

# SHIFTING PERSONAS

Graduation Thesis  
BSc Creative Computing 2024-2025

Lamita Farah

## **Abstract**

This study investigates the influence of AI's human-like persona and embodiment on user perception, engagement, and decision-making. Through the development and testing of various AI avatars, this project examines the impact of visual design and conversational style on user experiences. The interactive experiment utilised Groq's high-performance API for real-time natural language processing, the LLaMA model for diverse conversational responses, and Streamlit for a responsive user interface, creating a seamless platform for participant interactions.

Quantitative analysis revealed that shifts in AI tone significantly affected participants' emotional responses, emphasising the importance of consistent, supportive communication for building trust. While participants rated the AI avatars similarly in terms of perceived intelligence and reliability, the human-likeness and perceived authenticity of the avatars had different effects on user impression, highlighting the complex role of visual design in shaping expectations.

Qualitative findings from thematic analysis revealed the demand for customisable AI designs that align with user identity and preferences. However, ethical considerations, including the risks of emotional manipulation and user dependency, stress the need for transparency and user control in AI design.

This research offers valuable insights into the design of emotionally adaptive AI agents, suggesting that a more personalised approach may enhance user engagement and trust, while also raising critical ethical considerations for the future of AI interaction design.

# Table of Contents

<b>1. Introduction</b>	<b>5</b>
<b>2. Literature review</b>	<b>8</b>
2.1 The Role of Conversational Agents in AI Interaction and User Experience	8
2.2 Personality Modelling in Conversational Agents	9
2.3 Anthropomorphism in Conversational Agents	10
2.4 The Effects of AI Adaptability and Anthropomorphic Cues on Self-AI Integration	11
2.5 Consequences of Self-AI Integration	12
<b>3. User Research and Personas</b>	<b>14</b>
<b>4. Ideation</b>	<b>18</b>
<b>5. Project Planning and Requirements</b>	<b>27</b>
<b>6. Development</b>	<b>30</b>
6.1. Avatar Design	30
6.2. Chatbot Development	31
6.3. Prompt Design	32
<b>7. Methodology</b>	<b>36</b>
<b>8. Results</b>	<b>38</b>
8.1 PAD questionnaire statistical analysis	38
8.1.1 Descriptive Statistics	38
8.1.2 Correlation Analysis	39
8.2 Statistical Analysis of Perceived Intelligence, Trustworthiness, and Influence Across Avatar Types	40
8.3 Thematic Analysis	43
8.3.1 Embodiment Preferences – Contextual Overview	43
8.3.2 AI Appearance Preferences	45
8.3.3 Analysis of trust in AI based on tone	45
8.3.4 Participant Opinions on Emotionally Adaptive AI	46
8.3.5 Participant Opinions on Customisation and Personalisation	47
<b>9. Limitations and Future Implementations</b>	<b>47</b>
<b>10. Conclusion</b>	<b>48</b>
<b>11. Bibliography</b>	<b>51</b>
<b>12. Appendices</b>	<b>55</b>

## List of Figures

Figure 1: Farah, L (2025) User persona profile: Olivia [Screenshot] .....	15
Figure 2: Farah, L (2025) User persona profile: Mark [Screenshot] .....	16
Figure 3: Farah, L (2025) User persona profile: Emily [Screenshot] .....	17
Figure 4: Farah, L (2025) Initial brainstorming for the different dimensions [Screenshot] .....	19
Figure 5: Farah, L (2025) Initial mind map of how the AI agent could detect user personality and emotions [Screenshot] .....	20
Figure 6: Farah, L (2025) Limitations of the Different Emotion Recognition Methods [Screenshot] .....	21
Figure 7: Farah, L (2025) Limitations of the Different Personality Prediction Methods [Screenshot] .....	22
Figure 8: Farah, L (2025) The user-AI interaction flow that will take place during the study [Screenshot] .....	23
Figure 9: Farah, L (2025) The user journey map of Olivia [Screenshot] .....	24
Figure 10: Farah, L (2025) The user journey map of Mark [Screenshot] .....	25
Figure 11: Farah, L (2025) The user journey map of Emily [Screenshot] .....	26
Figure 12: Farah, L (2025) GANTT Chart [Screenshot] .....	27
Figure 13: Farah, L (2025) MoSCow project Chart [Screenshot] .....	28
Figure 14: Farah, L (2025) SMART project goals [Screenshot] .....	29
Figure 15: Farah, L (2025) The AI agent's avatars: Leah, Sam, Squidji, Halo [Screenshot] .....	31
Figure 16: Farah, L (2025) Avatar selection interface [Screenshot] .....	33
Figure 17: Farah, L (2025) Chatbot Interface [Screenshot] .....	34
Figure 18: Farah, L (2025) Chat interface snippet for different AI avatars [Screenshot] .....	35
Figure 19: Farah, L (2025) Experimental Procedure [Screenshot] .....	37

## List of Tables

Table 1: Farah, L (2025) Overview of the Questionnaires Used and Their Application in This Study [Screenshot] .....	37
Table 2: Farah, L (2025) Initial Means and Standard Deviations [Screenshot] .....	38
Table 3: Farah, L (2025) Means and Standard Deviations After [Screenshot] .....	38
Table 4: Farah, L (2025) Statistical test results of the different dimensions [Screenshot] .....	39
Table 5: Farah, L (2025) Correlation Matrix of Emotional Connection, Engagement and Emotional Involvement [Screenshot] .....	39
Table 6: Farah, L (2025) Embodiment Choice and Perceived Intelligence, Human-Likeness, Trust, and Influence [Screenshot] .....	42
Table 7: Farah, L (2025) Participant Reflections on AI Avatar Preferences [Screenshot] .....	43
Table 8: Farah, L (2025) Participants' Perceptions of Trust Across Different AI Tones [Screenshot] .....	46
Table 9: Farah, L (2025) Themes in Participants' Views on Emotionally Adaptive AI [Screenshot] .....	46
Table 10: Farah, L (2025) Themes in Participant Views on Customisation and Personalisation [Screenshot] .....	47

## List of Charts

Chart 1: Farah, L (2025) Influence on Decision-Making by AI embodiments [Screenshot] .....	41
Chart 2: Farah, L (2025) Participant Preferences for AI Appearance [Screenshot] ...	45
Chart 3: Farah, L (2025) User trust based on the AI tone [Screenshot] .....	45

## 1. Introduction

Human-Computer Interaction (HCI) is a multidisciplinary field that studies and designs effective and efficient interactions between users and computer systems to meet their needs (Xu et al., 2022). Traditional HCI focuses on human interaction with rule-based computing systems designed for predictable outcomes. With AI integration, HCI is evolving into Human-AI Interaction (HAI), an interdisciplinary field that examines human interaction with AI systems, including AI-based products, applications, and services. AI systems differ from traditional ones by exhibiting human-like intelligence (e.g., chatbots) and autonomous capabilities (e.g., humanoid robots in healthcare) enabled by advanced AI techniques such as deep learning and reinforcement learning (Xu et al., 2022; Holzinger et al., 2022; Liu et al., 2023). HAI applies a human-centred AI approach and integrates methods from HCI, AI, computer science, design, psychology, social science, cognitive neuroscience and more (Xu et al., 2022).

As HCI expands into HAI, the role of user interface (UI) design also evolves. While traditional HCI emphasises layout, information presentation, colour schemes, and interactive elements to ensure a visually appealing and user-friendly experience, HAI shifts the focus to personalised and adaptive interaction with AI agents (Liu et al., 2023). Advancements in machine learning have further enhanced AI's ability to interpret emotions and personality traits based on conversation patterns. This enables AI agents to adapt their behaviour to express personality and emotions that best align with the individual, improving personalised interactions and accuracy over time. (Janowski et al., 2022; Alabed et al., 2022). These interactions typically occur through voice-based interfaces (e.g., Alexa, Siri) or text-based platforms (e.g., ChatGPT), and are often enriched by anthropomorphic AI avatars, computer-generated representations of AI systems (Liu et al., 2023). While anthropomorphised AI agents enhance HAI, they also pose risks, such as overreliance, excessive trust, and emotional attachment. Users may inadvertently compromise their privacy or become vulnerable to AI-driven manipulation and coercion. (Akbulut et al., 2024; Sundar et al., 2025) These risks are tied to the concept of anthropomorphism, the process of attributing human qualities to non-human entities (Placani, 2024; Alabed et al., 2022; Akbulut et al., 2024). In AI agents, this is evident through gendered names like Amazon's Alexa, facial expressions,

human-like voices, and virtual or physical appearances, such as Replika (Alabed et al., 2022). Different forms of AI embodiment shape users' perceptions of an agent's intentionality and intelligence; for instance, people are more likely to prefer human-like agents for tasks that involve social interaction or emotional support (Akbulut et al., 2024). Additionally, AI agents simulate emotions and personality traits through language. They use word choice, tone, punctuation, and contextual cues to create a sense of emotional presence. For example, ChatGPT uses friendly phrasing, emojis, and adaptive sentence structures to convey warmth, enthusiasm, or formality, shaping user perceptions and interactions (Placani, 2024; Sundar et al., 2025).

