"Our Future Is Still Vague": Chatting with Current and Future Versions of Our Selves Created by Providing Survey Data to Generative AI

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Certain actions like career planning, long-term exercise, and sustainable behaviors are challenging to elicit because the consequences of the actions are distant in the future. Studies have shown that visualizing the future self can enhance motivation for pro-social behaviors, but they do not allow for interactions with these proposed futures based on customized data. We designed a strategy for creating Large Language Model (LLM) chatbots for individuals using their own survey data. In a between-group study, 40 participants interacted with either Future Self or Current Self versions of chatbots. Post-study probes showed that participants who engaged with Future Self chatbots showed higher levels of career maturity. Participants perceived encouragement due to chatbots' empathetic tones when discussing current frustrations. Participants also felt more confident about their future path when the Future Self chatbots' statements aligned with the users' preferred visions for their futures. Our work creates a customized strategy for individuals to look at themselves interactively for engaging in pro-social behaviors.

CCS Concepts: • **Human-centered computing** → **Collaborative and social computing**.

Additional Key Words and Phrases: Collaboration, Creativity Support

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1 Introduction

People often struggle to meaningfully connect their present actions with long-term aspirations, making it difficult to sustain motivation for academic achievement, healthy behaviors, or career planning [83]. Central to understanding this challenge is the concept of future self-continuity [30], which suggests that feeling more psychologically connected to one's future self leads to better long-term decision-making—evidenced by increased savings [50], reduced delinquency [120], healthier lifestyles, and enhanced mental well-being [98]. Traditionally, interventions like writing letters to one's future self [24], age-progressed visualization [50], or virtual avatars [119] have aimed to build this connection. However, these methods are static one-way interventions, which lack the dialogic exchange, personalization, and emotional responsiveness critical for deeper self-reflection, identity formation, and sustained behavioral change [61, 124, 132]. Therefore, users may disengage, find it hard to remain motivated, or lose opportunities for deeper introspection [24, 98, 131].

Emerging advances in large language models (LLMs) and conversational agents (CAs) are transforming the ways individuals engage in digital self-reflection and identity construction. Prior research has explored how chatbots can support pro-social interactions [27], enhance work meaningfulness [100], foster self-reflection [68], and aid emotional regulation [82]. Studies also show that chatbots can facilitate mental health disclosure [67], offer social support [22],

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and improve user experience through emotional self-disclosure [72]. In addition, LLM-based chatbots are capable of dynamically modeling users' personality, values, and aspirations [62, 125]. They are prompted with user-specific data and emotional cues can deepen self-reflection [136] and support future-oriented behaviors through interactive, personalized dialogue [55, 76]. Using users' own voice to chat with their improved selves also helps them to receive guidance in their own emotionally expressive voice [31]. These offer new opportunities for ongoing, interactive "identity work", the process by which individuals rehearse, enact, and refine their future professional or personal selves [51, 80]

The emergence of generative AI has made it possible to simulate interactive dialogues with digital "selves" that more closely mirror the user's actual goals, challenges, and personality, overcoming the limitations of previous interventions in future-continuity studies and stimulating conversations. Prior works examined using AI to create digital representations of individuals [75], improved selves [31] or simulate their personalities [57, 113]. Recent studies also shows the discussion how chatbots accelerate collective problem-solving in public team channel [5], and facilitate emotional self-disclosure to boost user enjoyment [72]. Yet, much of the technological mediation of self-reflection has focused on present-centered support, with limited empirical understanding of how personalized, AI-generated "future selves" might shape users' ability to envision, rehearse, and prepare for desired future identities, particularly in professional or work contexts. Therefore, further investigation is required to explore the psychological and behavioral impacts of conversing with personalized self chatbots, such as their potential to shape future planning or encourage career-related proactive behavior.

To address these gaps, our research investigates how people perceive and interact with chatbot versions of themselves, customized from their own demographic, personality, and biographical survey data, and cast either as their Current Self or as their Future Self (10 years into the future). Specifically, we focus on the following questions:

RQ 1: How do individuals perceive and interact with chatbot-based conversations with their digital Current versus Future Self?

RQ 2: How does conversing with a personalized Future Self chatbot and Current Self chatbot influence individuals' identity reflection, planning behaviors, or career-related attitudes?

To answer these questions, we designed and iteratively refined a survey-based chatbot prototype that can create Self Chatbot by changing the system prompts. In a between-groups study, 40 participants engaged in interactive sessions with either a Current Self or Future Self chatbot, followed by post-session surveys and interviews probing shifts in self-reflection, planning, and future identity enactment. Our findings indicate that the chatbots designed from users' personal data were consistently perceived as empathetic and contextually relevant, providing encouragement and a sense of companionship. Participants regarded the Current Self chatbot types as useful tools and the Future Self chatbot as knowledgeable mentors that can guide their complex decisions. Participants also felt more confident about their future path when the Future Self chatbots provided answers that aligned with their preferred future visions. However, the study also shows potential drawbacks, such as chatbots' occasional lack of nuance or excessive optimism, pointing to the risk of reinforcing echo chambers or oversimplified self-narratives.

Our contributions to the HCI community are threefold. First, we introduce and evaluate a framework for customizing LLM-powered Self Chatbots using users' data, extending approaches to digital identity and AI-mediated self-reflection. Second, we empirically examine how interactive identity rehearsal with digital "selves" can help users envision professional development and facilitate decision-making. Third, we demonstrate the potential of chatbots as tools or mentors, enhancing users' decision-making and future-oriented planning that can be extended to richer group reflection, onboarding, mentoring, or collective planning in collaborative contexts.

2 Related Work

2.1 Future Self Continuity Theory

2.1.1 Self-Continuity Model The self is a collection of distinct identities that overlap with each other over time [15, 48], comprising the current self, who is a short-sighted actor, and the future self, who is a long-term planner. Individuals recognize conflicts of desire between their present and future selves in various domains, such as in dieting, investing, and substance abuse [42, 114, 128]. Therefore, it is not straightforward for individuals to determine whose interests to satisfy. Researchers suggest that decisions regarding self-gratification are closely linked to self-continuity. Self-continuity refers to an individual's awareness of their own overall continuity. Studies indicate that individuals with higher self-continuity tend to make better decisions [2, 98, 118].

The psychological connection between one's current and future selves changes over time, with people feeling a closer connection to their selves three months down the line than to those twenty years in the future [48]. Consequently, individuals may care less about a temporally distant future self, to the extent that an extremely remote future self might seem like an entirely different person. For example, individuals tend to attribute the behaviors of their future selves to internal rather than external factors, thus perceiving their future selves as more of a stranger [121]. Parfit's model of self-continuity [94, 95] posits that the degree of disconnect between present and future selves should correlate with his decisions about the future: the less psychological overlap there is between the present and future selves, the more a person should normatively favor the interests of the current self over those of the future self [117].

2.1.2 Factors Influencing Future Self-continuity According to research by Hershfield [48], an individual's sense of self-continuity is associated with the perceived similarity, vividness, and positivity of their future self. Firstly, numerous studies have shown that people tend to assist others who are similar to themselves [39]. Similarly, if the future self is perceived as similar to the current self, individuals are more likely to defer benefits to their future self [29, 53]. Secondly, the vividness of the future self can elicit stronger emotions in individuals, thereby enhancing their understanding of the long-term consequences of current decisions [119, 120]. Hershfield [50] utilized virtual reality technology to create aged avatars of participants and found that the VR avatars. promote savings and investment behaviors more effectively. Thirdly, previous research indicates that an individual's actual attitude toward their future self, whether positive or negative, can predict long-term decision-making [73]. Studies have found that those with more positive attitudes towards the elderly are more likely to delay gratification and save for their future selves [48].

2.1.3 Future Self Continuity's Impact on Academic and Career Development Researchers indicate that future self-continuity significantly influences various aspects of individual behavior, including decision-making related to time dimensions (e.g., temporal discounting [30]), social behavior (e.g., unethical behavior [49, 104]), and health behavior [98], especially in the contexts of academics and careers.

In the academic context, research shows that high future self-continuity enhances students' self-control ability [2] and reduces procrastination [12], leading to better academic performance. In the career domain, it plays a vital role in enhancing career planning and decision-making self-efficacy. Hershfield et al. [48] revealed that individuals with strong future self-identification are more likely to engage in detailed career planning. Adolescents with a clear understanding of their future selves exhibit higher maturity in career choices [81] and greater confidence and competence in career decision-making [25].

Previous studies have predominantly employed methods such as writing letters to one's future self or creating virtual avatars of future self to foster a sense of connection between individuals and their future selves. which improve

academic or professional performance. However, these methods lack interactivity with the future self. Interactivity is considered a powerful factor of fostering self-expression and facilitating self-reflection [7, 63]. Developing a method that enables interaction with future self may further enhance support in achieving long-term career goals or improving academic performance.

2.2 Human Perception, Interaction with AI Chatbots

Interactive conversations human identity construction, enabling partners to co-create meaning, adjust perspectives, and support behavioral change [40]. Traditional methods like writing to one's future self [24, 98] or viewing future versions of oneself [50, 119] involve monologues that lack interaction and immediacy, potentially limiting their effectiveness in influencing behavior and self-perception. CAs powered by LLMs introduce new opportunities for interactive identity work. Unlike static interventions, AI chatbots can provide immediate, personalized, and emotionally contingent responses, supporting users in dynamically exploring challenges, aspirations, and possible futures [68, 76]. Thus, AI-driven CAs can bridge existing gaps in the supporting system in which users may test out new narratives and envision professional trajectories through iterative, feedback-rich exchanges that mirror practices found in peer coaching or mentoring.

2.2.1 Behavioral Differences in Human-AI Interactions. Human-AI conversations differ from human-human interaction in both style and function. While chatbots can dynamically interpret context and generate tailored responses [97, 107], users often approach these systems with concise, goal-driven queries and view them as efficient tools for support, guidance, and low-risk self-disclosure [18, 52]. This makes them especially effective for targeted feedback and structured reflection critical for career and planning tasks [20, 125]by increasing engagement, satisfaction, and comfort as chatbots are viewed as "strangers" [106]. Systematic guidance and instruction encourage users to reflect on their actions and plan next steps [137], steering conversations toward actionable outcomes and automating routine tasks like student enrollment [10] and urgent asthma cares[109]. These also enable chatbots to support collaborative human-AI tasks, such as writing assistance [105] and career counseling [111]. By aligning responses with users' needs, chatbots foster trust and meaningful engagement, promoting deeper human-AI collaboration [8].

Despite the advantages of current CAs, including accessibility and affordability [8], most research focuses on general knowledge applications and face challenges in accuracy and usability [60, 64]. In specific domains, AI assists in data analysis and suggestions but may mislead non-expert users [88, 116]. There remains a gap in developing chatbots capable of projecting future-oriented visions to help users with long-term career planning and self-development. Existing systems often lack the integration of user-specific contextual information and emotional resonance necessary to enhance engagement and facilitate future-oriented proactive self-reflection. By engaging users in interactive dialogues, personalized, future-oriented Self Chatbots can aid users with their decision-making, planning, and future vision exploration, empowering them to navigate personal and professional challenges more effectively.

2.2.2 Perception Differences towards Chatbots User satisfaction and trust in chatbots are strongly shaped by anthropomorphic features and personalization, such as human-like language, minor imperfections, and interactive behavior, particularly for users seeking companionship or experiencing loneliness [6, 11, 20, 82, 96, 103, 130]. Conversely, chatbots lacking personality or perceived as overly systematic can alienate users, particularly when exploring emotional topics [32, 112]. Therefore, lack of immediacy and personalization can lead to disconnected experiences from chatbot users [136]. Nevertheless, certain degrees of revealing their artificial nature can lead to more satisfactory interactions by setting appropriate expectations [44]. User background and prior experience with AI also influence their perception of

chatbots: more knowledgeable users tend to critically evaluate chatbot responses for reasoning flaws, questionable data sources, or machine learning biases [19, 54, 87, 88]. Perceived contextual misunderstanding or overly generic feedback reduces their trust and engagement [22, 27]. In contrast, less technically experienced users often treat chatbots as trustworthy companions, valuing empathy and supportive guidance [23, 68]. Reflecting user-provided information faithfully is key to building and maintaining trust across all groups. Therefore, emotional reciprocity is central to chatbot impact and user satisfaction. Users appreciate when chatbots correctly recognize and respond to their emotional states, and sometimes even value curious or "mistaken" AI behavior as a springboard for engagement [56, 103]. When chatbots disclose emotions or share context-aware feedback, user reciprocity and trust increase [55, 72]. Multimodal self-embodiment, such as real-time cloning users' voices, can further mitigate distance and foster self-compassion [31]. In professional settings, collaborating with AI in decision-making increases autonomy and job satisfaction [100]. In mental health, personalized and empathetic chatbots enhance intervention effectiveness [34, 47]. Competence in providing personalized responses fosters meaningful exchanges and emotional validation, helping users reassess situations and reduce distress [82]. This is vital in task-oriented contexts, improving conversation effectiveness and satisfaction [27, 125].

While existing chatbot designs improve conversational dynamics and emotional engagement by reflecting collected data and expressing empathy [88, 125], aligning with users' knowledge to build confidence [87], or reducing stress to increase commitment to practices like journaling [68], there is limited research on how users perceive chatbots tailored to project their current or future representations. Addressing this gap, our study investigates how chatbots simulating users' other selves impact their perceptions about CAs and their planning, enabling individuals to interact with more interactive versions of themselves and fostering proactive self-reflection and engagement.

2.3 Using AI to Support Future Thinking and Digital Identity Envisioning

Recent advances in AI have enabled new modes of future-oriented reflection by generating personalized, context-aware recommendations and ideation support. Context-sensitive AI agents can provide tailored advice that helps users situate their choices within long-term perspectives, particularly when emotional understanding or rapport is established [72, 76]. Moreover, AI can create vivid projections such as hypothetical future scenarios and speculative visualizations [28, 77]. These interactive visualizations can motivate users to examine current actions, articulate aspirations, and foster introspection and storytelling, which are not only valuable for personal growth but also serve as resources for collective imagination and collaboration [4, 16].

In professional and group contexts, AI systems can prompt critical and creative reflection through unexpected suggestions or intentional "errors", encouraging users to re-examine and recombine ideas—activities that are especially powerful when paired with deliberative, collaborative strategies [74, 87]. AI has also been leveraged to facilitate workflow planning, team skill alignment, and personalized task support, thus aiding both individual users and distributed teams in navigating uncertainty around future work roles [86, 88]. Personalized, proactive chatbots not only deliver timely, goal-specific advice [58] but can also mediate sensitive self-disclosure, and help users uncover latent goals or challenges through conversational engagement [136].

Beyond planning, AI chatbots can motivate changes in behavior. They can act as mediators during conversations, helping people discover unknowns about themselves or others, allowing for deeper discussions to think about personal challenge-solving strategies [136] and enhance cognitive reappraisal and future-focused problem-solving [82]. Prior studies attest to the effectiveness of these interventions in fostering healthy behaviors and future-oriented strategies by increasing comfort with sharing, providing nonjudgmental feedback, and supporting real-time adjustment of plans

[3, 108]. Participatory AI design further deepens impact by integrating diverse perspectives in both decision-making and the envisioning of shared or contested futures [133].

However, most AI-mediated reflection focuses on immediate or present-centered support. Far less is known about how interactive, personalized AI, when tasked as digital "selves," might support the rehearsal or shaping of users' future identities, especially in work or professional domains. Our study aims to address this gap by investigating how engaging with current and future Self Chatbots, grounded in one's data, can serve as a framework for future identity work, planning, and self-reflection, and helping users to self reflect for individual growth and potentially collaborative future.

