphs describing their ideal personas. The participants provided commands to the StreamDiffusion in TouchDesigner system and continuously observed the AI-generated on-screen experience in real time (Figure 1). StreamDiffusion is a real-time optimised version of Stable Diffusion designed for low-latency image generation in real-time [11]. Therefore, the experiential system I designed can continuously generate short images and videos in real time from prompts provided by participants. It forms a *Generative Ideal Persona Experience Loop* that goes from user persona prompts as input to GenAI generating images based on those prompts, to the user observing, and continues to adjust the prompts so that the output is as close as possible to the user's actual needs (Figure 2).

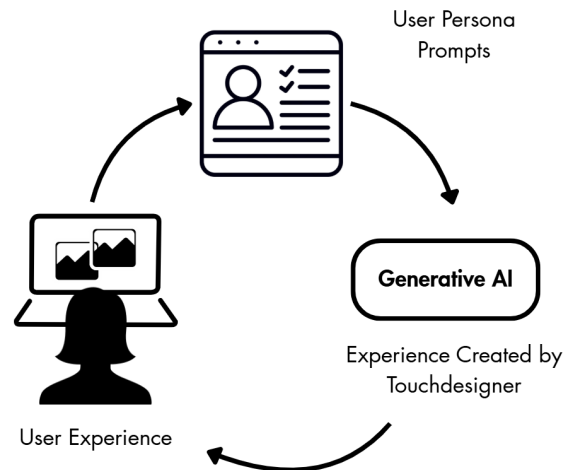


Figure 2: Generative Ideal Persona Experience Loop.

In this position paper, I address the perspectives encountered with participants' versions of personas in the study of ideal personas. I used post-study interview questions to investigate participants' perspectives and feelings about the experience as a whole. Then, I used observation methods to examine the experiences of the participants and those unfolding on the screen.

3. Post-study interview results

3.1. Inconsistent persona prototypes

Participants tended to shorten their requests when prompted to accelerate their interactions with the AI. This resulted in questions lacking detail and the AI system failed to generate results that matched the needs of the users regarding their ideal persona. Although I anticipated that participants would provide fewer detailed prompts due to the five keywords and five-question format designed for greater efficiency, the ideal persona remains a highly personal aspect that users associate with the AI. Therefore, the lack of detail resulted in AI personas that lacked connection to user expectations: "I found the AI-generated images quite abstract and changing too quickly, not what I expected to see. It is also possible that the AI didn't know who I was." (P3).

3.2. Uncanny Valley

[12] In the case study I conducted, I used StreamDiffusion, a real-time feedback system. When participants provided prompts with keywords related to the ideal persona values they wanted to see in the AI, GenAI generated bizarre, distorted persona models, leading participants to reject them. Inconsistent and fragmented feedback about the "ideal persona" significantly eroded user trust in AI. This significantly affected participants' real-time connection to the GenAI system (Figure 3): "I felt somewhat horrified by

the images the AI provided. It wasn't me, nor did it look like a normal person, but it had the appearance of a character considered 'human.'" (P2).

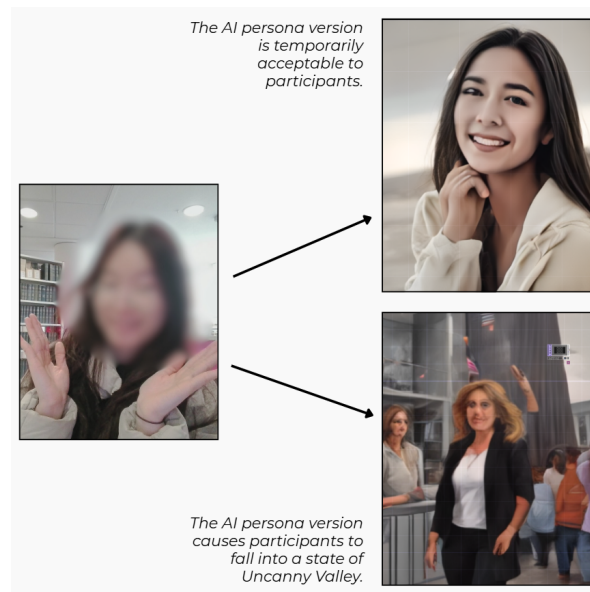


Figure 3: Participants' perceptions of AI-generated personas varied depending on the degree of realism. Moderately stylized AI personas were perceived as temporarily acceptable, whereas highly realistic AI personas tended to evoke feelings associated with the uncanny valley effect.