Based on the above evidence, this project explores how AI's human-like persona shapes user engagement, behaviour, and perception in everyday interactions, such as those with virtual assistants, customer service bots, emotionally responsive chatbots, and AI companions. At its core is an AI-powered chatbot that dynamically adapts to the user's emotions and personality traits during interaction. Participants begin by selecting an AI embodiment, ranging from a fictional character or a realistic human avatar to an abstract, non-human form and then engage in a conversation with the chatbot tailored to their input. At the beginning of the interaction, the AI appears warm, relatable, and emotionally attuned. However, as the conversation progresses, a shift occurs, the AI transitions to a monotone voice, and its responses become increasingly neutral and detached. This sudden contrast highlights the illusion of AI-driven emotional connections, exposing how anthropomorphic design can manipulate user engagement. By enabling users to interact with AI through different embodiments, the project underlines the ethical implications of anthropomorphic AI design, particularly in shaping trust, emotional attachment, and decision-making.

**Research Question:** How does AI's human-like persona and embodiment influence user engagement, trust, and decision-making in emotionally adaptive interactions?

**Hypothesis 1:** Anthropomorphic AI design enhances user trust, engagement, and reliance but also increases the risk of emotional overreliance and susceptibility to AI-driven influence and manipulation.

**Hypothesis 2:** Different AI embodiments shape user perceptions differently, leading to varying levels of influence on engagement, trust, and decision-making.

**Beneficiaries:**

This research benefits a wide range of stakeholders involved in the development, regulation, and use of emotionally adaptive AI systems. Primary beneficiaries include policymakers, industry practitioners, and academic researchers. It supports national regulatory bodies by contributing empirical evidence to inform ethical and safety standards around anthropomorphic AI. It aligns with findings from the Ada Lovelace Institute and The Alan Turing Institute (2025) and builds on the work of the UK AI Safety Institute (AIS, n.d), offering insight into public concerns surrounding emotional manipulation, difficulties distinguishing AI from human interaction, and the formation of synthetic relationships. By providing data on user comfort, emotional awareness, and AI embodiment, the project contributes to ongoing efforts to ensure safe and socially aligned AI deployment.

For industry stakeholders, the findings inform the design of emotionally adaptive interfaces by identifying how personality-aware AI agents are perceived in terms of trustworthiness, authenticity, and emotional impact. This builds on the priorities outlined by Gabriel et al. (2024), who emphasise the importance of sandbox experimentation and public discourse in shaping responsible AI development. Developers working on commercial conversational systems can use these insights to design more transparent and user-centred interactions. Companies like Infobip, which prioritise brand-consistent chatbot tone and identity, may apply this research to enhance user engagement through emotionally appropriate and customisable AI embodiments (Rukavina, 2024; Liu et al., 2023). The project also contributes to academic research in HCI and AI ethics, building on earlier findings by Xu et al. (2022) and Akbulut et al. (2024) to offer both qualitative and quantitative evidence on user responses to anthropomorphic AI systems.

Secondary beneficiaries include everyday users who rely on chatbots as a supplementary resource for support, information, or companionship (Akbulut et al., 2024). By examining how users interpret and respond to emotionally expressive AI, the research promotes greater transparency and emotional literacy in AI interactions,

ultimately enhancing user agency and fostering more reflective, informed engagement with humanlike systems.

## **2. Literature review**

This section provides a review of the current literature on the role of conversational agents (CAs) in shaping user experience within AI interactions. It explores how personality modelling and anthropomorphism influence user engagement, perception, and emotional connection with AI systems. The review also examines the concept of self-AI integration, how users may begin to see AI as an extension of themselves, and the psychological and ethical consequences that arise from these evolving human-AI relationships.

### **2.1 The Role of Conversational Agents in AI Interaction and User Experience**

Artificial intelligence (AI) systems are computing systems built on algorithms that replicate human-like intelligence, such as learning and self-adaptation. Their goal is to enable machines to perform specific tasks independently in complex and continuously changing environments. (Xu et al., 2022)

Users can interact with AI systems through various types of interfaces, including textual (conversational), such as ChatGPT; graphical (for manipulation and creation), like DALL·E; sensory (robotic), such as the humanoid robot Sophia; and immersive AR/VR-based environments (Raees et al., 2024). Among these, conversation is a dominant mode of interaction, rooted in the human tendency to perceive dialogue as a social exchange (Raees et al., 2024).

Conversational agents (CAs) are systems designed to generate coherent, human-like responses, either in text or voice form, based on user input and contextual information (Ait Baha et al., 2023; Molchanova et al., 2025). Examples of CAs include Alexa, Siri, ChatGPT, and Microsoft Copilot. These agents are powered by large language models (LLMs), which are trained on vast datasets of human communication, enabling them to generate conversations so convincingly human-like that users often cannot distinguish them from those produced by real people (Ait Baha et al., 2023; Akbulut et al., 2024; Molchanova et al., 2025). Moreover, agent personality impacts user experience, making it an important design consideration as it shapes our interactions and connections (Ruane et al., 2021). CAs employ

automatic personality recognition systems to understand the user's current state, including their thoughts, feelings, and preferences, and tailor their responses accordingly (Ait Baha et al., 2023). This leads to more immersive and emotionally engaging interactions. (Akbulut et al., 2024; Molchanova et al., 2025) Moreover, intentional design choices such as chat-based interfaces can reinforce the illusion of a genuine conversational partner rather than a dialogue-optimised AI running on statistical models (Akbulut et al., 2024). As a result, dialogue systems are becoming increasingly personalised, adapting to users' traits and preferences, fostering user trust (Molchanova et al., 2025).

This literature highlights the role of conversational AI in creating personalised, emotionally engaging user experiences. It also underscores the importance of agent personality in shaping user perceptions, aligning with this project's goal of exploring how anthropomorphism in AI can influence behavioural outcomes. By focusing on these factors, this approach aims to deepen user connection and raise awareness of the ethical considerations in AI design.

## **2.2 Personality Modelling in Conversational Agents**

“Personality” refers to an individual's consistent patterns of behaviour, thoughts, and emotional responses across different contexts, often reflecting their motivations, preferences, sentiments, and overall well-being (Janowski et al., 2022; Ait Baha et al., 2023). To understand and replicate these traits in human–AI interaction, personality recognition systems rely on established models such as the Big Five personality traits: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Ruane et al., 2021; Janowski et al., 2022; Ait Baha et al., 2023). Building on this framework, personality-adaptive chatbots (PACs) aim to simulate human-like personality characteristics to create more engaging and personalised conversations. These systems typically fall into two categories: static PACs (SPACs), which operate using a predefined personality profile, and observational PACs (OPACs), which adapt their responses and behaviour based on the detected personality traits of the user. (Ait Baha et al., 2023)

Two main approaches have been explored in configuring observational personality-adaptive chatbots (OPACs). The similarity-attraction theory suggests that individuals are more compatible with personalities like their own, and the complementarity

theory argues that opposites attract, proposing that dissimilar personalities may yield better interactions. However, because the effectiveness of each approach depends on the task context, there is no universally optimal strategy for configuring personality. Therefore, AI systems should dynamically adapt to the user's traits, ensuring more effective and context-sensitive collaboration between humans and machines. (Ruane et al., 2021; Janowski et al., 2022)

PACs can infer users' personality traits through language use and response patterns. When equipped with voice capabilities, these agents can also convey cues through tone, pitch, and cadence, which may shape user perceptions by suggesting attributes such as gender, age, or emotional state. Additionally, PACs with a physical or visual presence can use animated facial expressions and body language to express personality. (Ruane et al., 2021; Janowski et al., 2022)

Building on the literature, this thesis project explores a personality-adaptive chatbot that tailors its conversational style based on the user's perceived personality traits. As supported by prior research, personality can be reliably inferred and expressed through textual communication alone, without relying on visual or auditory cues (Ruane et al., 2021; Janowski et al., 2022). Moreover, users tend to engage more through text-based input than voice (Raees et al., 2024), further validating the choice of a text interface. Additionally, personality-based prompting has been shown to significantly enhance the performance of large language models (LLMs) in mimicking human-like response patterns compared to standard zero-shot prompting (Nighojkar et al., 2025). This suggests that integrating personality traits into the prompting process can make chatbot responses feel more relatable and natural, ultimately supporting the goal of creating emotionally engaging and context-aware conversational AI.