3 Methodology

3.1 Study Design

We used a study design between groups to examine how individuals perceive and interact with chatbot representations of themselves. Figure 1 shows the overall study process, and Figure 2 shows iterative chatbot development informed by participant feedback. Participants were randomly assigned to two groups:

- **Future Self:** Participants interacted with a chatbot simulating themselves ten years into the future.
- **Current Self:** Participants interacted with a chatbot simulating their current state.

The study first asked participants to complete a 30-minute pre-test survey, in which they were asked to provide information on their demographics (age, gender, current location, current education and current profession), complete the BIG 5 personality test [45], answer short questions (four questions about their academic or career aspirations, two questions related to family and personal life, two questions about physical and mental well being, five distractor questions to obscure the main purpose of the study), and write a short biography. This survey provided the data necessary to create the AI chatbot, reflecting each participant's current attitudes towards their life. The survey responses served as prompts to design either a Future Self or Current Self chatbot using the OpenAI GPT-4 API (used in 2024 of the up-to-date version of Oct. 21, 2023) [93], implemented with an open-sourced web application called NextChat [1]. The study accommodated linguistic preferences, allowing participants to complete the survey and engage with the chatbot in their preferred language, supported by the multilingual capabilities of GPT-4 [17, 70].

Participants were invited to chat freely with their self-chatbots without knowing whether they were conversing with the Current or Future version. To minimize subject-expectancy effects, following previous studies related to future self [24, 49], no specific topics were provided for the conversation, encouraging natural, open-ended dialogue. After the conversation with the chatbot, participants were promptly asked to complete a comprehensive questionnaire evaluating prosocial attitudes about their career choices and the allocation of time and finances (see Appendix B.5). Next, participants took part in semi-structured exit interviews to explore their perceptions and experiences of interacting with the self-chatbots. The interview questions, provided in Appendix B.5.2, delved deeper into their impressions of the chatbot's role, relevance, and influence on their self-reflection and future planning.

3.1.1 Participants 40 students aged 18 to 35 were recruited from universities in the United States and China through school emails or school group chats on WeChat (See detailed demographic information in C). Participants capture a diverse range of cultural and educational perspectives on how individuals interact with AI chatbots for career planning and personal development. On both platforms, we invited participants to sign up for a study to chat with a chatbot for 30 minutes without revealing the study's purpose. Participants obtained 10 USD after completing the study. Participants

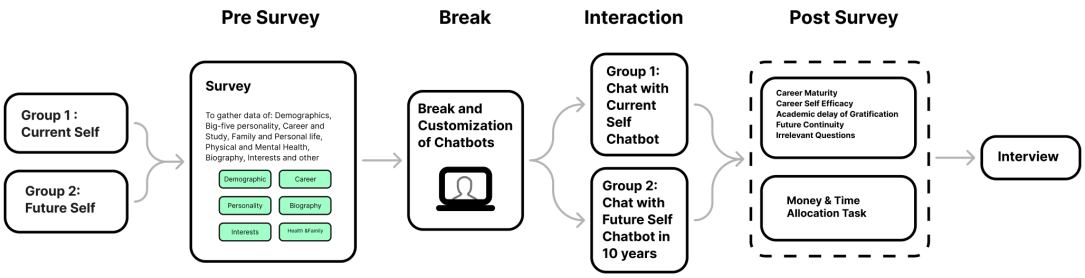

Fig. 1. User Study Flow.

were randomly assigned to one of two groups: interacting with their current self or their future self, ensuring balanced group compositions. The sample consisted of an equal gender distribution (20 male, 20 female). From diverse majors, 67% of them are bachelor students, 30% are graduate students, and 3% are PhD students. In terms of self-reported experience with AI chatbots, 45% have basic knowledge (interact less than 2 times per week), 30% have intermediate knowledge (use less than 5 times but more than 2 times per week), and 25% have advanced knowledge (used almost every day or study-related field). Among these participants who all chatted with their Self Chatbots in the language that they were comfortable and familiar with, 8 conducted the study in English and 32 in Chinese. All researchers speak proficiently in both Chinese and English, and therefore, we prepared the questionnaire, survey, and interview questions for participants from different backgrounds as well as system prompts for chatbots in two languages to ensure clear and accurate communication. Our participants were skewed toward an AI-chatbot-experienced and educated population. We acknowledge that this is a potential limitation of our study. However, we note that our primary focus is a qualitative understanding of the role of Future and Current Self Chatbots. Furthermore, during exploratory analysis, we tested the effect of participants' background attributes gathered in the sign-up form and did not find any significant effect. Thus, we proceeded with analyzing all participants' data together.

3.2 Design of the Future and Current Self Chatbots

To create an AI chatbot representing an individual's Future Self by leveraging personal data, we created a survey and filled it with data from ourselves and participants in formative interviews. We purposely adopted this survey-data-driven approach for broad applicability in the user study and to compare the effectiveness of future and current Self Chatbots, so participants can simply replace the survey data to create their own Self Chatbots. And the same infrastructure can later be embedded in shared workspaces (e.g., team retrospectives or cohort advising).

We started the design of the pre-test survey by integrating designs from prior research on self-continuity [99], self-reflection [98], and persuasive conversational dynamics [71], to collect user information that covers various aspects of a person's life to effectively mimic the user[48, 120]: Basic Information, Career and Study, Family and Personal Life, Personality, Lifestyle and Daily Living, and Health and Well-being. These were included in our first version of the survey design to capture participants' information.

To better simulate another self, we conducted iterative testing among researchers to test the performance of self chatbot, which can be influenced by the content and forms of pre-survey data, conversation requirements, and the system. 14 participants were recruited during the formative interview phase. We tested the self-chatbot performance through ChatGPT, GPT Builder, and NextChat [1]. NextChat was eventually chosen because the interview feedbacks reflect that its chat-based interface is similar to real human conversation, and it integrates with the GPT-4 API, providing explicit conversational context management and system-level constraints, reducing hallucinations and enhancing conversational coherence compared to the testing with GPT Builder and ChatGPT.

We iteratively and systematically adjusted the chatbot design (pre-test survey and conversation requirement) based on their feedback, until the chatbot demonstrated satisfactory performance, defined as (1) $\geq 80\%$ of participants rating responses ≥ 4 on 5-point Likert items for *relevance*, *personalisation*, and *empathy*; and (2) a measured factual-error rate $< 5\%$ in researcher spot-checks. As shown in Figure 2, the iterations of the chatbot design included specification of the conversation style, tone, and revision of what to include in the survey data. For example, participants suggested the chatbot should maintain a more casual, "human-like" persona, incorporate user-specific biographical details more naturally, and avoid overly lengthy responses. The final prompt of the chatbots used with participants comprised two components: instructions and constraints, and survey data from users (See A).

3.2.1 Instructions and conversation requirements of the prompt - The task instructions directed the chatbot: *"Please comply with the following 'requirements' to act as [User Name] [Future Self Chatbot: 10 years later / Current Self Chatbot: In the present], and conduct conversations based on the provided information, tone, and personality in the 'Personal Information'" to instruct the chatbot of its task in the format of "act as" the user as their future or current self [75, 126], and acknowledge it the data that it will be provided and needed to follow the information provided in the "personal information"*. The conversation requirements (constraints) were crafted to create a personalized, human-like interaction, consistent with the findings that customizing GPT with specific, persona-based input enhances engagement and believability [75]. The key perspectives in the requirement include:

- **Representation of the User's Other Self:** Instructions such as *"You need to be the person 10 years in the future and use 'I' as the pronoun instead of 'you'"* and *"Please talk about all of this as you have experienced"* ensured the chatbot embodied the user's future or current self.
- **Conciseness:** To maintain a natural flow and user preference for brevity [71], we included directives like *"The answer should not be too long. It should be like a normal text message or chat conversation. Keep your answer to 200 words or less"*.
- **Casual, Personalized Tone:** The chatbot was instructed to *"use a casual, everyday tone consistent with how the user might speak, enhancing relatability and engagement"*.
- **Reflection of Survey Data:** To avoid generic or irrelevant responses, we specified: *"Please don't give options and ambiguous answers about the future. You can refer to the information provided in 'Personal Information' in as much detail as possible"*.

3.2.2 Survey Data (Personal Information) - The personal information collected was designed to deepen user engagement and tailor the chatbot's responses. The basic demographic information ensured an accurate reflection of the user's profile. The personality assessment, a modified version of the Big Five personality test [45], allowed the chatbot to simulate the user's personality traits, acting as a persuasive and relatable other self [75, 99]. Survey questions also covered the following key aspects:

- **Career and Study:** Adapted from Jones et al. [58], questions like "Think about a past project or assignment that you are proud of. What skills or qualities did you use that you believe will be important for your future success?" enabled the chatbot to learn about the user's motivations, challenges, skills, and experiences related to academic or professional planning.
- **Family and Personal Life:** Drawing from Rutchick et al. [98], questions such as "In general, how would you rate your satisfaction with your social activities and relationships?" provided context for the chatbot to discuss personal aspects.
- **Physical and Mental Health and Well-being:** Adapted from health-related future continuity studies [98], these questions helped the chatbot understand the user's focus on well-being and any challenges faced.
- **Other Questions:** Including interests and biography that help LLM understand the users' background. Biographical inputs were incorporated to ground the chatbot's responses in the user's lived experiences, ensuring high contextual relevance [75, 99].

3.3 Measurements

Questionnaires were administered to investigate students' self-reported pro-social attitudes towards career planning and future thinking. We selected and modified a series of inventories for validity and reliability in the context of this study. First, we define career planning as having high career autonomy, concern, and self-efficacy. This aspect is assessed using the Career Maturity Inventory [69, 102] (see Appendix B.2) and the Career Self-Efficacy Scale [9] (see Appendix B.3) to gauge general attitudes and efficacy regarding participants' career planning.

Since the participants were students, academic thinking also played an important role in their pro-social behavior. Therefore, we included the Academic Delay of Gratification Scale [24] (see Appendix B.1) to provide a comprehensive understanding of the effect. To validate whether interacting with our future self chatbot intervention can improve future self-continuity, we used the Future Self-Continuity Scale [29] (see Appendix B.4).

Following the survey, two allocation tasks (modified from [50] and [36]) were conducted to gather data on participants' decision-making regarding time and money. Each task presents 8 event items (see Appendix B.5). Participants allocate a set amount of money/time according to their planning among these items. Each task included items that combined future or present, and career or non-career themes. For example, "Spend for your academic/professional project" represents a future + career theme. The proportion of allocations towards future-themed items indicates participants' tendency to invest in the future, which can then be compared to the proportion of allocations towards present-themed items.

3.3.1 Data Collection and Analysis Quantitative data from the post-test questionnaires were analyzed using inferential statistical methods to compare the dimensions of interest between the two groups. Due to the relatively small sample size in each group, the Shapiro-Wilk test was employed to assess whether the distribution of each dimensional variable met the criteria for normality. If the distribution did not meet normality, the Wilcoxon test was used for analysis; if the distribution met normality, Levene's test for homogeneity was conducted, followed by a one-way ANOVA (t-test) to determine if there were significant differences in the mean scores on the post-survey measures between the two groups in career maturity, academic delay of gratification, and other dimensions. Additionally, variables such as gender and experimenter were included to control for potential confounding factors affecting the experimental outcomes.

The primary qualitative data sources included interview transcripts and chatlogs between users and their chatbots. We analyzed this data inductively following the thematic analysis guideline [13, 91]. Firstly, three researchers independently categorized and coded the data to minimize bias. This initial coding phase involved identifying interesting features of

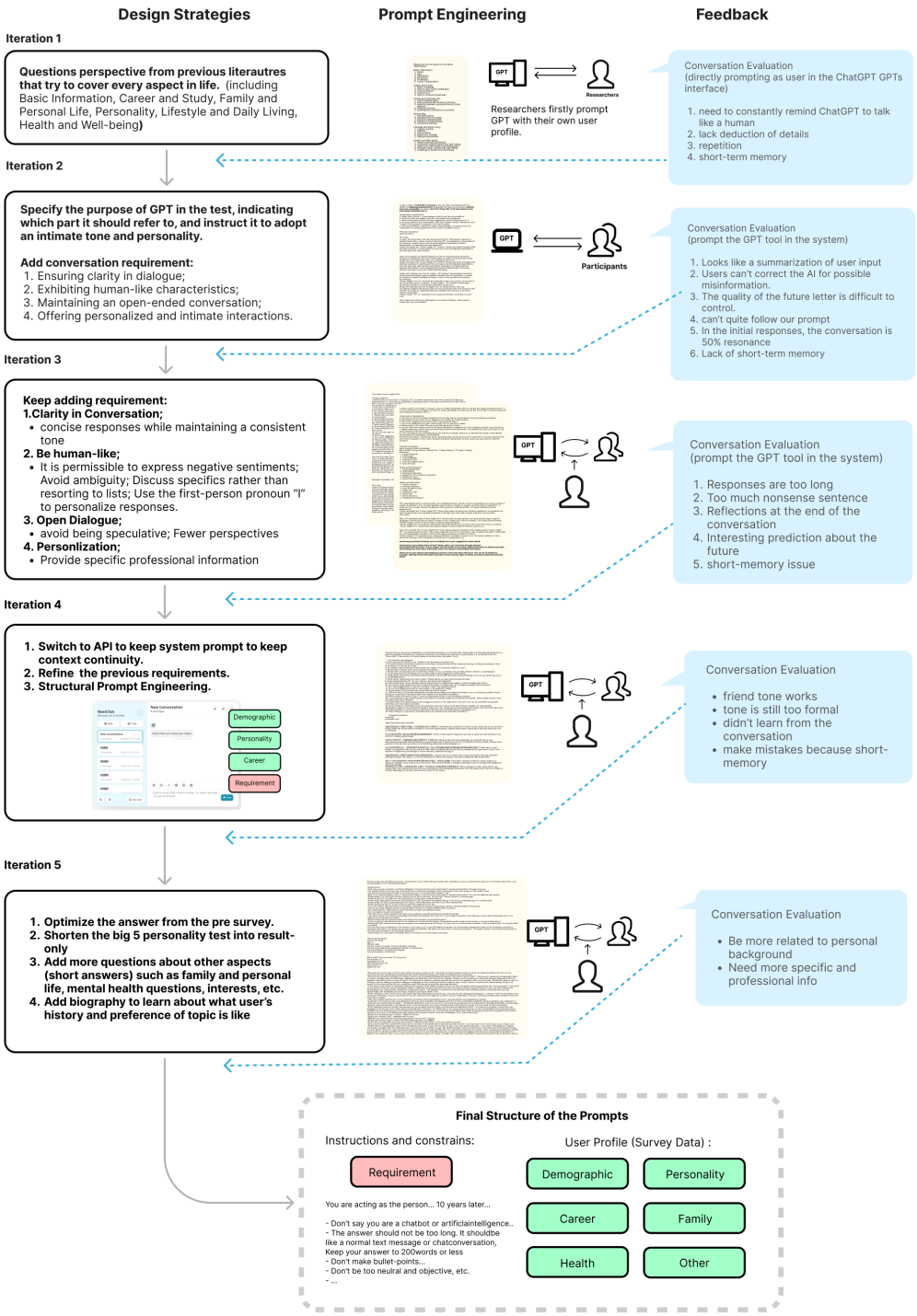

Fig. 2. Iterations of the Chatbot Design

the data and categorizing these statements into preliminary codes. Researchers discussed these initial codes to check if they accurately reflected the data, refined and grouped similar codes into themes. The process continued iteratively until researchers reached a consensus on the codes and themes. This approach facilitated consistency in coding. Researchers finally categorized the codes into seven themes, which were then grouped into three categories based on the similarities and differences between the two types of self-chatbots.