3.3. Disconnection

Inconsistent system responses characterised most of the post-study feedback I received from the study participants on the real-time user-GenAI interaction. The participants described: "I felt that the ideal persona images that I wanted to assign to my AI were sometimes similar and sometimes entirely different, leaving me confused and no longer wanting to trust its responses." (P5) The case study I provided above is a result of research on participatory user experience design using GenAI to create real-time experiences. An example of an ideal persona not only reflects the problems users are facing with the GenAI system but also represents a potential consequence of AI-generated personas becoming morally and behaviorally amorphous. The inconsistent and unusual results generated by GenAI in the case study I provided stem from how user input is conceptualised. We argue that persona design should evolve consistency, detail, and validation in user-generated questions.

3.4. AI bias

P5 raised concerns about perceived bias in the generated output. When prompting the system with the concept of wealth, the participant observed that the AI tended to generate male figures rather than female: "When I used 'success' as a prompt, the image was mostly related to men, not a girl. I think it is kind of biased." As a result, the participant adjusted the prompt to better align the output with their intended identity.

3.5. Creative exploration

Almost the participants described the AI system as a source of creative inspiration that helped them expand their thinking about their ideal selves. P2 explained that AI could help construct a broader representation of their future aspirations: "It can help me have the whole ideal image of what I want to be in the future."

4. Observation results

Observing the participants showed that the facial expressions of 5 out of 6 people changed from curiosity about the first frames to a rather unexpected state, as they widened their eyes to observe the images in more detail. The participants' faces gradually return to a normal state when they look at something quite familiar and can describe this state as people viewing artwork in exhibitions or museums.

P1 was the only participant who had tried this experience before. Every experience using the device with the P1 is easy. During the GenAI-created visual observation experience, P1 consistently showed interest by her eyes lighting up when looking at images, which she told it was perhaps close to her and reminded her of her ideal self. Before starting the experience, P5 and P6 expressed excitement about trying new experiences they had never encountered before. GenAI faithfully responded to the initial images, expressing its love of the style through exclamations.

P2 said that she thinks that AI-generated image viewing activities like this are passive. It would be more intriguing if there were a sound to increase the connection status of her experience. P3 and P4 showed rather bored faces from the third minute onward, and they gradually move into a state of bewilderment as they stare at the screen, expecting something more intriguing to appear. The researcher observed that the participants' moving and changing visual experiences gradually slowed as they became less interested in them. Therefore, the researcher suggested that the participants can stop the experience.

5. Discussion and Conclusion

The findings suggest that real-time interaction pressure significantly shapes how users construct prompts, often leading to compressed or underspecified inputs. This reduction in descriptive richness restricts the system's ability to generate coherent persona representations, resulting in perceptual instability and misalignment with user expectations. These dynamics indicate that persona generation is not solely a function of model capability but emerges from a tight coupling between temporal interaction constraints, user expression strategies, and system responsiveness.

We further argue that the limitations observed in current systems stem from how user input is conceptualized and that persona design should evolve from "creative writing" to "structural engineering". The user experience for creating AI personas should be designed as a system that provides users with numerous suggestion features to write a creative and detailed prompt. Because while AI creates AI Personas, they require user control and commands to develop into a systematically accurate mental model, thus avoiding potential harm to the user's mental well-being in the future.

Instead of letting AI infer similar characteristics related to the overarching prompts provided by the user, based on *from creative writing to structural engineering*. I propose that future AI Persona systems should (1) train users on how to create standard prompts; (2) maintain a transparent "default ethical persona" with a clearly defined set of safe and predictable communication behaviors that the system relies on; (3) transform hidden ethical constraints in the source code into a specific user interface and user experience feature that the user can adjust; (4) have users continuously participate in controlling the results by providing detailed and up-to-date prompts in real time.

This position paper addresses the results of a case study I conducted, showing that the disruption in the user experience is not a random issue in the emotional flow when they engage with it, but rather stems from the highly personalised AI persona-creation command structure tailored to them. The implementation of the four findings I propose not only addresses the emotional breakdown and Uncanny Valley phenomenon, but also offers new potential for future research on user experience design, as UX designers view AI as a personal tool and are empowered to train it systematically. In any case, I believe that designing a user flow to create AI personas is now necessary because AI will continuously and rapidly upgrade its ability to generate responses through enhanced security and privacy [13], so designing a transparent system and empowering users is essential to avoid fears and inconsistencies in user-AI interactions [14]. Furthermore, when individuals can widely share AI Personas, Personas

can accurately assume multiple roles controlled by the primary role of the user who created them. Furthermore, based on the researchers' observations in this study, I suggest that AI personas should be designed to be more dynamic and diverse, with greater physical interaction to stimulate engagement between users and their ideal personas in the future.

Declaration on Generative AI

During the preparation of this work, the author used Grammarly and Quillbot in order to: Grammar and spelling check. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

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