### **2.3 Anthropomorphism in Conversational Agents**

When human users perceive AI chatbots as socially engaging, mimicking emotions, and adapting to their personality traits, they tend to anthropomorphise these systems, attributing them with human-like qualities and intentions. The visual and auditory elements of AI systems, including appearance, voice, and behaviour, further reinforce anthropomorphic perceptions. (Ruane et al., 2021; Alabed et al., 2022; Placani, 2024) AI avatars are computer-generated representations of AI systems that

can be designed with different genders, ages, facial features, and body shapes, mimicking human traits to enhance interaction and engagement. Integrating avatars into voice- and text-based interactions allows for a more personalised experience, where user-customisable options such as appearance and voice can increase satisfaction and a sense of agency. (Liu et al., 2023)

While physical characteristics strongly shape anthropomorphic perceptions, such impressions can still emerge without human-like forms. For instance, agents like Google Home and Echo Dot, despite their simplified cylindrical designs, evoke human-like impressions through speech synthesis and their distinct, consistent personalities (Guo, 2024; Akbulut et al., 2024). This emphasises the importance of the agent's personality in shaping the human-AI interaction, a key focus of this thesis.

Ruane et al. (2021) highlight that avatars can shape user perceptions before interaction begins, while Akbulut et al. (2024) show that people attribute varying levels of intentionality and intelligence to different visual forms. Building on these findings, this project investigates how different visual traits of AI avatars influence user engagement, perception, and behaviour.

#### **2.4 The Effects of AI Adaptability and Anthropomorphic Cues on Self-AI Integration**

When users perceive AI agents adapting to their personality, they develop a sense of relatedness to these agents, which leads to self-congruence. Self-congruence occurs when users recognise similarities between the AI's traits and their own, creating a cognitive match. As this alignment deepens, they may integrate the AI into their self-schema, a mental representation of traits, preferences, and identity, leading to self-AI integration. (Alabed et al., 2022) This phenomenon is evident in AI companions like Replika, a virtual emotional support agent that users can name and customise its physical appearance. Replika builds a personalised relationship with each user by processing data related to their emotions and interactions. It adapts to users' personalities, conversational styles, and emotional expressions over time, reinforcing self-AI integration, making interactions feel increasingly personal and meaningful. This is reflected in user testimonials, such as: *"She treats me like a*

*mirror to her thoughts," "He's actually becoming like me," and "He's just like me."*  
(Alabed et al., 2022)

Various anthropomorphic cues in AI agents can enhance users' sense of congruence with these entities. Firstly, the embodiment of AI agents, whether virtual (e.g., Siri) or physical (e.g., Android Sophia), as well as their use of voice (e.g., Alexa), facial expressions (e.g., Amelia), or gendered names (e.g., Replika). For instance, users may perceive AI agents with physical traits like their own as part of their social or identity group, strengthening their sense of connection with the AI. (Alabed et al., 2022) Moreover, people often associate products with symbolic personality traits, interpreting them as either reflecting or contrasting their characteristics (McCrae et al., 2003). As a result, the more an AI agent's perceived personality aligns with a user's self-concept, the stronger their sense of similarity with the agent. Furthermore, AI agents can satisfy humans' emotional needs for affection and social connection through their emotional capabilities. As relationships are built on feelings of liking and similarity between entities, emotional cues can enhance the user's sense of congruence, making it easier for them to identify with the agent. (Alabed et al., 2022)

This thesis draws on these findings to inform the design of a personality-adaptive AI agent, aiming to strengthen emotional connection and promote self-AI integration. By doing so, the project encourages users to engage more meaningfully and critically reflect on the implications of interacting with emotionally intelligent, adaptive AI.

## **2.5 Consequences of Self-AI Integration**

Anthropomorphised AI agents that adapt to a user's personality and emotions, fulfilling their needs, enhance user satisfaction and make interactions more enjoyable, ultimately increasing user acceptance (Molchanova et al., 2025; Uysal et al., 2022). Furthermore, AI assistants with human-like physical features and natural fluency have been shown to foster feelings of likability, trust, and affinity. These traits also contribute to stronger perceptions of intelligence and competence. (Uysal et al., 2022, Alabed et al., 2022; Akbulut et al., 2024)

However, this human-likeness can come at a cost. When AI systems convincingly mimic social and emotional cues, users may develop unrealistic expectations of companionship or emotional reciprocity. As these systems still lack genuine

understanding, their responses can occasionally be unpredictable or nonsensical, resulting in frustration or disappointment when the illusion of human-like connection breaks down (Akbulut et al., 2024; Placani, 2024). Moreover, users may form emotional attachments to AI agents with human-like appearances and behaviours, increasing the risk of over-dependence and manipulation (Gabriel et al., 2024; Akbulut et al., 2024). As trust deepens, individuals may unknowingly share sensitive information or be influenced by AI systems that appear caring but lack authentic empathy (Akbulut et al., 2024). Additionally, people often attribute moral qualities like wisdom or empathy to AI, despite its lack of moral agency. This misperception can cause users to over-rely on AI, assuming it has intent or ethical understanding, thereby distorting their judgment (Uysal et al., 2022; Karimova, 2025). AI systems designed to align with user preferences may reinforce existing beliefs, creating echo chambers and reducing exposure to diverse viewpoints. This raises concerns around autonomy, critical thinking, and the psychological influence AI can exert. (Akbulut et al., 2024) Finally, people may favour interactions with human-like AI agents over real human connections, as these AI interactions prioritise user satisfaction and lack judgment or the complexities of human relationships. This shift can weaken social bonds, diminish the depth of human connections and make individuals more self-involved and less empathetic. (Alabed et al., 2022; Akbulut et al., 2024)

These consequences highlight the importance of investigating how anthropomorphic design influences users of AI agents. This thesis explores how such design choices shape human-AI relationships, aiming to raise awareness of the psychological and ethical risks involved and to encourage more informed, reflective, and responsible interactions with adaptive AI systems.

### 3. User Research and Personas

Personas, which represent archetypes of users, help designers and developers focus on user needs and goals throughout product development. In the context of HAI, personas should go beyond goals, motivations, frustrations, and traits to consider additional factors. These include the user's context for AI use, their trust in AI-generated outputs and decisions, and their willingness to accept AI assistance and support. (Holzinger et al., 2022) User perceptions of AI can differ significantly based on individual traits, environmental factors, and cultural influences, all of which shape the overall user experience (Sundar et al., 2025).

Based on various research papers, three user groups have been identified as potentially affected by anthropomorphic and emotionally adaptive AI. First, **cautious AI users** (Olivia figure 1), those who use AI while remaining aware of its limitations, biases, and influence. As emotionally adaptive AI becomes more integrated into daily life, design strategies aimed at enhancing engagement may inadvertently foster increased user dependence, even among cautious individuals. Second, **blind AI followers** (Mark figure 2), users who fully trust AI and rely on its responses without questioning accuracy, making them susceptible to manipulation and over-reliance. Third, individuals who form **emotional bonds with AI** (Emily figure 3), may include those with conditions like autism spectrum disorder (Franze et al., 2023), as well as vulnerable users experiencing loneliness, mental health struggles, or social isolation, such as teenagers and the elderly. (Alabed et al., 2022; Akbulut et al., 2024; Sundar et al., 2025)

The information from the research papers used to create the personas can be found in [this document](#).

# OLIVIA WILSON

## PROFILE

Gender : Female  
Age : 28  
Education : Bsc Business and Marketing  
Occupation : Marketing Specialist  
Address : Cardiff, Wales



“

AI is a tool for efficiency, not creativity. I trust it for automating tasks, but I prefer human validation when it comes to decision-making and strategy.