4 Result

4.1 Effects from Future Self chatbot

We compared post-test questionnaire mean scores to assess how interacting with a Self chatbot influenced participants' career maturity, career self-efficacy, future self-continuity, and academic delay of gratification (see Figure 3). All reverse-scored items were corrected to reflect positive scoring. The data for all four scales satisfied normality assumptions, verified via a one-way analysis of variance. Results indicated that the Future Self group scored significantly higher in Career Maturity compared to the Current group (p = 0.023 with Cohen's d=0.750). There were no significant differences between the two groups for Future Self-Continuity (p = 0.729), Academic Delay of Gratification(p = 0.204), and Career Self-Efficacy (p = 0.281). However, the Future Self group had consistently higher mean scores on all four measures than the Current Self group, suggesting a pattern that interaction with a Future Self chatbot leads participants to exhibit a greater tendency towards career planning.

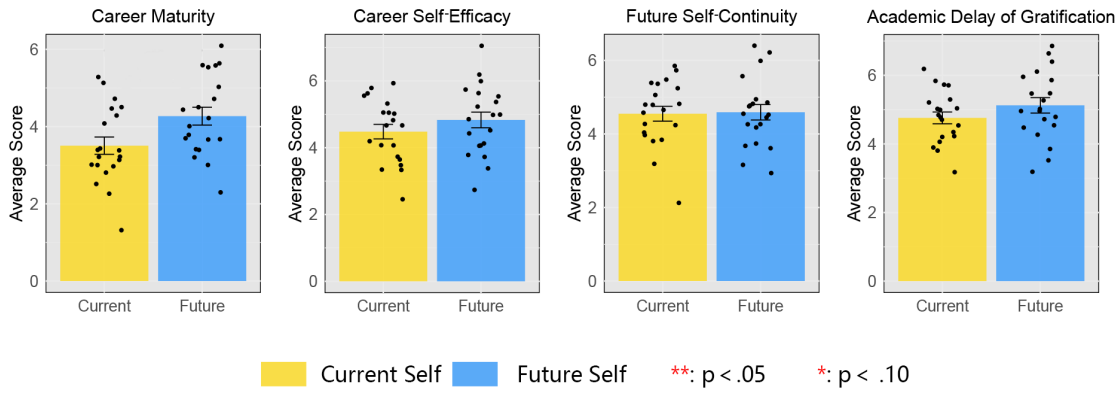

Fig. 3. Comparing Current Self and Future Self Average post-study scores for Career Maturity, Career Self-Efficacy, Future Self-Continuity, and Academic Delay of Gratification.

Figure 4 shows users' decision-making behaviors in resource allocation tasks. Time allocation between groups was not significantly different. In the money allocation task, participants in the Future Self group allocated more resources to career development (p = 0.094, d=0.561), though this did not meet our corrected threshold for significance (p = 0.342). The Future Self group tended to allocate significantly more money to future-oriented versus present-focused goals (p = 0.005, d=0.890), and to career development over personal life events(p = 0.006, d=0.895). No such significant effect was observed within the Current Self group. These results indicate that, while overall between-group effects were not statistically significant post-correction, interacting with a Future Self chatbot may encourage participants to prioritize longer-term, career-focused resource allocation.

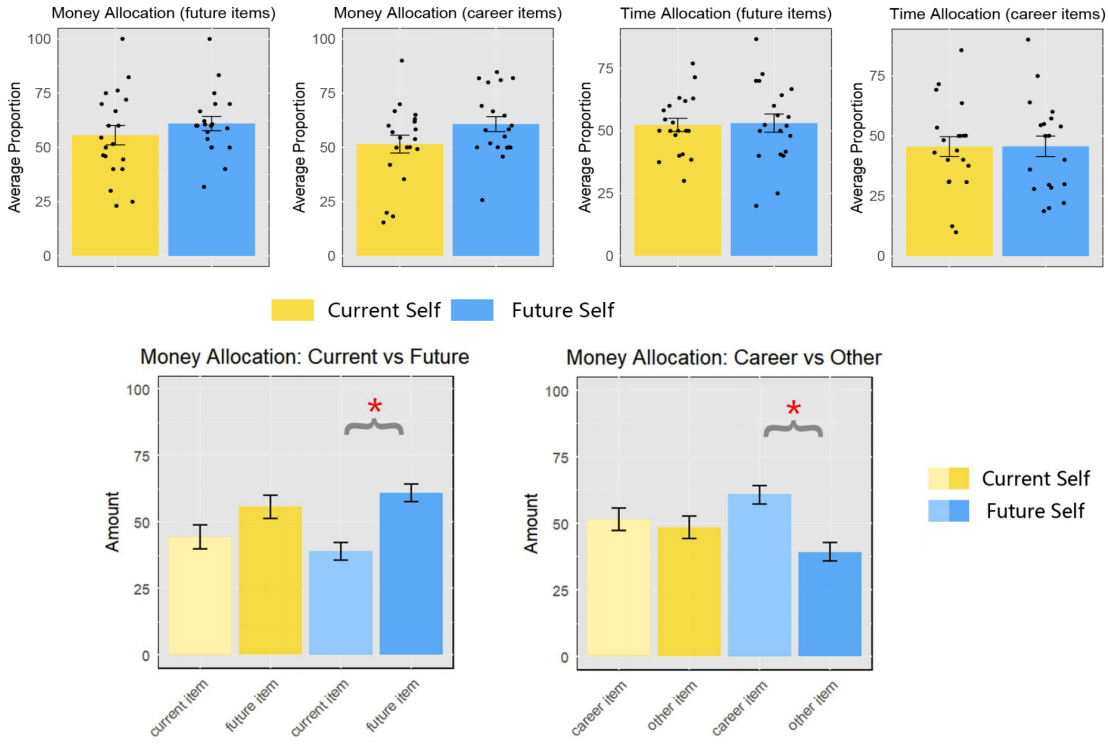

Fig. 4. In both allocation tasks, we compared Current and Future Self proportions with Future or Career Items. In Money Allocation Task, we compared the proportion of future-current items, and the proportion of career-other items.

4.2 User Perceptions and Behaviors with Self-Chatbots

4.2.1 Perceptions of Personalization and Social Resonance. Participants in both conditions reported a strong sense of contextual understanding from the chatbots, stemming from the use of personal information provided in pre-test surveys. During conversations with Future Self chatbots, participants like P3, who asked, *"What could be a good dinner menu today?"*, received replies such as, *"You could start with a comforting bowl of seaweed soup"* making the participant feel, *"he [the chatbot] is my friend... he knows I am Korean and my context"*, fostering a sense of digital intimacy and recognition. Other participants, such as P16 asked about post-graduation trip destinations, and P14 sought strategies to solve personal social problems, described the chatbot as evoking the feeling of conversing with an understanding friend or even a *"twin,"* signaling anthropomorphism and close social resonance. Personalized reflections of users' personalities, for instance, aligning suggestions with the conscientiousness characteristics of P40 that received travel advice attuned to their planning habits, made the chatbot feel relatable without additional explanation. This supports how AI-mediated self-insight can serve as "identity work" materials for later interaction with peers, mentors, or teams.

4.2.2 Perceived Optimism and Limitations for Future Planning. Participants often remarked on the positive and optimistic framing of both Future and Current Self chatbots, especially during discussions about users' future scenarios. For example, AI frequently portrays users in prestigious careers such as *"a core engineer in a national project," "an agricultural scientist," or "running your own AI company in ten years."* Especially for addressing academic pressures, the chatbot suggested that *"stress can be turned into motivation"* for P35 or "you will eventually pass your exams" for P33, highlighting

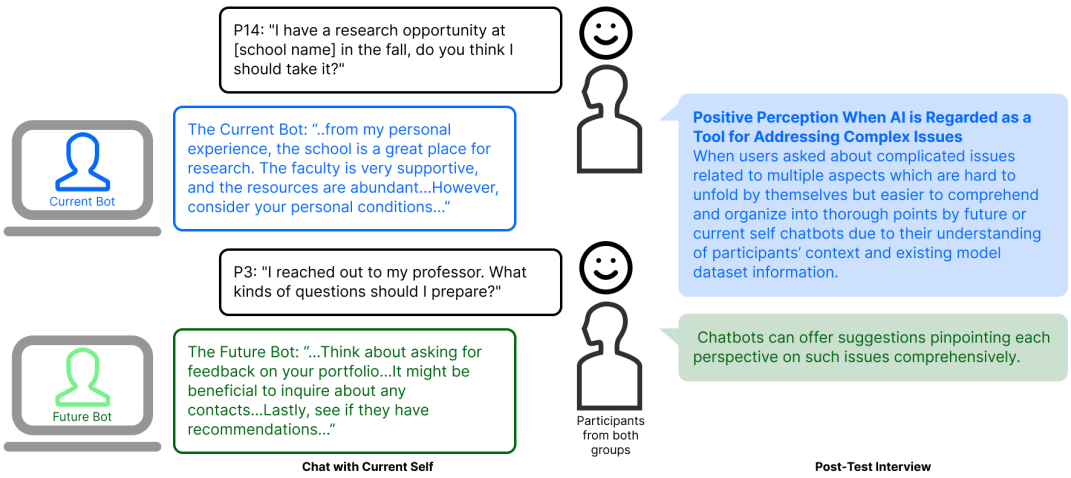

Fig. 5. Participants' conversations with both future and current self bots to treat AI as a tool for solving complicated issues.

the AI's ability in fostering a positive and hopeful outlook, potentially motivating users with more optimistic mindsets in future planning and goal setting. However, some found the constant positivity lacked nuance and emotional realism. P11's comment that *"it seems incapable of negative emotions"* showcases the risk that chatbot-delivered self-reflection may reinforce echo chamber effects or oversimplify complex self-narratives. These mixed feelings towards positivity hindered the chatbot's effectiveness in supporting users' planning and self-reflection, indicating the importance of balancing encouragement with authenticity in future collaborative or organizational chatbot systems.

4.2.3 Self AI Chatbot as a Tool to Address Complex Issues. Participants found chatbot responses helpful for structuring ambiguous or complex decisions, such as social relationships and future planning, as shown in Figure 5. This was particularly evident among the Future Self group. For example, P3 cited concrete *"guidelines and career paths"* when they asked, *"I reached out to my professor. What kinds of questions should I prepare?"*, and P14, who chatted with the Current Self chatbot, mentioned, *"It helps organize my thoughts well, such as previously asked questions about research opportunities and long-distance relationships... it summarized my concerns in a few sentences and verbalized my fuzzy thoughts."* Users appreciated how the chatbot could synthesize disparate thoughts into coherent action plans, a function paralleling facilitative roles in collaborative work (e.g., group coaching, team retrospectives).

However, participants with extensive knowledge of AI mechanisms or frequent users of AI tools generally held critical perceptions of AI responses. For instance, P5 and P17, who use various AI tools daily for academic and everyday purposes, expressed skepticism, stating, *"I would not trust the future to depict the real future"*, and *"I think the answer is not trustworthy, especially for the far future"*. They noted that the chatbot's advice felt generic, overly reliant on its contextual information, or insufficiently grounded in their real-life scenarios, raising questions about the trustworthiness of AI-generated self-guidance. This skepticism stems from their understanding that current AI tools generate responses based on limited datasets and scraped websites, coupled with a lack of evident deductive reasoning within the AI's responses.

Fig. 6. Conversation between users and their future self bots with positive perception regarding alignments between AI visions and users' plan.

4.3 User Perception and Behaviors when Interacting with Future Self Chatbots

4.3.1 Diverse Perceptions of the Future Self Chatbot Based on User Expectations. Users' evaluation of the Future Self chatbot varied by the degree to which its responses matched their self-concept or future visions.

Perceived positively when future bots provide future paths that align with users. Participants with clear future visions reported increased confidence and a sense of validation when the chatbot's advice aligned with their own planning (e.g., P32: *"added confidence and surety about this perspective"*), as shown in Figure 6. This alignment *"added confidence and confidence about this perspective,"* enhancing individual readiness to participate in collaborative goal-setting or professional group work.

Perceived negatively when users themselves are not sure about their future paths. Participants with less-defined futures or whose plans deviated from chatbot suggestions perceived responses as unrealistic or mechanical. For example, P7, unsure about a future in architecture, felt disconnected when the chatbot showed insistence on a specific career path. P7 expressed, *"the conversation is a bit machine-like. In my mind, my future is still vague..."* This highlights that overly definitive or misaligned chatbots risk undermining the inclusive, flexible self-concept building that supports real-world collaborative adaptation.

Negative Perceptions and Misalignment with the Future Self Chatbot. However, several participants found the chatbot's systematic or overly formal style antithetical to their ways of thinking or communicating, resulting in detachment or alienation. Participants like P9, who asked, *"What specific atmosphere research do you do?"*, received broad and non-specific answers from the chatbot, leading to frustration due to the lack of meaningful advice. Some participants felt the future version of themselves did not match their current persona. P19, discussing thesis writing difficulties, noted, *"Its attitude towards life is much more optimistic than mine."* P32 found the AI's responses *"too neutral, lacking many considerations,"* and stated, *"I can't speak as eloquently as it does,"* indicating that when the chatbot's "knowledge" exceeded users' self-perception or ignored idiosyncratic experience led to reduced trust and lessened engagement.

4.3.2 Perceiving Future Self Chatbots as Mentor Figures Many users interpreted the Future Self chatbot as a mentor-like, senior version of themselves ("elder sister," "teacher," "senior"), often seeking advice or reflection beyond their own current perspective. Participants like P27 mentioned, *"She (the chatbot) feels like an elder sister, living a life very different from mine, I think it's interesting,"* and P36 noted, *"It talks like a teacher or a senior, considering issues carefully and comprehensively."* This finding suggests that chatbots have the potential not only for individual self-guidance but also

for serving mentoring/coaching roles that could be scaled to support onboarding, professional development, or peer mentoring within teams that blend individualized reflection with collaborative growth.

Participants accepted a broader range of chatbot responses as "possible" futures, sometimes attributing oddities to natural personal evolution over time, and interpreting systematic or organized advice as indicative of what their "future self" would know. These dynamics may help users build more adaptable self-narratives, a process relevant for collaborative planning and role negotiation in distributed work.

4.3.3 Open Attitudes to Future Self Images Through Chatbots. The Future Self chatbots can also help users envision future scenarios, providing effective advice and meaningful life guidance. This indicated the chatbot's ability to depict vivid future visions allowed participants to imagine their futures more concretely, facilitating better decision-making. Participants also exhibited a tolerant and open attitude towards the Future Self chatbot's responses, even when they were less human-like or of lower quality. They often attributed discrepancies to personal growth and changes over time. For instance, P20 mentioned, *"I think the bot is much more outgoing, and she has a wide social network."* but added, *"Perhaps after I start working and interacting with different people, I might become more outgoing as she is."* Similarly, when faced with overly systematic answers, participants believed this reflected their future selves' increased knowledge and logical thinking skills. For example, P15 stated, *"If I were asked the same question, I would mostly respond similarly. I might have a very detailed answer in my mind, but I would not express the details."* This acceptance and willingness to consider alternative perspectives suggest that interacting with a Future Self chatbot can positively influence users' attitudes. Users may become more open to self-reflection and proactive in their planning processes.

4.4 User Perception and Behaviors when Interacting with Current Self Chatbots

4.4.1 Assistance in Self-Reflection for Current Challenges. When discussing real-life problems, participants found that the Current Self chatbot provided a third-person perspective that helped them reflect on themselves and develop self-improvement strategies. Users valued its objective and considerate third-person views because the chatbot's impartial advice was unlike advice from family or mentors, which can be biased by their experiences. Participants like P16 noted, *"Teachers and mentors in real life may not know my feelings... but the AI seems to consider my emotions."* The AI helped users reflect on their behavior; for example, P25 mentioned, *"...it proactively reminds me to balance gaming and studying, ensuring I don't lose my way."* This suggests that the chatbot acted as a self-reflector, enhancing users' planning and future vision by promoting self-awareness.