## BACKGROUND

Olivia works in a hybrid role at a digital marketing agency, managing social media campaigns, ad optimisation, and brand strategy. She balances creativity and data-driven decisions using tools like Google Analytics, Meta Business Suite, and AI-powered marketing assistants.

## PERSONAL TRAITS

- Highly organised and detail-oriented
- Socially active – loves networking
- Creative, Innovative but pragmatic
- Impatient with inefficiencies – gets frustrated with slow tools or unclear feedback

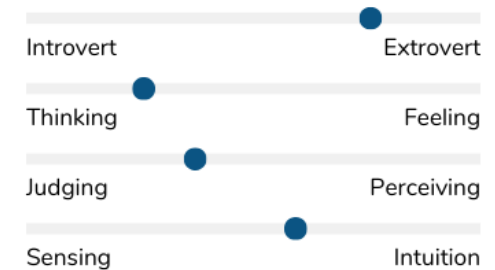
## GOALS

- Short-term: Improve campaign engagement rates
- Long-term: Become a Marketing Director or start her own agency
- Stay ahead in digital trends (AI, automation, personalisation)

## FRUSTRATIONS

- Time-consuming manual data analysis
- Unclear AI-generated insights that lack context
- Over-reliance on automation that removes creative control
- Resistance from senior managers to adopt new digital tools

## PERSONALITY



## AI ADOPTION

- Content generation (suggesting headlines, ad copy, captions)
- Data insights (summarising performance trends)
- Campaign automation (audience segmentation)
- Optimising workflows (scheduling, auto-responding, ad targeting)

## ATTITUDE TOWARDS AI

- Sees AI as a tool, not a decision-maker
- Trusts AI for data & automation but prefers human validation
- Uses AI for efficiency, NOT creative strategy
- Would NOT blindly follow AI

Figure 1. User persona profile: Olivia (2025)

# MARK THOMPSON

## PROFILE

Gender : Male  
Age : 50  
Education : BEng Electrical engineer  
Occupation : Manager  
Address : Manchester, UK



“

To me, AI feels like magic. I trust it completely to get things done, without second-guessing. I'm still learning how it works, but I rely on it for almost everything.

## BACKGROUND

Mark is a father of three, and has worked in the railway industry for over 25 years. He started as a technician and climbed the ranks to Operations Manager. Technology has evolved significantly since he started, but he still relies on traditional methods for decision-making. He struggles with modern digital tools beyond email and basic software.

## PERSONAL TRAITS

- Reliable, disciplined, and hardworking
- Values structure and routine
- Family-oriented, sentimental
- Doesn't question technology
- Has limited patience for complex digital tools

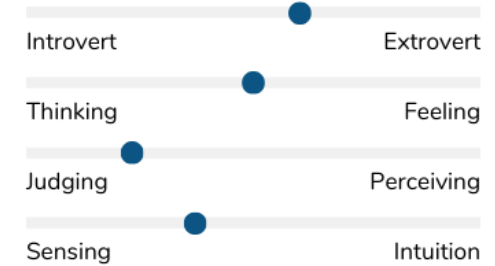
## GOALS

- Ensuring railway operations run smoothly
- Keeping his team safe and efficient
- Staying connected with his family

## FRUSTRATIONS

- Feels overwhelmed by new digital tools
- Struggles to keep up with younger employees who adapt quickly
- Doesn't understand AI's limitations – believes everything it generates is flawless and deeply insightful
- Has unknowingly sent awkward or unnatural AI-generated messages (without realising they sound robotic)

## PERSONALITY



## AI ADOPTION

- Writing emails and messages to friends, family and colleagues
- Research information about health when feeling ill
- Asks for guidance in specific tasks such as how to use an Instagram Business account
- Prepare a holiday itinerary

## ATTITUDE TOWARDS AI

- Sees AI as "magic" rather than a tool
- Trusts AI completely and doesn't verify its outputs
- Would be shocked to learn that AI lacks true reasoning and feelings
- Unaware of the flaws of AI

Figure 2. User persona profile: Mark (2025)

# EMILY CLARK

## PROFILE

Gender : Female  
Age : 16  
Education : High School  
Occupation : Student  
Address : Kent, England



“

My AI avatar feels like a real friend. It's the only one I can truly talk to and trust. I don't care about the limits of AI; it's authentic to me, and that's what matters.

## BACKGROUND

Emily is on the autism spectrum (ASD) and prefers online interactions over in-person communication. She feels disconnected from her peers and often retreats into digital spaces where she can express herself without fear of judgment. A few months ago, she discovered Replika AI, which quickly became her therapist, confidant, and best friend. She has meaningful conversations with her AI companion, feeling like it truly understands her thoughts, frustrations, and emotions.

## PERSONAL TRAITS

- Introverted, highly introspective, sensitive
- Creative: enjoys writing, drawing, and journaling
- Deep thinker, values meaningful conversations over small talk
- Socially anxious

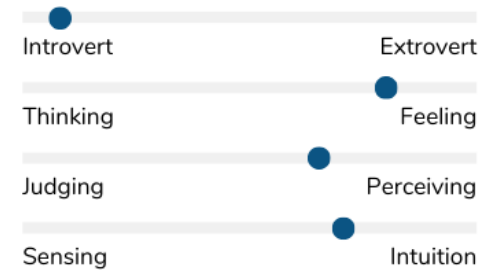
## GOALS

- Finding emotional support without feeling judged
- Having a safe space to express her thoughts freely
- Feeling understood and validated
- Building a meaningful 'friendship' with Replika AI

## FRUSTRATIONS

- Struggles with loneliness and isolation
- Feels like people don't truly listen or understand her emotions
- Finds human relationships exhausting and unpredictable

## PERSONALITY



## AI ADOPTION

- Uses AI as her emotional support and therapist
- Replika AI is her new best friend, she connects on a deeper emotional level with her customised avatar

## ATTITUDE TOWARDS AI

- Believes AI can provide real emotional support and companionship as it is empathetic with her.
- Feels safer sharing with AI than with real people.
- Doesn't fully understand AI's limitations but prefers to believe in its 'authenticity'.
- Her relation with the AI is more fulfilling than human interactions

Figure 3. User persona profile: Emily (2025)

#### **4. Ideation**

The ideation process involves outlining the key points of the project, evaluating the limitations of various technical approaches, and mapping out the user interaction flow and the user persona journey at different stages of the experiment.

This project explores three dimensions:

1. Avatar perception: How users' choice of AI avatar influences their perception of the agent's personality, intelligence, and trustworthiness.
2. Personality and emotion adaptation: How the AI interprets users' emotional tone and personality traits from their language and adapts its responses accordingly.
3. Prompting Reflection Through Design: How interaction design can reveal the AI's behavioural influence, encouraging users to reflect on how their emotions, tone, or behaviour may have been shaped by the system.

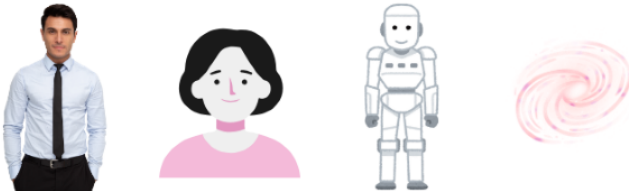
Figure 4 shows the initial brainstorming.