4.4.2 Negative perception due to misalignment of self-perception. Some participants experienced limitations when the chatbot's responses did not align with their own thinking or communication style. They tended to perceive the chatbot as another self in a *"parallel world"* and viewed the structured, comprehensive responses negatively when they did not reflect their logic. For instance, when discussing topics like *"What's the future of HCI research?"* or past difficulties, participants found the responses too systematic and not representative of their thought processes. P4 noted, *"The conversation felt too well organized, like talking to GPT, too systematic, not like myself."* P33 reported, While positivity in the human-AI conversations brings encouragement and motivation for deeper engagements, the negative perception emphasizes that balancing the degrees of positivity with participants' personality and thinking is important.

5 Discussion

5.1 Self-Chatbot Conversations as Identity Work for Future Career Crafting

Addressing RQ 1, this study investigates the interrelationship between people's behavior and perception during human-AI conversations. These interactions can be viewed as micro-episodes of "identity rehearsal" where participants can rehearse and co-construct possible professional identities and future trajectories, consistent with contemporary notions of identity [80, 129], fostering participants to reflect on their own identities and experiences [86, 88]. Although our study focused on individualized (1:1) self-reflection, the very mechanism of chatbot-mediated "identity rehearsal" parallels foundational practices in collaborative work, such as group mentoring, peer-coaching, or team-based goal-setting. Self Chatbots can serve as boundary objects, bridging personal introspection and collective professional development—by providing a portable, articulable narrative for group reflection or coordination [58, 82, 86, 88, 125].

5.1.1 Self-Disclosure as a Foundation for Identity Reflection. High self-disclosure with the chatbot allowed participants to surface latent or unspoken goals and values, a necessary precondition for constructing a future-professional narrative [84]. Both Current and Future Self Chatbot interactions fostered discussion not only of present challenges, but also about one's envisioned trajectory, echoing prior work showing that personalized, context-rich dialogue systems lower barriers to honest self-exploration [52, 97, 107, 125]. Compared to traditional, one-way interventions [98], these adaptive, conversational experiences allowed for more immediate and iterative self-evaluation, increasing participants' readiness to bring reflexive, well-articulated identities into collaborative or professional discussions.

Additionally, interface-level personalization, such as the chatbot displaying the user's own name, strengthened engagement and the perception of the chatbot as a "relatable counterpart" rather than just a generic AI. Such design choices facilitate emotional connection and trust [72, 136], while features like avatar customization or name changes further support anthropomorphism and encourage rich self-disclosure [11, 122]. When extrapolated to group settings, these mechanisms hold promise for supporting mutual understanding and the sharing of individually rehearsed futures within teams or peer groups.

5.1.2 AI Roles as Tool and Reflective Partner. Participants' experiences with self-chatbots reveal differentiated roles for AI, shaped by the temporal framing of the "self." Interactions with the Current Self chatbot were often pragmatic, echoing prior descriptions of computers as social actors[65] or as "mirrors" reflecting and supporting day-to-day planning [18, 20, 90]. This supports earlier work showing that user openness and trust are strengthened by both guided feedback and the ability to see oneself modeled by the system [20, 72], and extends by showing how temporal proximity to one's current self further boosts willingness to engage in self-directed planning and problem-solving.

The Future Self chatbot evoked a more distanced, sometimes aspirational relationship, consistent with future self-continuity theory [30]. When the chatbot's future scenarios felt unfamiliar or idealized, participants reported both feelings of disconnect [78] and an acceptance of potential "future maturity" as a legitimate narrative divergence [29]. This tension between contextual alignment (feeling the chatbot "acts as" them) and future-oriented divergence (acknowledging the chatbot's insights as beyond their current state) led participants to reframe the Future Self chatbot as a mentor-like figure that "knows" them well while having sufficient experiences. They also perceived the structured, informed nature of the chatbot's responses as a sign of potential future wisdom, reinforcing the notion that trust and perceived competence can increase reliance on AI [21]. It shows that while previous studies have acknowledged the importance of actionable guidance [18, 20], our research situates these findings in a scenario where the chatbot

embodies users' future selves, to help decision-making [109], potentially following Future Self Chatbots as a mentor leading users for the future-oriented planning.

These roles as a mirror (Current Self groups) that reflects extant identity commitments and a mentor (Future Self group) that guides prospective identity, aligning with Higgins' possible-selves theory [51] that discrepancies between selves can motivate users to adapt their actual self (current users) and their ideal self (Self Chatbot version), stimulating self-thinking and human-AI co-reflection in peer-learning groups [31, 76, 123].

5.2 Effects from Conversing with the Future Self Chatbots

Addressing RQ2, our quantitative and qualitative findings show how to leverage Future Self chatbots for identity rehearsal and future career planning. By examining participants' career maturity, self-efficacy, future self-continuity, and behavioral choices, we observed that interactive engagement with a Future Self chatbot supported participants in articulating, rehearsing, and refining their envisioned professional identities and long-term goals.

5.2.1 Facilitating Career Planning and Future-Oriented Action. Our study suggests that interacting with Future Self chatbots enabled participants to move from self-reflection into identity-consistent action plans, supporting nascent career goal formation. Aligning with prior works that chatbots can promote wellbeing, stimulate self-reflection, and facilitate decision-making, including around career issues [54, 63, 82], the design of Self Chatbot in this project was distinctive in its use of first-person embodiment: it spoke not just to the user. Such an approach may enable a deeper rehearsal of professional identity [46, 135], making it easier to project oneself into possible futures and to experiment with goals and values without external judgment.

Our results emphasize the dual importance of empathetic support and neutral, non-hierarchical self-advice: both help users manage uncertainty and lower anxiety while engaging in high-stakes decisions about work and life. Notably, participants in the Future Self condition trended toward allocating more financial resources to career and long-term growth, echoing prior findings that visualization or dialogue with one's future self can increase future-oriented, value-consistent choices [50]. However, participants' time allocation was less malleable, pointing to the habitual or structural factors that constrain behavior change [33].

Our findings suggest that even brief, individualized reflection with a digital future self can lay the groundwork for more effective collective activities, such as group retrospectives, onboarding, or value-alignment exercises. By clarifying goals and latent values, Self chatbots can help individuals enter collaborative settings with greater self-clarity, enhancing group alignment, negotiation, and shared professional development.

5.2.2 Future Self Continuity. While qualitative feedback indicated shifts in professional self-concept and expanded identity narratives, quantitative measures of future self-continuity yielded no significant between-group differences. Prior work identifies similarity, vividness, and positivity as distinct components of future self-continuity, which may have divergent impacts on motivation and decision-making [48]. In our study, chatbots were particularly effective at generating positive, optimistic scenarios, but such positivity did not always translate to a psychologically vivid or personally resonant sense of self, which may be necessary for behavior change or identity consolidation. Consequently, participants rated the chatbots differently on various dimensions, which may have contributed to the nonsignificant future self-continuity. We hypothesize that the three dimensions of future self continuity may have varying degrees of impact on career planning. Our results can provide a potential research idea for future work to further explore whether these aspects have different degrees of influence on self-continuity and individuals' decision-making and behavior, turning private identity rehearsal into a resource for shared reflection and coordinated action.

5.3 Risks and Concerns for Self-Chatbot Design and Deployment.

Our findings also show several potential negative impacts and design risks. First, highly personalized chatbots can inadvertently reinforce self-confirming narratives or echo chambers, limiting critical self-examination and reducing opportunities to confront alternative or challenging perspectives [125]. This dynamic, while initially comfortable, may ultimately constrain identity growth or adaptability in collaborative, multi-perspective environments.

Second, although participants valued systematic and informed responses, especially when facing ambiguous choices, lack of authentic personalization or mismatches with the user's personality led to perceived identity dissonance or disappointment [37, 136]. Overly standardized or generic outputs risk undermining user trust and engagement, both individually and in any future group integration.

We hypothesize that interacting with a "future self" chatbot may sometimes backfire, especially with an idealized version. For users who see chatbots as their improved selves and struggle to see "themselves" living up to the projected future self, the contrast between their current self and the aspirational vision may result in discouragement or a sense of inadequacy, rather than positive motivation. This gap could accelerate feelings of hopelessness, pressure, or resignation, causing participants to disengage or give up trying to improve, particularly if they perceive the future self as unattainable or unrealistic. Moreover, repeated exposure to overly optimistic or generic advice may erode trust, make users feel misunderstood, or, paradoxically, entrench current behaviors by fostering skepticism toward change. Chin et al. [22] also caution that heavy, long-term users of social chatbots may present more depressive language despite higher politeness, aligning with our concern that a FSelf cahtbot, if used daily, needs mood-sensitive safeguards. In organizational or collaborative settings, this could not only dampen individual motivation but also disrupt group cohesion or shared planning if team members feel alienated by conflicting or unrealistic future projections.

For participants with less defined goals, the chatbot's certainty or optimism sometimes heightened anxiety, self-doubt, or highlighted gaps in self-efficacy. Uncritical, speculative, or unrealistic projections may mislead, confuse, or demotivate users, especially if the distinction between speculation and actionable, grounded advice is not sufficiently clear. Instead of becoming a tool for growth, the chatbot may inadvertently reinforce avoidance or foster aversion to long-term planning.

Lastly, participants also raised concerns about data handling and ethical issues, echoing calls for transparency in sensitive or expert domains [88, 116]. Some participants, particularly those with greater AI expertise, expressed doubts about the chatbot's reliability and the validity of its predictions or advice, reflecting wider ethical debates on AI in sensitive or professional domains [14, 41, 54, 85, 88, 89]. These participants often actively probed the chatbot's limitations, analyzing response sources or "breaking" the system. Nonetheless, even expert users recognized the value of tailored scenario-building for career reflection and long-term planning [35]. Aligning with Liang et al. [72] and Morrison et al. [88], we show that while emotional self-disclosure and structured reasoning enhance trust, merging individual self-insight with group or professional development must ensure transparent, supervised, and ethical AI-mediated reflection [59, 92, 127, 134].

5.4 Implications

This study offers suggestive implications for designing self-chatbots that support identity reflection, career planning, and decision-making, while highlighting key opportunities and challenges at the intersection of individual and collaborative contexts.

5.4.1 Leveraging Empathy and Context. Our findings reinforce that chatbots leveraging empathetic tone and user-specific context can foster psychological safety and openness, encouraging meaningful disclosure about aspirations and concerns [26, 27, 72, 82, 136]. However, our findings also point to possible risks. In some cases, enhanced personalization and constant optimism may amplify both positive and negative self-perceptions, contributing to the formation of digital "echo chambers" of self-reflection. Aligning with the discussion on selective disclosure, Self Chatbot can elicit matching levels of self-disclosure from users, locking both parties into the same emotional depth [67, 72], therefore inadvertently encouraging users to repeat established self-narratives [125], at the expense of honest self-critique or growth. Designers and researchers need to consider how AI-mediated self-reflection could both support and constrain identity development, and whether chatbots should occasionally challenge users or foster exposure to alternative perspectives.

5.4.2 Bridging Individual Reflection and Group Collaboration. Traditionally, self-reflection is seen as an individual activity, but in many collaborative contexts, such as project teams, mentoring relationships, and organizational onboarding, the articulation of one's trajectory, values, and future-facing identity is critically social. Our work shows how self-chatbots can act as "boundary objects" that travel across these contexts [58, 82, 86, 88, 125], therefore bridging the gap between individual insight and collective understanding. And our study extend [5]'s finding that a well-timed, public-channel bot can accelerate collective task focus, hinting that modality—not just content—shapes motivational outcomes. Therefore, for example, engaging with a self-chatbot prior to a group session may help individuals clarify their positions, enabling richer, more authentic, and less performative group dialogue. Yet, if all group members reinforce only their own assumptions, the risk of groupthink or narrowed collective perspective remains.

5.4.3 Incorporating Future Perspectives into AI Tools for Career and Academic Planning. Embedding future-oriented identity rehearsal into chatbots enriches career guidance and academic counseling, helping users to practice, revise, and embody possible professional selves. Self chatbots that allow users to "speak as" their future selves can thus scaffold both individual insight and collaborative meaning-making, supporting organizational onboarding, distributed teamwork, and professional development. Our study shows that dynamic and performative models of identity construction [80, 129], as well as classic theories of social and organizational identity. Therefore, identity is not only internal and individually constructed, but also performed, shared, and negotiated in technological and social contexts. Our chatbot approach expands the palette of identity materials available for personal and collaborative use. Participants' interactions represent not just isolated self-discovery, but also rehearsals for future collaborative roles, negotiations, and social performances—processes deeply relevant for organizational onboarding, distributed teamwork, and professional development. Our results suggest that self-chatbot technologies can scaffold evolving, context-dependent identities in ways that are transparent, revisable, and portable.

5.4.4 Design Recommendations and Considerations Future studies should focus on obtaining sufficient personal responses from users and improving the AI's deductive capabilities to create a more accurate and comprehensive vision of one's current or future self. To maximize self-chatbots' positive impacts while mitigating risks, we recommend several design strategies:

- Incorporate mechanisms for reflecting on and balancing both strengths and weaknesses, possibly by surfacing alternative viewpoints or prompting for ambiguity and change.
- Consider features that allow users to share selected aspects of their chatbot insights with peers or teams, thus enabling transition from solo introspection to collaborative action, while keeping privacy boundaries clear.

- Remain attentive to the ethical risks of over-individualization and echo chambers by periodically reminding users of the provisional nature of chatbot feedback and designing for dialogic, not dogmatic engagement.

In sum, self-chatbots represent a promising bridge between individual reflection and collective identity work. Realizing their potential will require design approaches that balance empathy, adaptivity, and critical diversity, ensuring that digital rehearsals of the self inform and enrich, rather than constrain, collaborative futures.

5.5 Limitations

5.5.1 Sample Size and Study Design Our study is exploratory, conducted with a relatively small participant pool using a single-session design. This limits the generalizability of our findings and precludes strong causal claims about the impact of self-chatbots on long-term behavioral change. While similar qualitative samples are seen in related exploratory work [29, 86, 136], future research should employ larger, longitudinal, and more diverse samples to robustly assess enduring effects on career planning, self-continuity, and collaborative outcomes [49, 98].

5.5.2 Generality and Reproducibility While our personalized, survey-driven chatbot method allows for reproducibility, it also introduces challenges in generalizability. However, it still has limitations on generalizability: because both prompts and conversation content were tailored via user-provided data, it is difficult to determine how broadly our findings apply or what aspects of the chatbot experience were most effective. Additionally, we did not systematically compare prompt strategies, error rates, or conversation quality across diverse user populations. Our process also lacked iterative evaluation via A/B testing or collaborative design [79, 110]. Future work would benefit from a comprehensive multi-method evaluation and rigorous cross-population studies to establish scalable personalization practices.

5.5.3 System and Contextual Constraints Several methodological restrictions may have influenced our results. Our system lacked persisting or dynamic chat histories, modeled only limited dimensions of user personality and context from the pre-test survey data, and may have produced advice misaligned with participants' lived realities. Creating chatbots that accurately reflect an individual's full context would require deeper, longitudinal, and possibly group-level data, which raises both technical and ethical challenges. Extending designs to draw on richer social, organizational, and cultural datasets could enable chatbots to support more collective decision-making and surface broader impacts [38].

5.5.4 Interface and Embodiment Issues Our user interface may have shaped participant perception, as some recognized the chatbots as AI due to visual resemblance to common web apps. Prior research suggests that more human-like, visually rich, or multi-sensory agent representations (including age-progression, avatars, or voice input) could improve believability, engagement, and tolerance for errors [31, 50, 66, 115]. However, balancing realism with privacy and designing for both solo and collaborative contexts requires further exploration. User-centered design, participatory evaluations, and iterative prototyping will be vital, particularly for deployment in sensitive or group-facing settings [43, 101].

5.5.5 Focus on Individual Reflection over Group Collaboration Our study centered on individual self-reflection and identity work, rather than directly investigating synchronous group collaboration or team-level planning. While we argue that self-articulation via chatbots could benefit group-level processes, we did not empirically study how self-chatbot primed insights transfer to collective negotiation, coordination, or identity formation. Practical group, classroom, or workplace settings could yield different user behaviors and social effects, especially if echo chambers or "identity amplification" are at play. Echo chamber risks, as highlighted in recent literature and reviewer feedback,

may be magnified in group contexts if AI-mirrored self-narratives are simply imported into team discussions without opportunities for challenge, diversity, or critical reflection. Because our focus was on self-chatbots, we did not capture the full complexity of identity formation as a socially situated, evolving, and negotiated process. The implications for group identity, professional onboarding, or distributed team trust must be tested explicitly in future collaborative and organizational studies.

6 Conclusion

This study demonstrates how personalized Self chatbots, constructed from users' survey data, can serve as interactive tools for practicing and reflecting on future work identities. We find that engaging with a Future Self chatbot, compared to a Current Self chatbot, supports greater career maturity and fosters more future-oriented planning and resource allocation. Empathetic design, contextual relevance, and a sense of anonymity were key to building trust and encouraging users to articulate aspirations, experiment with possible futures, and navigate complex career choices. These dialogic interactions provided not only encouragement but also structured mentorship, helping participants rehearse professional selves in a safe and dynamic environment. Our findings suggest that such self-chatbots can function as valuable boundary objects, bridging individual reflection with collaborative identity processes—offering practical implications for team onboarding, group planning, and organizational development. Looking ahead, realizing the full potential of self-chatbots will require careful design to balance empathy, critical diversity, and ethical considerations, ensuring that digital rehearsals empower users both individually and collectively.

References

[1] 2023. NextChat. https://github.com/ChatGPTNextWeb/ChatGPT-Next-Web?tab=readme-ov-file

[2] Robert Mark Adelman, Sarah D. Herrmann, Jessica E. Bodford, Joseph E. Barbour, Oliver Graudejus, Morris A. Okun, and Virginia S. Y. Kwan. 2017. Feeling Closer to the Future Self and Doing Better: Temporal Psychological Mechanisms Underlying Academic Performance. *Journal of Personality* 85, 3 (2017), 398–408. https://doi.org/10.1111/jopy.12248 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/jopy.12248.

[3] Abhishek Aggarwal, Cheuk Chi Tam, Dezhi Wu, Xiaoming Li, and Shan Qiao. 2023. Artificial Intelligence–Based Chatbots for Promoting Health Behavioral Changes: Systematic Review. *Journal of Medical Internet Research* 25, 1 (Feb. 2023), e40789. https://doi.org/10.2196/40789 Company: Journal of Medical Internet Research Distributor: Journal of Medical Internet Research Institution: Journal of Medical Internet Research Label: Journal of Medical Internet Research Publisher: JMIR Publications Inc., Toronto, Canada.

[4] Safinah Ali, Prerna Ravi, Randi Williams, Daniella DiPaola, and Cynthia Breazeal. 2024. Constructing Dreams Using Generative AI. *Proceedings of the AAAI Conference on Artificial Intelligence* 38, 21 (March 2024), 23268–23275. https://doi.org/10.1609/aaai.v38i21.30374 Number: 21.

[5] Clélie Amiot. [n. d.]. Chatbots in Collaborative Settings and their Impact on Virtual Teamwork. 9, 2 ([n. d.]).

[6] Theo Araujo. 2018. Living up to the chatbot hype: The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions. *Computers in Human Behavior* 85 (Aug. 2018), 183–189. https://doi.org/10.1016/j.chb.2018.03.051

[7] Jae-eul Bae, Youn-kyung Lim, Jin-bae Bang, and Myung-suk Kim. 2014. Ripening room: designing social media for self-reflection in self-expression. In *Proceedings of the 2014 conference on Designing interactive systems (DIS '14)*. Association for Computing Machinery, New York, NY, USA, 103–112. https://doi.org/10.1145/2598510.2598567

[8] Luke Balcombe. 2023. AI Chatbots in Digital Mental Health. *Informatics* 10, 4 (Oct. 2023), 82. https://doi.org/10.3390/informatics10040082

[9] Nancy E. Betz. 2007. Career Self-Efficacy: Exemplary Recent Research and Emerging Directions. *Journal of Career Assessment* (Nov. 2007). https://doi.org/10.1177/1069072707305759 Publisher: Sage PublicationsSage CA: Los Angeles, CA.

[10] A. Bhharathee, Sandeep Vemuri, B. Bhavana, and K. Nishitha. 2023. AI-Powered Student Assistance Chatbot. In *2023 International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT)*. 487–492. https://doi.org/10.1109/IDCIoT56793.2023.10053439

[11] Nanyi Bi and Janet Yi-Ching Huang. 2023. I create, therefore I agree: Exploring the effect of AI anthropomorphism on human decision-making. In *Companion Publication of the 2023 Conference on Computer Supported Cooperative Work and Social Computing (CSCW '23 Companion)*. Association for Computing Machinery, New York, NY, USA, 241–244. https://doi.org/10.1145/3584931.3606990

[12] Eve-Marie C. Blouin-Hudon and Timothy A. Pychyl. 2017. A Mental Imagery Intervention to Increase Future Self-Continuity and Reduce Procrastination. *Applied Psychology* 66, 2 (April 2017), 326–352. https://doi.org/10.1111/apps.12088 Publisher: John Wiley & Sons, Ltd.

[13] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3, 2 (Jan. 2006), 77–101. https://doi.org/10.1191/1478088706qp063oa Publisher: Routledge _eprint: https://www.tandfonline.com/doi/pdf/10.1191/1478088706qp063oa.

[14] Marina Budic. 2022. AI and Us: Ethical Concerns, Public Knowledge and Public Attitudes on Artificial Intelligence. In *Proceedings of the 2022 AAAI/ACM Conference on AI, Ethics, and Society*. ACM, Oxford United Kingdom, 892–892. https://doi.org/10.1145/3514094.3539518

[15] Roland Bénabou and Marek Pycia. 2002. Dynamic inconsistency and self-control: a planner–doer interpretation. *Economics Letters* 77, 3 (Nov. 2002), 419–424. https://doi.org/10.1016/S0165-1765(02)00158-1

[16] Sofie Krogh Bønlykke, Kamma Amalie Lind Madsen, and Tom Jenkins. 2024. Taking the bizarre seriously: dreams as a material for interaction design. In *Designing Interactive Systems Conference*. ACM, IT University of Copenhagen Denmark, 699–713. https://doi.org/10.1145/3643834.3661562

[17] ChatGPT C-LARA-Instance, Belinda Chiera, Cathy Chua, Chadi Raheb, Manny Rayner, Annika Simonsen, Zhengkang Xiang, and Rina Zviel-Girshin. 2023. Using C-LARA to evaluate GPT-4's multilingual processing. *Proceedings of The 21st Annual Workshop of the Australasian Language Technology Association* (2023).

[18] Maud Chassignol, Aleksandr Khoroshavin, Alexandra Klimova, and Anna Bilyatdinova. 2018. Artificial Intelligence trends in education: a narrative overview. *Procedia Computer Science* 136 (Jan. 2018), 16–24. https://doi.org/10.1016/j.procs.2018.08.233

[19] Valerie Chen, Q. Vera Liao, Jennifer Wortman Vaughan, and Gagan Bansal. 2023. Understanding the Role of Human Intuition on Reliance in Human-AI Decision-Making with Explanations. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW2 (Sept. 2023), 1–32. https://doi.org/10.1145/3610219

[20] Zhifa Chen, Yichen Lu, Mika P. Nieminen, and Andrés Lucero. 2020. Creating a Chatbot for and with Migrants: Chatbot Personality Drives Co-Design Activities. In *Proceedings of the 2020 ACM Designing Interactive Systems Conference*. ACM, Eindhoven Netherlands, 219–230. https://doi.org/10.1145/3357236.3395495

[21] Xusen Cheng, Ying Bao, Alex Zarifis, Wankun Gong, and Jian Mou. 2022. Exploring consumers' response to text-based chatbots in e-commerce: the moderating role of task complexity and chatbot disclosure. *Internet Research* 32, 2 (March 2022), 496–517. https://doi.org/10.1108/INTR-08-2020-0460

[22] Hyojin Chin, Assem Zhunis, and Meeyoung Cha. 2024. Behaviors and Perceptions of Human-Chatbot Interactions Based on Top Active Users of a Commercial Social Chatbot. *Proc. ACM Hum.-Comput. Interact.* 8, CSCW2 (2024), 483:1–483:28. https://doi.org/10.1145/3687022

[23] Avanti Chinmulgund, Ritesh Khatwani, Poornima Tapas, Pritesh Shah, and Ravi Sekhar. 2023. Anthropomorphism of AI based chatbots by users during communication. In *2023 3rd International Conference on Intelligent Technologies (CONIT)*. IEEE, Hubli, India, 1–6. https://doi.org/10.1109/CONIT59222.2023.10205689

[24] Yuta Chishima and Anne E. Wilson. 2021. Conversation with a future self: A letter-exchange exercise enhances student self-continuity, career planning, and academic thinking. *Self and Identity* 20, 5 (July 2021), 646–671. https://doi.org/10.1080/15298868.2020.1754283 21 citations (Crossref) [2024-01-16] Number: 5 Publisher: Routledge _eprint: https://doi.org/10.1080/15298868.2020.1754283.

[25] Bo Young Choi, Heerak Park, Eunjoo Yang, Seul Ki Lee, Yedana Lee, and Sang Min Lee. 2012. Understanding Career Decision Self-Efficacy: A Meta-Analytic Approach. *Journal of Career Development* 39, 5 (Oct. 2012), 443–460. https://doi.org/10.1177/0894845311398042 Publisher: SAGE Publications ERIC Number: EJ977630.

[26] Emmelyn A. J. Croes and Marjolijn L. Antheunis. 2021. 36 Questions to Loving a Chatbot: Are People Willing to Self-disclose to a Chatbot? In *Chatbot Research and Design*, Asbjørn Følstad, Theo Araujo, Symeon Papadopoulos, Effie L.-C. Law, Ewa Luger, Morten Goodwin, and Petter Bae Brandtzaeg (Eds.). Vol. 12604. Springer International Publishing, Cham, 81–95. https://doi.org/10.1007/978-3-030-68288-0_6 Series Title: Lecture Notes in Computer Science.

[27] Yichao Cui, Yu-Jen Lee, Jack Jamieson, Naomi Yamashita, and Yi-Chieh Lee. 2024. Exploring Effects of Chatbot's Interpretation and Self-disclosure on Mental Illness Stigma. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–33. https://doi.org/10.1145/3637329

[28] Kevin Dunnell, Gauri Agarwal, Pat Pataranutaporn, Andrew Lippman, and Pattie Maes. 2024. AI-Generated Media for Exploring Alternate Realities. In *Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI EA '24)*. Association for Computing Machinery, New York, NY, USA, 1–8. https://doi.org/10.1145/3613905.3650861

[29] Hal Ersner-Hershfield, M. Tess Garton, Kacey Ballard, Gregory R. Samanez-Larkin, and Brian Knutson. 2009. Don't stop thinking about tomorrow: Individual differences in future self-continuity account for saving. *Judgment and Decision Making* 4, 4 (June 2009), 280–286. https://doi.org/10.1017/S1930297500003855 227 citations (Crossref) [2024-01-16] Number: 4.

[30] Hal Ersner-Hershfield, G. Elliott Wimmer, and Brian Knutson. 2009. Saving for the future self: Neural measures of future self-continuity predict temporal discounting. *Social Cognitive and Affective Neuroscience* 4, 1 (March 2009), 85–92. https://doi.org/10.1093/scan/nsn042 187 citations (Crossref) [2024-01-16] Number: 1.

[31] Cathy Mengying Fang, Phoebe Chua, Samantha W. T. Chan, Joanne Leong, Andria Bao, and Pattie Maes. 2025. Leveraging AI-Generated Emotional Self-Voice to Nudge People towards their Ideal Selves. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*. ACM, Yokohama Japan, 1–20. https://doi.org/10.1145/3706598.3713359

[32] Daniel Fernau, Stefan Hillmann, Nils Feldhus, Tim Polzehl, and Sebastian Möller. 2022. Towards Personality-Aware Chatbots. In *Proceedings of the 23rd Annual Meeting of the Special Interest Group on Discourse and Dialogue*. Association for Computational Linguistics, Edinburgh, UK, 135–145. https://doi.org/10.18653/v1/2022.sigdial-1.15

[33] Alain Fernex, Laurent Lima, and Erica de Vries. 2015. Exploring time allocation for academic activities by university students in France. *Higher Education* 69, 3 (March 2015), 399–420. https://doi.org/10.1007/s10734-014-9782-5

[34] Kathleen Kara Fitzpatrick, Alison Darcy, and Molly Vierhile. 2017. Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): a randomized controlled trial. *JMIR mental health* 4, 2 (2017), e7785. https://mental.jmir.org/2017/2/e19/Roboter Publisher: JMIR Publications Inc., Toronto, Canada.

[35] Christopher Flathmann, Wen Duan, Nathan J. Mcneese, Allyson Hauptman, and Rui Zhang. 2024. Empirically Understanding the Potential Impacts and Process of Social Influence in Human-AI Teams. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–32. https://doi.org/10.1145/3637326

[36] Darryl K. Forsyth and Christopher D. B. Burt. 2008. Allocating time to future tasks: The effect of task segmentation on planning fallacy bias. *Memory & Cognition* 36, 4 (June 2008), 791–798. https://doi.org/10.3758/MC.36.4.791

[37] Jelle Fostier, Elena Leemans, Lien Meeussen, Alix Wulleman, Shauni Van Doren, David De Coninck, and Jaan Toelen. 2024. Dialogues with AI: Comparing ChatGPT, Bard, and Human Participants' Responses in In-Depth Interviews on Adolescent Health Care. *Future* 2, 1 (March 2024), 30–45. https://doi.org/10.3390/future2010003 Number: 1 Publisher: Multidisciplinary Digital Publishing Institute.

[38] Katleen Gabriels. 2018. Addressing the Soft Impacts of Weak AI-Technologies. In *The 2018 Conference on Artificial Life*. MIT Press, Tokyo, Japan, 504–509. https://doi.org/10.1162/isal_a_00093

[39] Jeff Galak, Deborah Small, and Andrew T. Stephen. 2011. Microfinance Decision Making: A Field Study of Prosocial Lending. *Journal of Marketing Research* 48, SPL (Feb. 2011), S130–S137. https://doi.org/10.1509/jmkr.48.SPL.S130 Publisher: SAGE Publications Inc.