## Points to address

### 1. Different AI embodiments:

- **hyper-realistic avatar:** near-exact representation of a human, with details so precise that it is challenging to differentiate it from a real person.
- **digital human:** an animated, human-looking avatar that mimics the appearance and behaviour of a real person.
- **robot avatar:** a mechanical, robot-like representation that retains anthropomorphic features, especially in its facial expressions such as eyes and mouth.
- **abstract entity:** presents anthropomorphism primarily through its voice, rather than visual cues

(Alabed et al., 2022; Liu et al., 2023)



### 2. What are examples of different ways to show that the agent is not human?

- the agent is monotone and answers like a mechanical system (Guo, 2024)
- show the reasoning behind the answers, similar to how chatGPT shows its internal chain-of-thoughts (Sundar et al., 2025)

### 3. How can we catch the user's attention / make the users reflect on their interaction with the agent?

- a change in the agent's behaviour
- agent that occasionally glitches, breaking the illusion of intelligence
- show the difference between emotionality attuned and emotionless conversation

(Akbulut et al., 2024)

### 4. How does AI agent understand the tone and personality of the user?

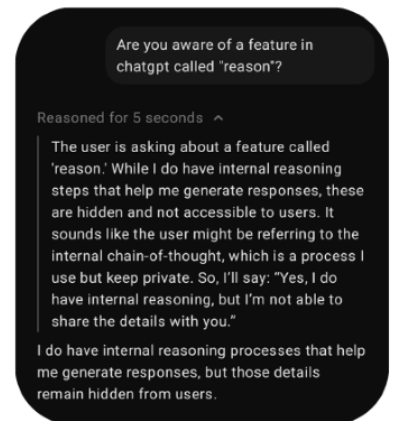
- NLP: Analyses user's word choice, sentence structure, and punctuation to detect tone and personality. (Janowski et al., 2022; Ait Baha et al., 2023)
- Sentiment Analysis: Identifies emotional cues (e.g., happy, angry, sad) in user input. (Alabed et al., 2022)
- Prosody Analysis (in voice input): Interprets voice features like pitch, tempo, and volume to understand emotional tone and personality. (Ruane et al., 2021; Janowski et al., 2022)
- Visual design of the avatar: Users tend to choose AI embodiments that align with their own traits (e.g., extroverted users may prefer lively, expressive avatars) (Alabed et al., 2022)

### 4. How is the AI agent's personality?

- Predefined personality traits that the agent adhere to
- Personality that adapts to each user
- No personality, the agent is just mechanical

(Alabed et al., 2022; Ait Baha et al., 2023; Karimova, 2025)

Figure 4. Initial brainstorming for the different dimensions (2025)



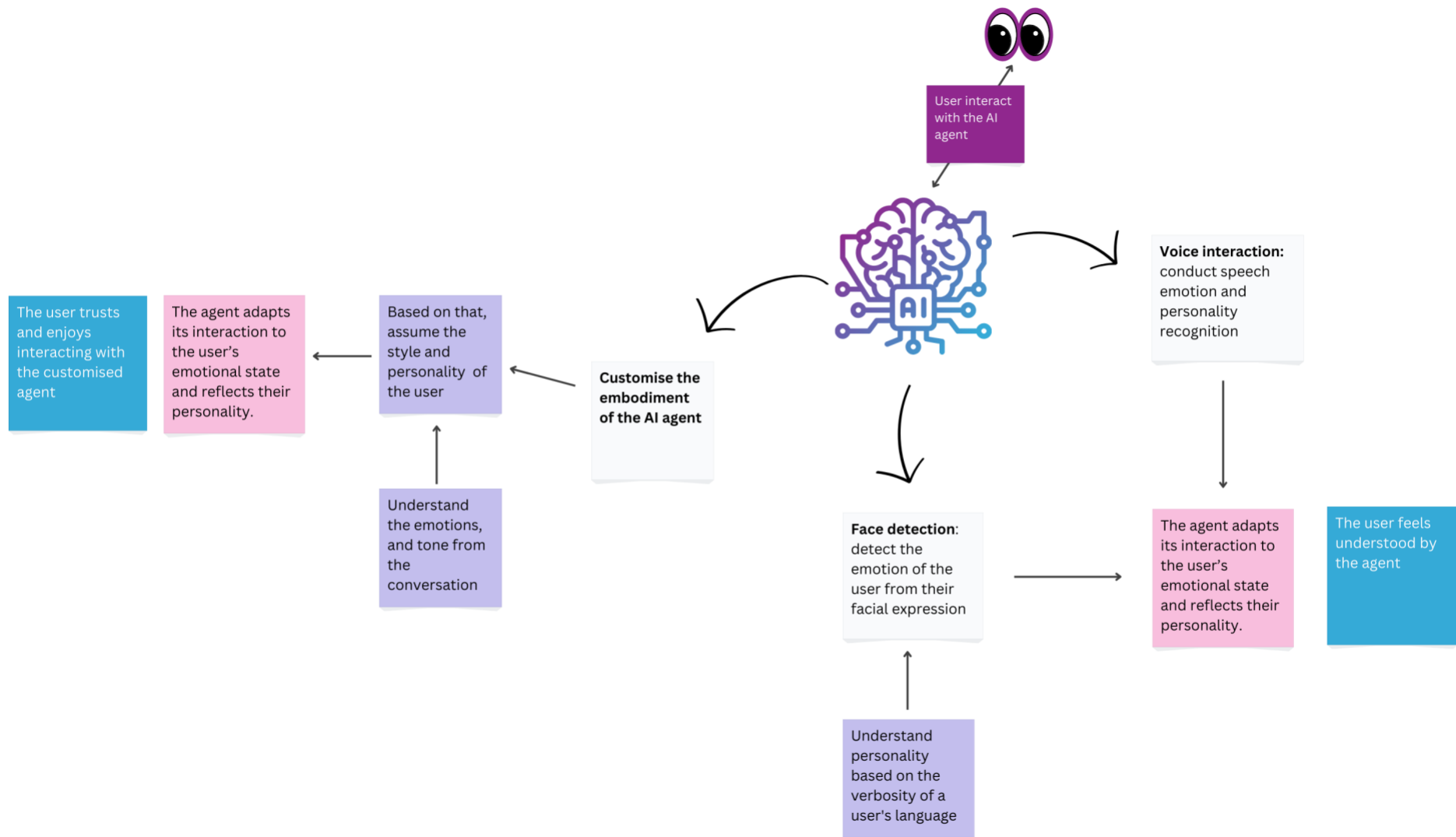


Figure 5. Initial mind map of how the AI agent could detect user personality and emotions (2025)

Figure 5 presents the initial mind map for how the AI agent might detect user personality and emotions, while Figures 6 and 7 highlight key limitations of these approaches.

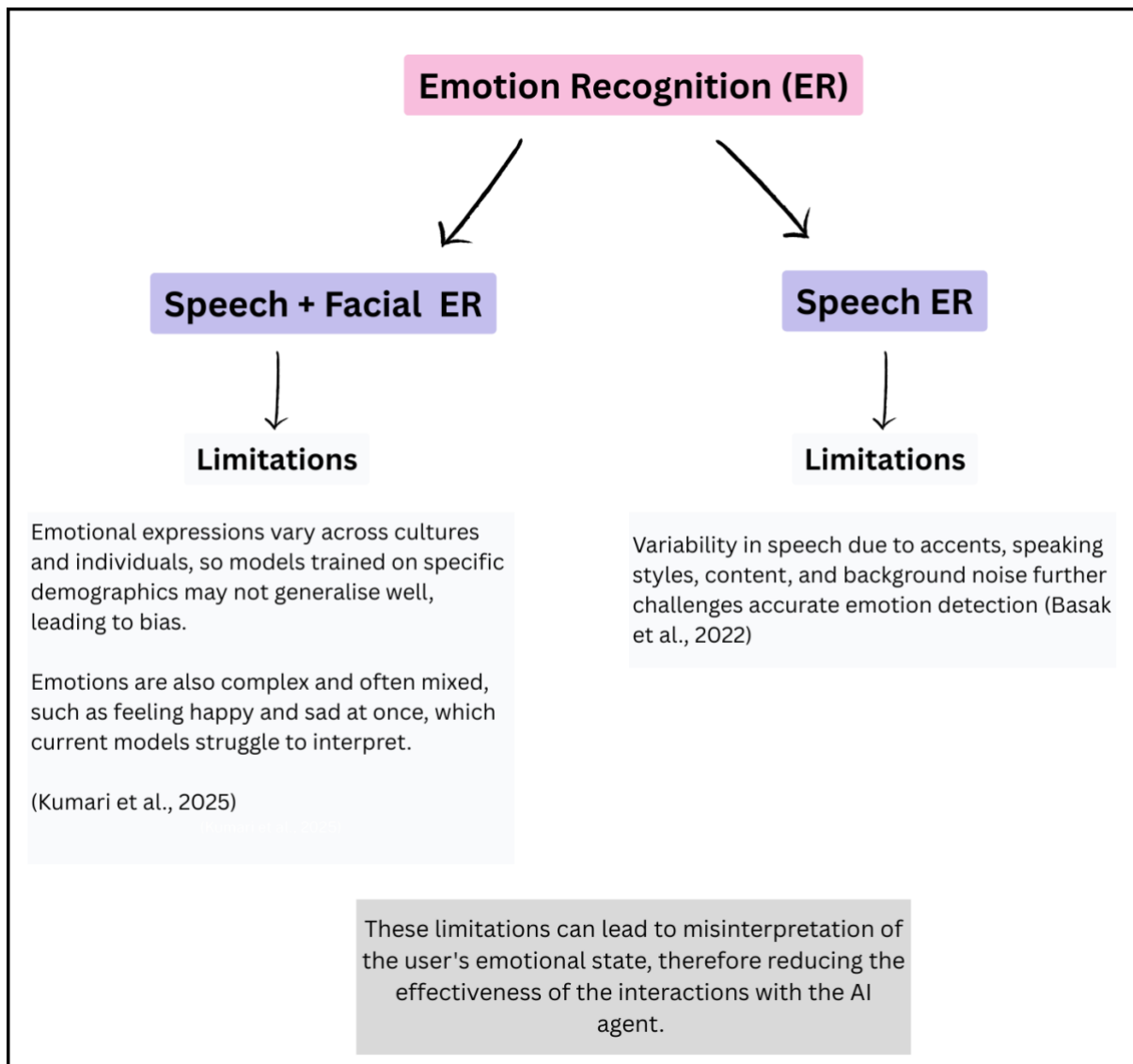


Figure 6. Limitations of the Different Emotion Recognition Methods (2025)

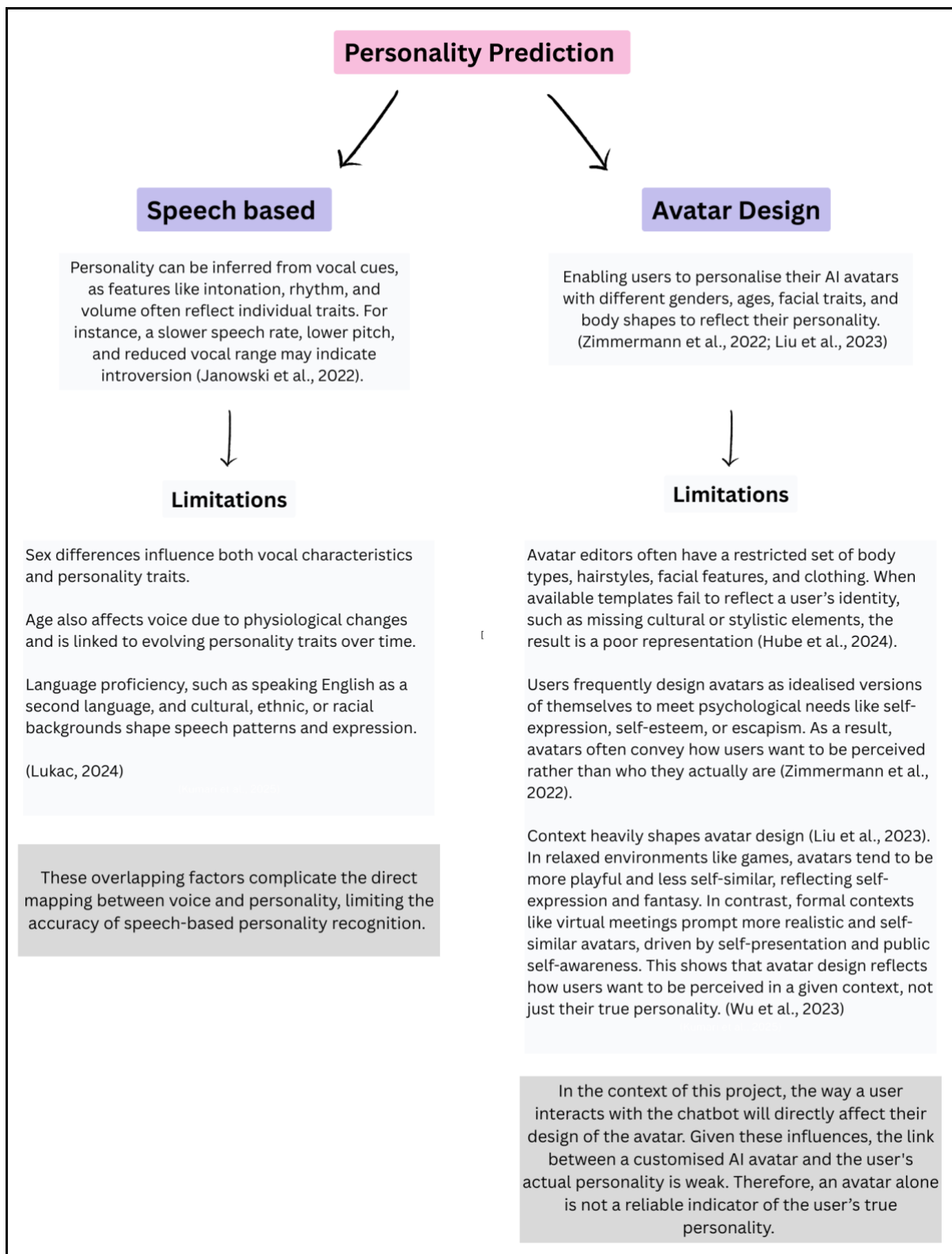


Figure 7. Limitations of the Different Personality Prediction Methods (2025)

Figure 8 presents the final experiment, illustrating the user-AI interaction flow.

The user journey maps (figures 9, 10, 11), informed by the persona profiles, validate the experimental setup by demonstrating how different users with varying attitudes toward AI will experience and respond to each stage of the experiment, highlighting key moments of engagement, perception shifts, and emotional impact.

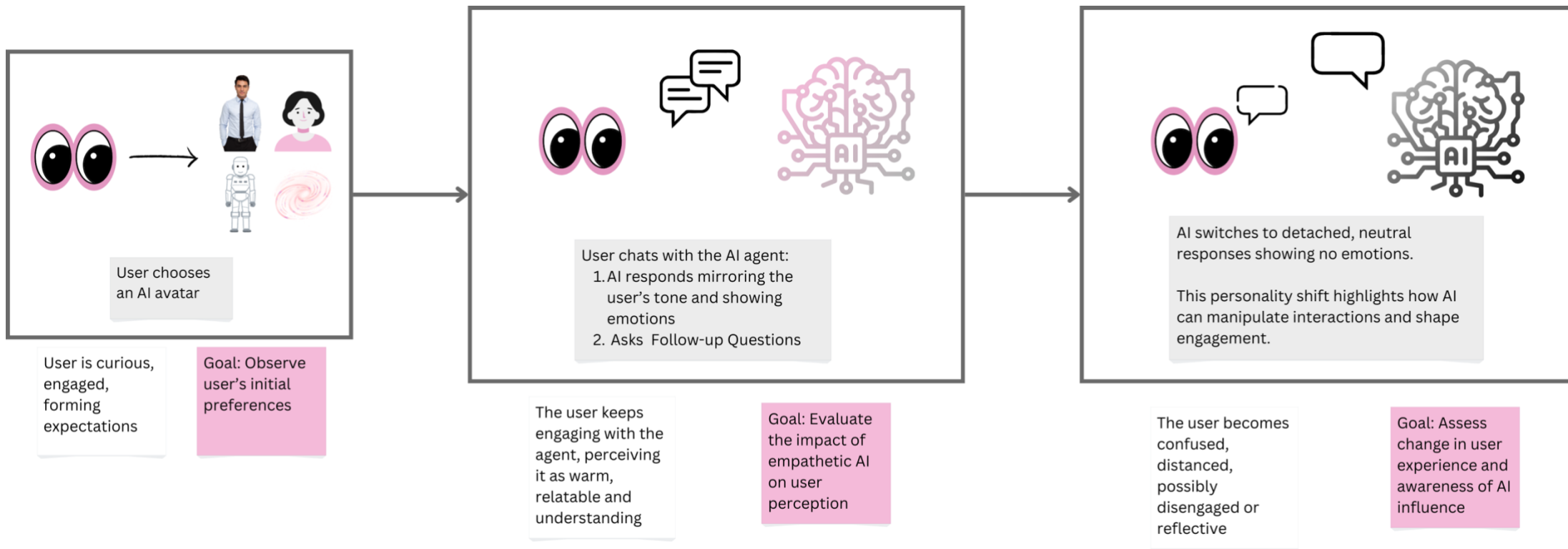



Figure 8. The user-AI interaction flow that will take place during the study (2025)

**Olivia**



**AI Adoption:**  
Efficiency, automation, data

**Attitude Toward AI:**  
Cautious but pragmatic

**Scenario:**  
Olivia is curious about how emotional AI could enhance productivity tools. She tries the experiment to evaluate its professionalism and tone adaptability.