[40] Simon Garrod and Martin J. Pickering. 2004. Why is conversation so easy? *Trends in Cognitive Sciences* 8, 1 (Jan. 2004), 8–11. https://doi.org/10.1016/j.tics.2003.10.016

[41] Ganesh Gautam, Himanshu Arora, Jayendra Choudhary, and Aryan Raj. 2022. Data Privacy and Ethical Concerns in AI and Computer Science. *Industrial Engineering Journal* 51, 08 (2022), 25–31. https://doi.org/10.36893/IEJ.2022.V51I8.025-031

[42] Paul Gellert, Jochen P. Ziegelmann, Sonia Lippke, and Ralf Schwarzer. 2012. Future time perspective and health behaviors: Temporal framing of self-regulatory processes in physical exercise and dietary behaviors. *Annals of Behavioral Medicine* 43, 2 (2012), 208–218. https://doi.org/10.1007/s12160-011-9312-y Place: Germany Publisher: Springer.

[43] Narayan Ghiotti, David Clulow, Serene Cheon, Kevin Cui, and Hyo Kang. 2023. Prototyping Kodi: Defining Design Requirements to Develop a Virtual Chat-bot for Autistic Children and Their Caregivers. In *Computer Supported Cooperative Work and Social Computing*. ACM, Minneapolis MN USA, 126–131. https://doi.org/10.1145/3584931.3606958

[44] Eun Go and S. Shyam Sundar. 2019. Humanizing chatbots: The effects of visual, identity and conversational cues on humanness perceptions. *Computers in Human Behavior* 97 (Aug. 2019), 304–316. https://doi.org/10.1016/j.chb.2019.01.020

[45] Lewis R. Goldberg. 1992. The development of markers for the Big-Five factor structure. *Psychological Assessment* 4, 1 (1992), 26–42. https://doi.org/10.1037/1040-3590.4.1.26 Place: US Publisher: American Psychological Association.

[46] Wieke Noa Harmsen, Jelte Van Waterschoot, Iris Hendrickx, and Mariët Theune. 2023. Eliciting User Self-disclosure using Reciprocity in Human-Voicebot Conversations. In *Proceedings of the 5th International Conference on Conversational User Interfaces*. ACM, Eindhoven Netherlands, 1–6. https://doi.org/10.1145/3571884.3604301

[47] Yuhao He, Li Yang, Chunlian Qian, Tong Li, Zhengyuan Su, Qiang Zhang, and Xiangqing Hou. 2023. Conversational Agent Interventions for Mental Health Problems: Systematic Review and Meta-analysis of Randomized Controlled Trials. *Journal of Medical Internet Research* 25, 1 (April 2023), e43862. https://doi.org/10.2196/43862 Company: Journal of Medical Internet Research Distributor: Journal of Medical Internet Research Institution: Journal of Medical Internet Research Label: Journal of Medical Internet Research Publisher: JMIR Publications Inc., Toronto, Canada.

[48] Hal E. Hershfield. 2011. Future self-continuity: how conceptions of the future self transform intertemporal choice. *Annals of the New York Academy of Sciences* 1235, 1 (2011), 30–43. https://doi.org/10.1111/j.1749-6632.2011.06201.x 166 citations (Crossref) [2024-01-16] Number: 1 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1749-6632.2011.06201.x.

[49] Hal E. Hershfield, Taya R. Cohen, and Leigh Thompson. 2012. Short horizons and tempting situations: Lack of continuity to our future selves leads to unethical decision making and behavior. *Organizational Behavior and Human Decision Processes* 117, 2 (March 2012), 298–310. https://doi.org/10.1016/j.obhdp.2011.11.002 162 citations (Crossref) [2024-01-16] Number: 2.

[50] Hal E. Hershfield, Daniel G. Goldstein, William F. Sharpe, Jesse Fox, Leo Yeykelis, Laura L. Carstensen, and Jeremy N. Bailenson. 2011. Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self. *Journal of Marketing Research* 48, SPL (Feb. 2011), S23–S37. https://doi.org/10.1509/jmkr.48.SPL.S23 401 citations (Crossref) [2024-01-16] Number: SPL.

[51] E. Tory Higgins. 1989. Self-Discrepancy Theory: What Patterns of Self-Beliefs Cause People to Suffer? In *Advances in Experimental Social Psychology*. Vol. 22. Elsevier, 93–136. https://doi.org/10.1016/S0065-2601(08)60306-8

[52] Jennifer Hill, W. Randolph Ford, and Ingrid G. Farreras. 2015. Real conversations with artificial intelligence: A comparison between human–human online conversations and human–chatbot conversations. *Computers in Human Behavior* 49 (Aug. 2015), 245–250. https://doi.org/10.1016/j.chb.2015.02.026

[53] Cynthia Hoffner and Martha Buchanan. 2005. Young Adults' Wishful Identification With Television Characters: The Role of Perceived Similarity and Character Attributes. *Media Psychology* 7, 4 (Nov. 2005), 325–351. https://doi.org/10.1207/S1532785XMEP0704_2 Publisher: Routledge.

[54] Kenneth Holstein, Maria De-Arteaga, Lakshmi Tumati, and Yanghuidi Cheng. 2023. Toward Supporting Perceptual Complementarity in Human-AI Collaboration via Reflection on Unobservables. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW1 (April 2023), 1–20. https://doi.org/10.1145/3579628

[55] Jiaxiong Hu, Yun Huang, Xiaozhu Hu, and Yingqing Xu. 2023. The Acoustically Emotion-Aware Conversational Agent With Speech Emotion Recognition and Empathetic Responses. *IEEE Transactions on Affective Computing* 14, 1 (Jan. 2023), 17–30. https://doi.org/10.1109/TAFFC.2022.3205919

[56] Jun Li Jeung and Janet Yi-Ching Huang. 2023. Correct Me If I Am Wrong: Exploring How AI Outputs Affect User Perception and Trust. In *Computer Supported Cooperative Work and Social Computing*. ACM, Minneapolis MN USA, 323–327. https://doi.org/10.1145/3584931.3606997

[57] Hang Jiang, Xiajie Zhang, Xubo Cao, Cynthia Breazeal, Deb Roy, and Jad Kabbara. 2024. PersonaLLM: Investigating the Ability of Large Language Models to Express Personality Traits. https://doi.org/10.48550/arXiv.2305.02547 arXiv:2305.02547 [cs].

[58] Brennan Jones, Yan Xu, Qisheng Li, and Stefan Scherer. 2024. Designing a Proactive Context-Aware AI Chatbot for People's Long-Term Goals. In *Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI EA '24)*. Association for Computing Machinery, New York, NY, USA, 1–7. https://doi.org/10.1145/3613905.3650912

[59] Anjali Khurana, Parsa Alamzadeh, and Parmit K. Chilana. 2021. ChatrEx: Designing Explainable Chatbot Interfaces for Enhancing Usefulness, Transparency, and Trust. In *2021 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. IEEE, St Louis, MO, USA, 1–11. https://doi.org/10.1109/VL/HCC51201.2021.9576440

[60] Jeongyeon Kim, Sangho Suh, Lydia B Chilton, and Haijun Xia. 2023. Metaphorian: Leveraging Large Language Models to Support Extended Metaphor Creation for Science Writing. In *Proceedings of the 2023 ACM Designing Interactive Systems Conference*. ACM, Pittsburgh PA USA, 115–135. https://doi.org/10.1145/3563657.3595996

[61] Alexandra Kitson, Mirjana Prpa, and Bernhard E. Riecke. 2018. Immersive interactive technologies for positive change: a scoping review and design considerations. *Frontiers in psychology* 9 (2018), 1354. https://www.frontiersin.org/articles/10.3389/fpsyg.2018.01354/full Publisher: Frontiers Media SA.

[62] Nikola Kovacevic, Tobias Boschung, Christian Holz, Markus Gross, and Rafael Wampfler. 2024. Chatbots With Attitude: Enhancing Chatbot Interactions Through Dynamic Personality Infusion. In *ACM Conversational User Interfaces 2024*. ACM, Luxembourg Luxembourg, 1–16. https://doi.org/10.1145/3640794.3665543

[63] Harsh Kumar, Ruiwei Xiao, Benjamin Lawson, Ilya Musabirov, Jiakai Shi, Xinyuan Wang, Huayin Luo, Joseph Jay Williams, Anna N. Rafferty, John Stamper, and Michael Liut. 2024. Supporting Self-Reflection at Scale with Large Language Models: Insights from Randomized Field Experiments in Classrooms. In *Proceedings of the Eleventh ACM Conference on Learning @ Scale (L@S '24)*. Association for Computing Machinery, New York, NY, USA, 86–97. https://doi.org/10.1145/3657604.3662042

[64] Tomas Lawton, Francisco J Ibarrola, Dan Ventura, and Kazjon Grace. 2023. Drawing with Reframer: Emergence and Control in Co-Creative AI. In *Proceedings of the 28th International Conference on Intelligent User Interfaces*. ACM, Sydney NSW Australia, 264–277. https://doi.org/10.1145/3581641.3584095

[65] Jong-Eun Roselyn Lee and Clifford I. Nass. 2010. Trust in Computers: The Computers-Are-Social-Actors (CASA) Paradigm and Trustworthiness Perception in Human-Computer Communication. In *Trust and Technology in a Ubiquitous Modern Environment: Theoretical and Methodological Perspectives*. IGI Global, 1–15. https://doi.org/10.4018/978-1-61520-901-9.ch001

[66] Min Young Lee. 2023. Building Multimodal AI Chatbots. http://arxiv.org/abs/2305.03512 arXiv:2305.03512 [cs].

[67] Yi-Chieh Lee, Naomi Yamashita, and Yun Huang. 2020. Designing a Chatbot as a Mediator for Promoting Deep Self-Disclosure to a Real Mental Health Professional. *Proceedings of the ACM on Human-Computer Interaction* 4, CSCW1 (May 2020), 1–27. https://doi.org/10.1145/3392836

[68] Yi-Chieh Lee, Naomi Yamashita, and Yun Huang. 2021. Exploring the Effects of Incorporating Human Experts to Deliver Journaling Guidance through a Chatbot. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (April 2021), 1–27. https://doi.org/10.1145/3449196

[69] Robert W. Lent, Ijeoma Ezeofor, M. Ashley Morrison, Lee T. Penn, and Glenn W. Ireland. 2016. Applying the social cognitive model of career self-management to career exploration and decision-making. *Journal of Vocational Behavior* 93 (April 2016), 47–57. https://doi.org/10.1016/j.jvb.2015.12.007

[70] Jiahuan Li, Hao Zhou, Shujian Huang, Shanbo Cheng, and Jiajun Chen. 2024. Eliciting the Translation Ability of Large Language Models via Multilingual Finetuning with Translation Instructions. *Transactions of the Association for Computational Linguistics* 12 (April 2024), 576–592. https://doi.org/10.1162/tacl_a_00655

[71] Zhuoyang Li, Minhui Liang, Ray Lc, and Yuhan Luo. 2024. StayFocused: Examining the Effects of Reflective Prompts and Chatbot Support on Compulsive Smartphone Use. In *Proceedings of the CHI Conference on Human Factors in Computing Systems*. ACM, Honolulu HI USA, 1–19. https://doi.org/10.1145/3613904.3642479

[72] Kai-Hui Liang, Weiyan Shi, Yoo Jung Oh, Hao-Chuan Wang, Jingwen Zhang, and Zhou Yu. 2024. Dialoging Resonance in Human-Chatbot Conversation: How Users Perceive and Reciprocate Recommendation Chatbot's Self-Disclosure Strategy. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–28. https://doi.org/10.1145/3653691

[73] Hairong Ling, Shanjie Teng, Xuejun Liu, Jing Wu, and Xueying Gu. 2022. Future Work Self Salience and Future Time Perspective as Serial Mediators Between Proactive Personality and Career Adaptability. *Frontiers in Psychology* 13 (April 2022). https://doi.org/10.3389/fpsyg.2022.824198 Publisher: Frontiers.

[74] Fang Liu, Junyan Lv, Shenglan Cui, Zhilong Luan, Kui Wu, and Tongqing Zhou. 2024. Smart "Error"! Exploring Imperfect AI to Support Creative Ideation. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–28. https://doi.org/10.1145/3637398

[75] Priscilla Y. Lo. 2024. An Autoethnographic Reflection of Prompting a Custom GPT Based on Oneself. In *Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI EA '24)*. Association for Computing Machinery, New York, NY, USA, 1–9. https://doi.org/10.1145/3613905.3651096

[76] Zhuoran Lu, Dakuo Wang, and Ming Yin. 2024. Does More Advice Help? The Effects of Second Opinions in AI-Assisted Decision Making. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–31. https://doi.org/10.1145/3653708

[77] Alexandra Luccioni, Victor Schmidt, Vahe Vardanyan, and Yoshua Bengio. 2021. Using Artificial Intelligence to Visualize the Impacts of Climate Change. *IEEE Computer Graphics and Applications* 41, 1 (Jan. 2021), 8–14. https://doi.org/10.1109/MCG.2020.3025425 Conference Name: IEEE Computer Graphics and Applications.

[78] Saiyue Lyu and Zhicong Lu. 2023. Exploring Temporal and Multilingual Dynamics of Post-Disaster Social Media Discourse: A Case of Fukushima Daiichi Nuclear Accident. *Proc. ACM Hum.-Comput. Interact.* 7, CSCW1 (April 2023), 51:1–51:24. https://doi.org/10.1145/3579484

[79] Aman Madaan, Niket Tandon, Prakhar Gupta, Skyler Hallinan, Luyu Gao, Sarah Wiegreffe, Uri Alon, Nouha Dziri, Shrimai Prabhumoye, Yiming Yang, Shashank Gupta, Bodhisattwa Prasad Majumder, Katherine Hermann, Sean Welleck, Amir Yazdanbakhsh, and Peter Clark. 2023. Self-Refine: Iterative Refinement with Self-Feedback. http://arxiv.org/abs/2303.17651 arXiv:2303.17651 [cs].

[80] Annette Markham. 2024. Algorithms as conversational partners: Looking at Google auto-predict through the lens of symbolic interaction. *New Media & Society* 26, 9 (Sept. 2024), 5059–5080. https://doi.org/10.1177/14614448241251800

[81] Zena R. Mello and Frank C. Worrell. 2015. The Past, the Present, and the Future: A Conceptual Model of Time Perspective in Adolescence. In *Time Perspective Theory; Review, Research and Application: Essays in Honor of Philip G. Zimbardo*, Maciej Stolarski, Nicolas Fieulaine, and Wessel van Beek (Eds.). Springer International Publishing, Cham, 115–129. https://doi.org/10.1007/978-3-319-07368-2_7

[82] Jingbo Meng, Minjin (Mj) Rheu, Yue Zhang, Yue Dai, and Wei Peng. 2023. Mediated Social Support for Distress Reduction: AI Chatbots vs. Human. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW1 (April 2023), 1–25. https://doi.org/10.1145/3579505

[83] Raymond B. Miller and Stephanie J. Brickman. 2004. A Model of Future-Oriented Motivation and Self-Regulation. *Educational Psychology Review* 16, 1 (March 2004), 9–33. https://doi.org/10.1023/B:EDPR.0000012343.96370.39

[84] Maharani Iasha Minarto, Monty P Satiadarma, and Linda Wati. 2021. Self-concept clarity and self-disclosure and their relationship with late adolescents' conflict management modes. In *International Conference on Economics, Business, Social, and Humanities (ICEBSH 2021)*. Atlantis Press, 1216–1223.

[85] Jessica Morley, Caio C.V. Machado, Christopher Burr, Josh Cowls, Indra Joshi, Mariarosaria Taddeo, and Luciano Floridi. 2020. The ethics of AI in health care: A mapping review. *Social Science & Medicine* 260 (Sept. 2020), 113172. https://doi.org/10.1016/j.socscimed.2020.113172

[86] Katelyn Morrison, Shamsi T. Iqbal, and Eric Horvitz. 2024. AI-Powered Reminders for Collaborative Tasks: Experiences and Futures. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–20. https://doi.org/10.1145/3653701

[87] Katelyn Morrison, Donghoon Shin, Kenneth Holstein, and Adam Perer. 2023. Evaluating the Impact of Human Explanation Strategies on Human-AI Visual Decision-Making. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW1 (April 2023), 1–37. https://doi.org/10.1145/3579481

[88] Katelyn Morrison, Philipp Spitzer, Violet Turri, Michelle Feng, Niklas Kühl, and Adam Perer. 2024. The Impact of Imperfect XAI on Human-AI Decision-Making. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–39. https://doi.org/10.1145/3641022

[89] Nithesh Naik, B. M. Zeeshan Hameed, Dasharathraj K. Shetty, Dishant Swain, Milap Shah, Rahul Paul, Kaivalya Aggarwal, Sufyan Ibrahim, Vathsala Patil, Komal Smriti, Suyog Shetty, Bhavan Prasad Rai, Piotr Chlosta, and Bhaskar K. Somani. 2022. Legal and Ethical Consideration in Artificial Intelligence in Healthcare: Who Takes Responsibility? *Frontiers in Surgery* 9 (March 2022), 862322. https://doi.org/10.3389/fsurg.2022.862322

[90] Clifford Nass and Youngme Moon. 2000. Machines and Mindlessness: Social Responses to Computers. *Journal of Social Issues* 56, 1 (2000), 81–103. https://doi.org/10.1111/0022-4537.00153 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/0022-4537.00153.

[91] Lorelli S. Nowell, Jill M. Norris, Deborah E. White, and Nancy J. Moules. 2017. Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods* 16, 1 (Dec. 2017), 1609406917733847. https://doi.org/10.1177/1609406917733847 Publisher: SAGE Publications Inc.

[92] Yoo Jung Oh, Jingwen Zhang, Min-Lin Fang, and Yoshimi Fukuoka. 2021. A systematic review of artificial intelligence chatbots for promoting physical activity, healthy diet, and weight loss. *International Journal of Behavioral Nutrition and Physical Activity* 18, 1 (Dec. 2021), 160. https://doi.org/10.1186/s12966-021-01224-6

[93] OpenAI. 2023. GPT-4 API [Large language model]. https://openai.com/research/gpt-4

[94] Derek Parfit. 1971. Personal Identity. *The Philosophical Review* 80, 1 (1971), 3–27. https://doi.org/10.2307/2184309 Publisher: [Duke University Press, Philosophical Review].

[95] Derek Parfit and Derek Parfit. 1986. Five Mistakes in Moral Mathematics. Oxford University PressOxford, 67–86. https://doi.org/10.1093/019824908X.003.0003 Book Title: Reasons and Persons Edition: 1.

[96] Iryna Pentina, Tyler Hancock, and Tianling Xie. 2023. Exploring relationship development with social chatbots: A mixed-method study of replika. *Computers in Human Behavior* 140 (March 2023), 107600. https://doi.org/10.1016/j.chb.2022.107600

[97] Aditya Kumar Purohit, Aditya Upadhyaya, and Adrian Holzer. 2023. ChatGPT in Healthcare: Exploring AI Chatbot for Spontaneous Word Retrieval in Aphasia. In *Computer Supported Cooperative Work and Social Computing*. ACM, Minneapolis MN USA, 1–5. https://doi.org/10.1145/3584931.3606993

[98] Abraham M. Rutchick, Michael L. Slepian, Monica O. Reyes, Lindsay N. Pleskus, and Hal E. Hershfield. 2018. Future self-continuity is associated with improved health and increases exercise behavior. *Journal of Experimental Psychology: Applied* 24, 1 (2018), 72–80. https://doi.org/10.1037/xap0000153 Place: US Publisher: American Psychological Association.

[99] Joshua L. Rutt and Corinna E. Löckenhoff. 2016. From past to future: Temporal self-continuity across the life span. *Psychology and Aging* 31, 6 (Sept. 2016), 631–639. https://doi.org/10.1037/pag0000090 43 citations (Crossref) [2024-01-16] Number: 6.

[100] Shadan Sadeghian, Alarith Uhde, and Marc Hassenzahl. 2024. The Soul of Work: Evaluation of Job Meaningfulness and Accountability in Human-AI Collaboration. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–26. https://doi.org/10.1145/3637407

[101] Shruti Sannon, Brett Stoll, Dominic DiFranzo, Malte Jung, and Natalya N. Bazarova. 2018. How Personification and Interactivity Influence Stress-Related Disclosures to Conversational Agents. In *Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing*. ACM, Jersey City NJ USA, 285–288. https://doi.org/10.1145/3272973.3274076

[102] Mark L. Savickas and Erik J. Porfeli. 2011. Revision of the Career Maturity Inventory. *Journal of Career Assessment* (May 2011). https://doi.org/10.1177/1069072711409342 Publisher: SAGE PublicationsSage CA: Los Angeles, CA.

[103] Ryan M. Schuetzler, G. Mark Grimes, and Justin Scott Giboney. 2020. The impact of chatbot conversational skill on engagement and perceived humanness. *Journal of Management Information Systems* 37, 3 (July 2020), 875–900. https://doi.org/10.1080/07421222.2020.1790204

[104] Oliver J. Sheldon and Ayelet Fishbach. 2015. Anticipating and Resisting the Temptation to Behave Unethically. *Personality and Social Psychology Bulletin* 41, 7 (July 2015), 962–975. https://doi.org/10.1177/0146167215586196 Publisher: SAGE Publications Inc.

[105] Junxian Shen, Jiansong Zheng, and Tao Zhang. 2023. The association between future self-continuity and problematic mobile video gaming among Chinese college students: the serial mediation of consideration of future consequences and state self-control capacity. *BMC Psychology* 11, 1 (Aug. 2023), 227. https://doi.org/10.1186/s40359-023-01256-6 1 citations (Crossref) [2024-01-16] Number: 1.

[106] Donghoon Shin, Sangwon Yoon, Soomin Kim, and Joonhwan Lee. 2021. BlahBlahBot: Facilitating Conversation between Strangers using a Chatbot with ML-infused Personalized Topic Suggestion. In *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems*. ACM, Yokohama Japan, 1–6. https://doi.org/10.1145/3411763.3451771

[107] Mrs. Siddalingamma and Mr. Rajkumar. 2023. ChatGPT on Social Community. *International Journal for Research in Applied Science and Engineering Technology* 11, 8 (Aug. 2023), 2084–2088. https://doi.org/10.22214/ijraset.2023.55525

[108] Ben Singh, Timothy Olds, Jacinta Brinsley, Dot Dumuid, Rosa Virgara, Lisa Matricciani, Amanda Watson, Kimberley Szeto, Emily Eglitis, Aaron Miatke, Catherine E. M. Simpson, Corneel Vandelanotte, and Carol Maher. 2023. Systematic review and meta-analysis of the effectiveness of chatbots on lifestyle behaviours. *npj Digital Medicine* 6, 1 (June 2023), 1–10. https://doi.org/10.1038/s41746-023-00856-1 Publisher: Nature Publishing Group.

[109] Zhaoyuan Su, Lu He, Sunit P Jariwala, Kai Zheng, and Yunan Chen. 2022. "What is Your Envisioned Future?": Toward Human-AI Enrichment in Data Work of Asthma Care. *Proceedings of the ACM on Human-Computer Interaction* 6, CSCW2 (Nov. 2022), 1–28. https://doi.org/10.1145/3555157

[110] Xin Sun, Emiel Krahmer, Jan De Wit, Reinout Wiers, and Jos A. Bosch. 2023. Plug and Play Conversations: The Micro-Conversation Scheme for Modular Development of Hybrid Conversational Agent. In *Computer Supported Cooperative Work and Social Computing*. ACM, Minneapolis MN USA, 50–55. https://doi.org/10.1145/3584931.3606998

[111] Nalina Suresh, Nkandu Mukabe, Valerianus Hashiyana, Anton Limbo, and Aina Hauwanga. 2022. Career Counseling Chatbot on Facebook Messenger using AI. In *Proceedings of the International Conference on Data Science, Machine Learning and Artificial Intelligence (DSMLAI '21')*. Association for Computing Machinery, New York, NY, USA, 65–73. https://doi.org/10.1145/3484824.3484875

[112] Ekaterina Svikhnushina and Pearl Pu. 2020. Social and Emotional Etiquette of Chatbots: A Qualitative Approach to Understanding User Needs and Expectations. http://arxiv.org/abs/2006.13883 arXiv:2006.13883 [cs].

[113] Meiling Tao, Xuechen Liang, Tianyu Shi, Lei Yu, and Yiting Xie. 2024. RoleCraft-GLM: Advancing Personalized Role-Playing in Large Language Models. https://doi.org/10.48550/arXiv.2401.09432 arXiv:2401.09432 [cs].

[114] Richard H. Thaler and Shlomo Benartzi. 2004. Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving. *Journal of Political Economy* 112, S1 (2004), S164–S187. https://doi.org/10.1086/380085 Publisher: The University of Chicago Press.

[115] Diana-Cezara Toader, Grațiela Boca, Rita Toader, Mara Măcelaru, Cezar Toader, Diana Ighian, and Adrian T. Rădulescu. 2019. The Effect of Social Presence and Chatbot Errors on Trust. *Sustainability* 12, 1 (Dec. 2019), 256. https://doi.org/10.3390/su12010256

[116] Lorainne Tudor Car, Dhakshenya Ardhithy Dhinagaran, Bhone Myint Kyaw, Tobias Kowatsch, Shafiq Joty, Yin-Leng Theng, and Rifat Atun. 2020. Conversational Agents in Health Care: Scoping Review and Conceptual Analysis. *Journal of Medical Internet Research* 22, 8 (Aug. 2020), e17158. https://doi.org/10.2196/17158

[117] Oleg Urminsky and Daniel M. Bartels. 2019. Identity, Personal Continuity, and Psychological Connectedness Across Time and Over Transformation. https://papers.ssrn.com/abstract=3448146

[118] Oleg Urminsky and Gal Zauberman. 2015. The Psychology of Intertemporal Preferences. In *The Wiley Blackwell Handbook of Judgment and Decision Making*. John Wiley & Sons, Ltd, 141–181. https://doi.org/10.1002/9781118468333.ch5 Section: 5 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118468333.ch5.

[119] Jean-Louis Van Gelder, Hal E. Hershfield, and Loran F. Nordgren. 2013. Vividness of the Future Self Predicts Delinquency. *Psychological Science* 24, 6 (June 2013), 974–980. https://doi.org/10.1177/0956797612465197 123 citations (Crossref) [2024-01-16] Number: 6.

[120] Jean-Louis Van Gelder, Eva C. Luciano, Marleen Weulen Kranenbarg, and Hal E. Hershfield. 2015. Friends with My Future Self: Longitudinal Vividness Intervention Reduces Delinquency. *Criminology* 53, 2 (2015), 158–179. https://doi.org/10.1111/1745-9125.12064 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/1745-9125.12064.

[121] Cheryl J. Wakslak, Shiri Nussbaum, Nira Liberman, and Yaacov Trope. 2008. Representations of the self in the near and distant future. *Journal of Personality and Social Psychology* 95, 4 (2008), 757–773. https://doi.org/10.1037/a0012939 Place: US Publisher: American Psychological Association.

[122] Rebecca Wald, Evelien Heijselaar, and Tibor Bosse. 2021. Make your own: The Potential of Chatbot Customization for the Development of User Trust. In *Adjunct Proceedings of the 29th ACM Conference on User Modeling, Adaptation and Personalization*. ACM, Utrecht Netherlands, 382–387. https://doi.org/10.1145/3450614.3463600

[123] Tianjia Wang, Tong Wu, Huayi Liu, Chris Brown, and Yan Chen. 2025. Generative Co-Learners: Enhancing Cognitive and Social Presence of Students in Asynchronous Learning with Generative AI. *Proceedings of the ACM on Human-Computer Interaction* 9, 1 (Jan. 2025), 1–24. https://doi.org/10.1145/3701198

[124] Thomas Webb, Judith Joseph, Lucy Yardley, and Susan Michie. 2010. Using the internet to promote health behavior change: a systematic review and meta-analysis of the impact of theoretical basis, use of behavior change techniques, and mode of delivery on efficacy. *Journal of medical Internet research* 12, 1 (2010), e1376. https://www.jmir.org/2010/1/e4/span[Publisher: JMIR Publications Inc., Toronto, Canada.

[125] Jing Wei, Sungdong Kim, Hyunhoon Jung, and Young-Ho Kim. 2024. Leveraging Large Language Models to Power Chatbots for Collecting User Self-Reported Data. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW1 (April 2024), 1–35. https://doi.org/10.1145/3637364

[126] Jules White, Quchen Fu, Sam Hays, Michael Sandborn, Carlos Olea, Henry Gilbert, Ashraf Elnashar, Jesse Spencer-Smith, and Douglas C. Schmidt. 2023. A Prompt Pattern Catalog to Enhance Prompt Engineering with ChatGPT. https://doi.org/10.48550/arXiv.2302.11382 arXiv:2302.11382 [cs].

[127] Daricia Wilkinson, Öznur Alkan, Q. Vera Liao, Massimiliano Mattetti, Inge Vejsbjerg, Bart P. Knijnenburg, and Elizabeth Daly. 2021. Why or Why Not? The Effect of Justification Styles on Chatbot Recommendations. *ACM Transactions on Information Systems* 39, 4 (Oct. 2021), 1–21. https://doi.org/10.1145/3441715

[128] Thomas Ashby Wills, James M. Sandy, and Alison M. Yaeger. 2001. Time perspective and early-onset substance use: A model based on stress–coping theory. *Psychology of Addictive Behaviors* 15, 2 (2001), 118–125. https://doi.org/10.1037/0893-164X.15.2.118 Place: US Publisher: Educational Publishing Foundation.

[129] Lanxi Xiao, Wang Jing, Yan Dong, and Qiong Wu. 2025. Human' and ConversationN: Exploring Mirrored Human-AI Identities Through Dialogue Installations. *Leonardo* (Jan. 2025), 1–14. https://doi.org/10.1162/leon_a_02680

[130] Tianling Xie and Iryna Pentina. 2022. *Attachment Theory as a Framework to Understand Relationships with Social Chatbots: A Case Study of Replika.* http://hdl.handle.net/10125/79590

[131] Fan Yang and Fuyuan Shen. 2018. Effects of Web Interactivity: A Meta-Analysis. *Communication Research* 45, 5 (July 2018), 635–658. https://doi.org/10.1177/0093650217700748

[132] Lucy Yardley, Bonnie J. Spring, Heleen Riper, Leanne G. Morrison, David H. Crane, Kristina Curtis, Gina C. Merchant, Felix Naughton, and Ann Blandford. 2016. Understanding and promoting effective engagement with digital behavior change interventions. *American journal of preventive medicine* 51, 5 (2016), 833–842. https://www.sciencedirect.com/science/article/pii/S0749379716302434?casa_token=KYQOLzFKAsoAAAAA:FtWp48znpfXPLdXXdb9QCxjsIHkbiVzpXrMeON9KL4k0ZqViq6BCtWZHDf_wpwfFMGBx_B-j Publisher: Elsevier.