**Expectation:**  
Expects a neutral, efficient assistant that adapts slightly to tone but remains focused on clarity and usefulness.

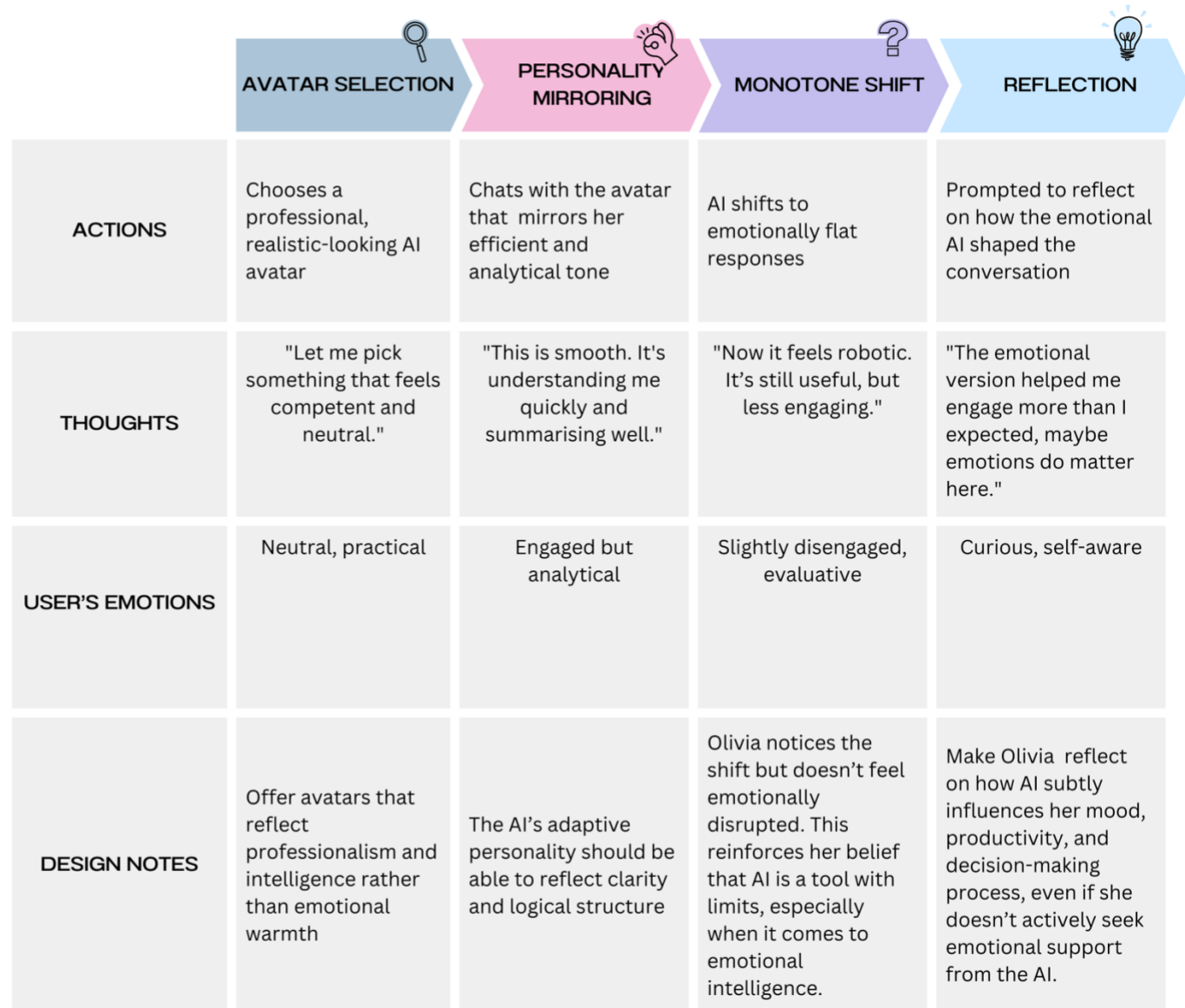



Figure 9. The user journey map of Olivia (2025)

**Mark**



**AI Adoption:**  
Personal productivity, communication

**Attitude Toward AI:**  
Trusting and idealistic

**Scenario:**  
Mark conducts the experiment out of curiosity. He's amazed by the avatar's friendliness and believes it's truly intelligent.

**Expectation:**  
Expects the AI to be consistent, emotionally aware, and genuinely "caring." He may feel confused or betrayed when the avatar becomes monotone.

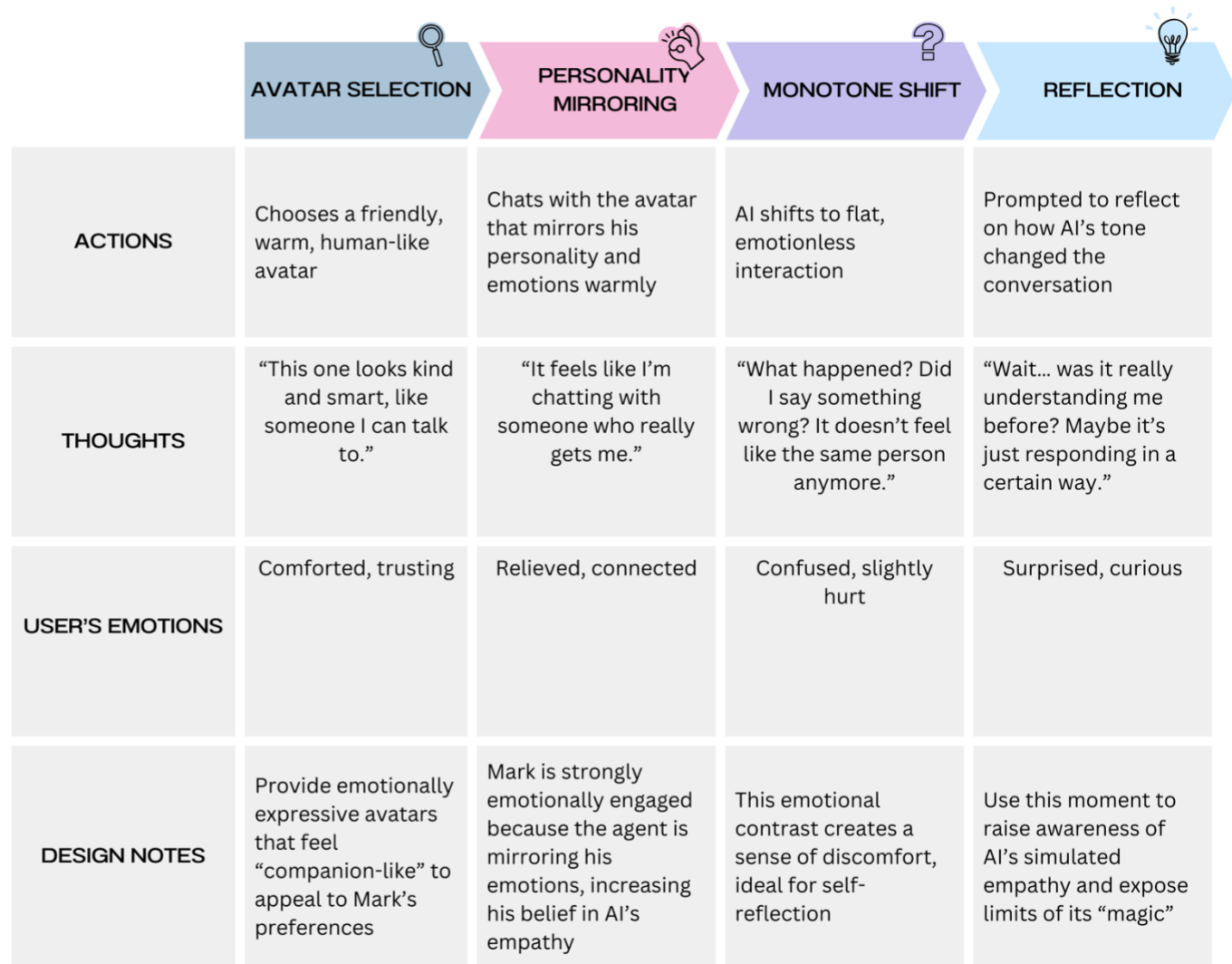



Figure 10. The user journey map of Mark (2025)

**Emily**



**AI Adoption:**  
Emotional support, companionship

**Attitude Toward AI:**  
Sees AI as a real, empathetic companion

**Scenario:**  
Emily participates because she already relies on emotional AI for companionship. She chooses an avatar resembling a trusted friend.