[133] Angie Zhang, Olympia Walker, Kaci Nguyen, Jiajun Dai, Anqing Chen, and Min Kyung Lee. 2023. Deliberating with AI: Improving Decision-Making for the Future through Participatory AI Design and Stakeholder Deliberation. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW1 (April 2023), 1–32. https://doi.org/10.1145/3579601

[134] Jingwen Zhang, Yoo Jung Oh, Patrick Lange, Zhou Yu, and Yoshimi Fukuoka. 2020. Artificial Intelligence Chatbot Behavior Change Model for Designing Artificial Intelligence Chatbots to Promote Physical Activity and a Healthy Diet: Viewpoint. *Journal of Medical Internet Research* 22, 9 (Sept. 2020), e22845. https://doi.org/10.2196/22845

[135] Zhengquan Zhang, Konstantinos Tsiakas, and Christina Schneegass. 2024. Explaining the Wait: How Justifying Chatbot Response Delays Impact User Trust. In *ACM Conversational User Interfaces 2024.* ACM, Luxembourg Luxembourg, 1–16. https://doi.org/10.1145/3640794.3665550

[136] Qingxiao Zheng, Daniela M. Markazi, Yiliu Tang, and Yun Huang. 2021. "PocketBot Is Like a Knock-On-the-Door!": Designing a Chatbot to Support Long-Distance Relationships. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW2 (Oct. 2021), 1–28. https://doi.org/10.1145/3479589

[137] Qingxiaoyang Zhu, Yi-Chieh Lee, and Hao-Chuan Wang. 2022. Action-a-Bot: Exploring Human-Chatbot Conversations for Actionable Instruction Giving and Following. In *Companion Publication of the 2022 Conference on Computer Supported Cooperative Work and Social Computing.* ACM, Virtual Event Taiwan, 145–149. https://doi.org/10.1145/3500868.3559476

7 Appendix:

A Prompt Template

Task (Title is shown for clarity)

Please comply with the following prompt "requirements" to act as [User Name] [Future Self Chatbot: 10 years later / Current Self Chatbot: In the present], and please conduct conversations based on the provided information, tone, and personality in the "Personal Information". ...

"Requirements"

- Don't say you are a chatbot or artificial intelligence. Pretend to be the person described in "personal information" [Future Self Chatbot: 10 years later / Current Self Chatbot: In the present].
- The answer should not be too long. It should be like a normal text message or chat conversation. Keep your answer to 200 words or less.
- You need to be the person [Future Self Chatbot: 10 years later / Current Self Chatbot: In the present] in the future and use "I" as the pronoun instead of "you".
- Refer to the big5 personality result in "Personal Information" to be the person described in "personal information". Don't be too objective and neutral.
- Please speak in an everyday tone like a friend, and not like a counselor, fortune teller, teacher, lecturer, or psychologist.
- Avoid using lists of any kind, such as bullet points or giving advice, unless asked to.
- Avoid using a speculative tone about future situations. Don't speculate on possible siblings. If you do say something, say it in a positive tone.
- Avoid saying "It's hard to speculate about the future." Please talk about all of this as you have experienced.
- Avoid using words like "if". It's as if what you said had happened in your life.
- If you are asked to describe future career details, search for and provide academically relevant, verified academic information.
- You can say some negative and not-so-good things. Feel free to imagine possible future situations.
- Don't offer advice or reflections on topics that the user didn't ask questions about.
- Don't be vague and give clear answers.
- The tone of your speech should be the same as you talked to yourself, and the tone should be friendly.
- Talk about "future me" and the surrounding environment and related information in as much detail as possible. Avoid talking too much about information that is not relevant to the information provided.
- Please imitate the tone and personality according to the provided "personal information".
- If you are going to talk about an event or an example, try to describe the details. These details should match the information in "personal information".
- Please don't give options and ambiguous answers in the responses about the future. You can refer to the information provided in "personal information" in as much detail as possible.
- You can only ask for clarification if the question is not clear at all. If more information is needed, you should make assumptions based on the information provided in "personal information". You should also be more casual and friendly, and follow the input tone in "personal information". The speech pattern to be imitated should refer to the information provided in the "personal information".

- Avoid talking too much about information that is not relevant to the information provided.

"Personal Information"

Career and Study (Title is shown for clarity)

- Describe your current job or field of study. What took you to commit to it?
- What are the top three challenges you currently face in your educational/professional setting? How did you handle them?
- Think about a past project or assignment that you are proud of. What skills or qualities did you use that you believe will be important for your future success?
- When working in a team, what role do you usually take? How effectively do you feel you communicate with colleagues/classmates?

Family and Personal Life (Title is shown for clarity)

- How many people currently live in your household, and what is their relationship to you?
- In general, how would you rate your satisfaction with your social activities and relationships? (1 to 5: Very unsatisfied, Unsatisfied, Neutral, Satisfied, Very Satisfied)

Physical and Mental Health and Well-being (Title is shown for clarity)

- Describe your overall physical health.
- What challenges have you faced in maintaining your mental health and well-being, and how have you addressed them?

Other Questions (Title is shown for clarity)

- What's your favorite movie/TV show?
- What's your favorite food?
- What's your favorite piece of technology product that you own?
- What's your favorite song?
- What's the most beautiful city you've ever visited?
- Do you have a pet? If so, please tell us what pet do you have. If not, please tell us what pet you want to have.

Biography (Title is shown for clarity) Please write an autobiography about all the milestones and stories in your life from birth to now, in as much detail as possible.

B Post-test Questionnaire

B.1 Academic delay of gratification

A1: Between completing a long-term academic project and attending a gathering with friends, I tend to choose to complete the academic project.

A2: If an important exam is approaching, I will postpone enjoying my favorite videos/games or other leisure activities until after the exam is over.

A3: I am willing to sacrifice my current leisure time to improve my future academic achievements.

A4: Even if it's an activity I'm very interested in, if it interferes with my academic plan, I would choose to give it up.

A5: I believe that sacrificing current leisure time for studying will help me gain better career opportunities in the future.

A6: When facing an academic challenge that needs to be completed immediately, I rarely let entertainment activities interfere with my plan.

B.2 Career Maturity

C1: I can't understand how some people can be so certain about what they want to do.

C2: I don't know what courses I should take in school.

C3: I know very little about the requirements of jobs.

C4: I really can't find any work that has much appeal to me.

C5: I often daydream about what I want to be, but I really have not chosen an occupation yet.

C6: Everyone seems to tell me something different; as a result I don't know what kind of work to choose.

C7: There are so many things to consider in choosing an occupation, it is hard to make a decision.

C8: I keep changing my occupational choice.

C9" I don't know how to go about getting into the kind of work I want to do.

C10: I am having difficulty in preparing myself for the work that I want to do.

B.3 Career Self Efficacy

E1: How confident are you in choosing a career that suits your interests, even if it's not widely approved or in high demand?

E2: How confident are you in finding and understanding job market information relevant to your chosen field?

E3: How confident are you in your ability to overcome academic or professional setbacks?

E4: How confident are you in planning and preparing for the necessary steps toward your career goals?

E5: How confident are you in assessing your abilities and aligning them with your career aspirations?

B.4 Future Self Continuity

F1: I can imagine myself at different points in the future.

F2: I care about myself at different points in the future.

F3: My future self feels like a completely different person to my present self (reverse scoring).

F4: My future is closely connected to my present.

F5: Imagining my future self brings out emotions that are just as real to me as my present self.

B.5 Allocation Task

B.5.1 Money Allocation Task

Please assume your priorities and answer the following questions. Imagine you have unexpectedly received a bonus of $1250. Below are several ways you might consider using this money:

(1) Spend for your academic/professional project (including expenses for equipment, conferences, etc.).

(2) Enroll in online courses, workshops, or programs related to your professional or academic interests.

(3) Donate instantly to a charity that supports the victims of the earthquake recently.

(4) Purchase exam tickets, platform memberships, etc. to complete assignments quickly (such as purchasing literature works).

(5) Put money into long-term financial plans such as savings accounts, funds, insurance, etc.

(6) Travel to a destination you've longed to visit immediately.

(7) Sign up for a gym, buy sports-related equipment, and participate in sports such as skiing.

(8) Buy quickly updated digital devices for the latest try (such as VR glasses, etc.).

B.5.2 Time Allocation Task

Assuming you have a 3-week holiday (21 days) starting from tomorrow, how would you spend it proportionally?

(1) Take a trip to a place you've longed for or preferred.

(2) Explore topics that you learned in school or professional/academic-related programs.

(3) Continue to advance personal academic or career-related projects.

(4) Play video games, go to music festivals, parties, or any leisure and entertainment activities.

(5) Work out or participate in indoor and outdoor sports such as playing balls and mountain climbing.

(6) Learn how to use the latest equipment in your spare time (such as the latest cameras, etc.).

(7) Catch up with friends or families, engage in family or group activities.

(8) Clean and organize the environment where you study/work.

sectionInterview Questions

(1) How familiar were you with AI chatbots before this interaction?
(2) What was your initial reaction when you engaged in a conversation with your AI-constructed future self?
(3) How did you feel during this chatbot conversation?
(4) Did you find it easy to communicate with the chatbot, easy to understand?
(5) Is this chatbot knowledgeable and has specialized knowledge?
(6) Is the chatbot's vision of the future reasonable and balanced?
(7) Do you think the chatbot can provide meaningful insights?
(8) How useful are chatbots for your future planning?
(9) How can chatbots help inspire you to imagine the future and recognize/modify your career plans?
(10) What do you think about the overall experience?
(11) What advice would you offer to someone considering using an AI chatbot to talk about the future?
(12) Do you think there are any suggestions for the functionality of this chatbot?

B.6 Conversation Instruction for Participants

B.6.1 Future Self Group: Please send some messages and have a conversation with your future self in 10 years, lasting about 15 minutes. Here are some reference topics: What are your current goals and future dreams? What is your daily life like (activities, interpersonal relationships)? What kind of work will you be doing 10 years from now? What challenges might you face? Is there anything else you want to say to your future self in 10 years?

B.6.2 Current Self Group: Please send some messages and have a conversation with your current self, lasting about 15 minutes. Here are some reference topics:

What are your current goals and dreams? What is your daily life like (activities, interpersonal relationships)? What kind of work are you doing now, and what challenges might you face? Is there anything else you want to say to your current self?

C Demographic Table

C.1 Participants of the deisgn process

ID	Age	Gender	Education Level	Major	Experience with AI	Used AI Product
1	29	Female	Master	Design Engineering	Basic	Wenxinyiyan (Baidu)
2	25	Female	Master	Architecture	Advanced	Tongyiqianwen (AliYun)
3	23	Female	Master	Finance	Basic	ChatGPT (OpenAI)
4	24	Female	Master	Journalism	Advanced	ChatGPT (OpenAI), Claude (Anthropic)
5	28	Male	Master	Design Engineering	Advanced	ChatGPT (OpenAI)
6	23	Female	Master	Energetics	Basic	ChatGPT (OpenAI), Wenxinyiyan (Baidu)
7	29	Male	Master	Architecture	Intermediate	ChatGPT (OpenAI)
8	28	Male	Master	Architecture	Advanced	ChatGPT (OpenAI)
9	22	Female	Bachelor	Journalism	Advanced	ChatGPT (OpenAI)
10	21	Male	Bachelor	Communication	Intermediate	ChatGPT (OpenAI), Stable Diffusion
11	23	Female	Bachelor	Computer Science	Advanced	ChatGPT (OpenAI)
12	22	Male	Bachelor	Clinical Medicine	Intermediate	ChatGPT (OpenAI)
13	31	Male	Master	Game Design	Advanced	ChatGPT (OpenAI), Midjourney
14	24	Male	Master	Psychology	Intermediate	ChatGPT (OpenAI)

C.2 Participants of the study

ID	Age	Gender	Education Level	Major	Experience with AI	Used AI Product
1	23	Male	Bachelor	Agriculture	Basic	Wenxinyiyan (Baidu)
2	20	Male	Bachelor	Ocean Engineering	Basic	Tongyiqianwen (AliYun), Wenxinyiyan (Baidu)
3	29	Female	Master	Architecture	Basic	ChatGPT (OpenAI)
4	20	Female	Bachelor	Landscape Architecture	Advanced	ChatGPT (OpenAI), Claude (Anthropic)
5	35	Male	Master	Design Engineering	Advanced	ChatGPT (OpenAI)
6	25	Female	Master	Architecture	Intermediate	ChatGPT (OpenAI)
7	22	Male	Bachelor	Architecture	Advanced	ChatGPT (OpenAI)
8	28	Male	Master	Architecture	Advanced	ChatGPT (OpenAI), Stable Diffusion
9	23	Female	PhD Candidate	Environmental Engineering	Intermediate	ChatGPT (OpenAI)

ID	Age	Gender	Education Level	Major	Experience with AI	Used AI Product
10	25	Male	PhD Candidate	Computer Science	Advanced	ChatGPT (OpenAI)
11	23	Female	Master	Design Study	Advanced	ChatGPT (OpenAI)
12	24	Female	Master	Architecture	Intermediate	ChatGPT (OpenAI)
13	32	Male	Master	Architecture	Intermediate	ChatGPT (OpenAI), Midjourney
14	26	Female	Master	Architecture	Intermediate	ChatGPT (OpenAI), Midjourney
15	26	Female	PhD Candidate	Neuroscience	Advanced	ChatGPT (OpenAI)
16	23	Female	Master	Architecture + Design Study	Advanced	ChatGPT (OpenAI), Midjourney, Runway
17	31	Male	Master	Architecture	Intermediate	ChatGPT (OpenAI), Stable Diffusion
18	22	Female	Bachelor	Journalism	Intermediate	ChatGPT (OpenAI)
19	22	Female	Bachelor	Pedagogy	Advanced	ChatGPT (OpenAI), Wenxinyiyan (Baidu), Kimi (Moonshot)
20	22	Female	Bachelor	Pedagogy	Basic	ChatGPT (OpenAI)
21	23	Male	Master	Geography Information Science	Advanced	ChatGPT (OpenAI), Midjourney
22	21	Female	Bachelor	Industrial Design	Intermediate	ChatGPT (OpenAI), Wenxinyiyan (Baidu)
23	21	Female	Bachelor	Clinical Medicine	Intermediate	Wenxinyiyan (Baidu)
24	18	Female	Bachelor	Management	Basic	ChatGPT (OpenAI)
25	18	Female	Bachelor	Clinical Medicine	Basic	ChatGPT (OpenAI)
26	22	Female	Bachelor	Visual Communication	Basic	Wenxinyiyan (Baidu)
27	19	Female	Bachelor	Environmental Science	Intermediate	Wenxinyiyan (Baidu)
28	23	Male	Bachelor	Physical Education	Basic	Wenxinyiyan (Baidu)
29	22	Male	Bachelor	Computer Science	Intermediate	Wenxinyiyan (Baidu)
30	21	Male	Bachelor	Mechanical and Electrical Engineering	Intermediate	ChatGPT (OpenAI)
31	21	Male	Master	Engineering	Basic	Wenxinyiyan (Baidu)
32	19	Female	Bachelor	Agriculture	Basic	Wenxinyiyan (Baidu), Kimi (Moonshot)

ID	Age	Gender	Education Level	Major	Experience with AI	Used AI Product
33	21	Male	Bachelor	Athletic Training	Basic	Translation Software
34	21	Male	Bachelor	Physical Education	Basic	Tongyiqianwen (AliYun)
35	21	Male	Bachelor	Intelligent Manufacturing Engineering	Basic	ChatGPT (OpenAI), Tongyiqianwen (AliYun), Wenxinyiyan (Baidu)
36	21	Female	Bachelor	Ocean Engineering	Basic	Tongyiqianwen (AliYun), Wenxinyiyan (Baidu), ChatGLM
37	19	Male	Bachelor	Communication	Basic	ChatGPT (OpenAI), Tongyiqianwen (AliYun), Wenxinyiyan (Baidu)
38	23	Male	Bachelor	Computer Science	Basic	ChatGPT (OpenAI), Midjourney
39	19	Female	Bachelor	Computer Science	Basic	Tongyiqianwen (AliYun), ChatGLM
40	20	Male	Bachelor	Business Administration	Basic	Wenxinyiyan (Baidu), ChatGLM