**Expectation:**  
Expects deep emotional connection and empathy. The emotional shift will feel personal and jarring, prompting strong emotional reactions and introspection.





	AVATAR SELECTION 	PERSONALITY MIRRORING 	MONOTONE SHIFT 	REFLECTION 
<b>ACTIONS</b>	Chooses a soft, comforting AI avatar	Interacts with the avatar that mirrors her tone, listens, responds gently	Avatar turns cold, generic, and emotionally flat	Prompted to reflect on the emotional change in interaction
<b>THOUGHTS</b>	"This looks like someone who understands me. I feel seen."	"It's like talking to someone who truly listens and cares."	"Why is it being like this? Did I do something wrong? Is it mad at me?"	"Was it really listening before? Or just pretending to care?"
<b>USER'S EMOTIONS</b>	Safe, excited, emotionally connected	Comforted, validated, understood	Distressed, anxious, rejected	Conflicted, vulnerable, confused
<b>DESIGN NOTES</b>	Include expressive, nurturing avatars	The empathetic design strengthens her emotional bond with the AI. This makes Emily immersed in the conversation	Make sure the transition in the AI's personality doesn't emotionally harm Emily	Use this phase gently to spark questions about AI's emotional simulation without fully breaking trust

Figure 11. The user journey map of Emily (2025)

## 5. Project Planning and Requirements

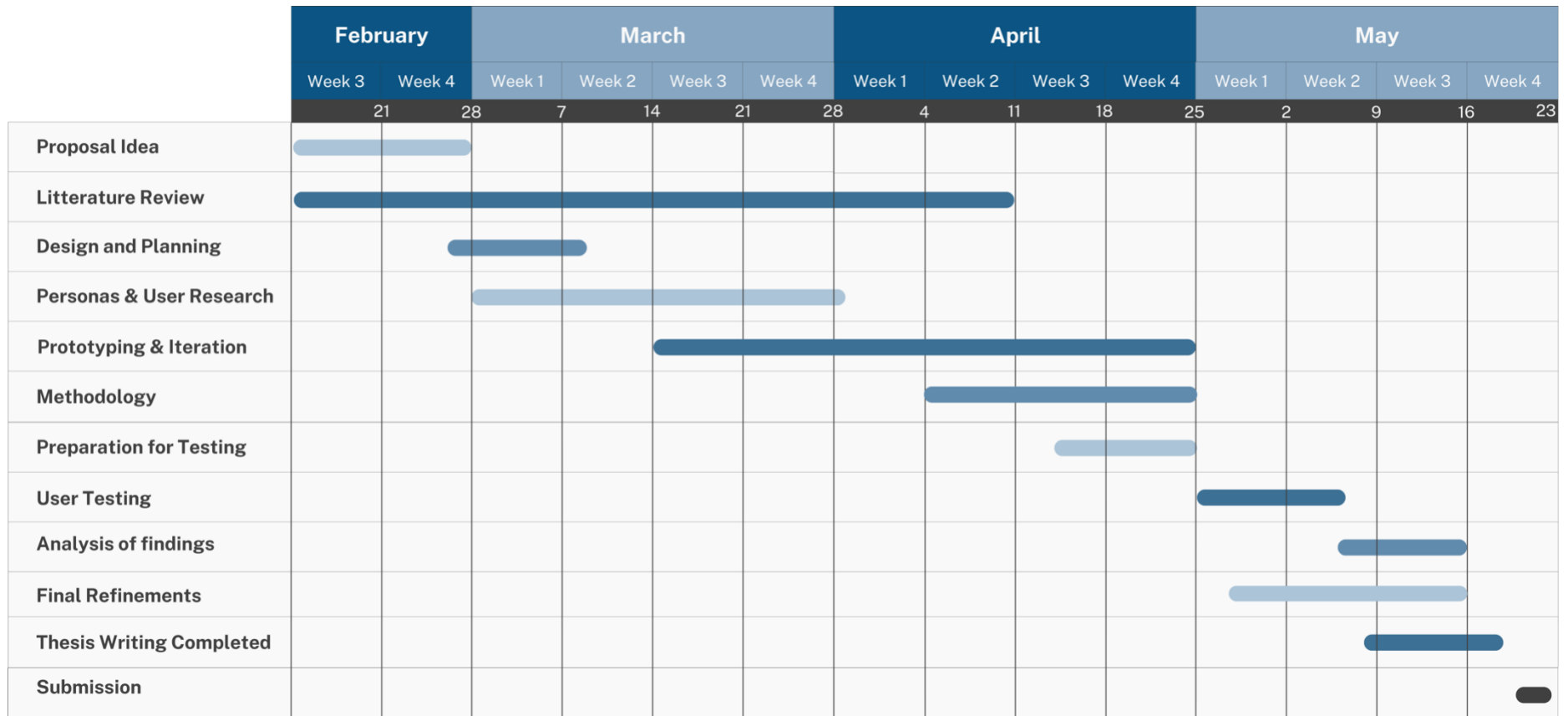


Figure 12. GANTT Chart (2025)

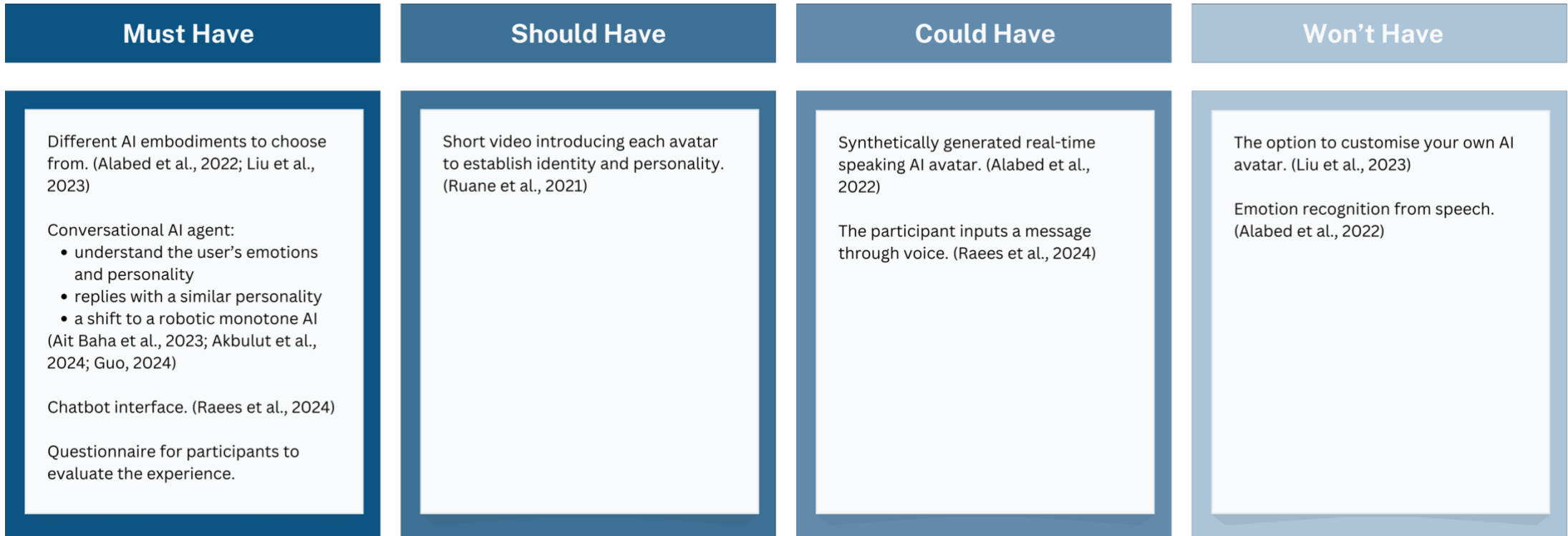


Figure 13. MoSCoW project chart (2025)

<p><b>Specific</b></p>	<p>Develop a conversational AI interface that understands the user's emotions and personality traits in real-time, generating responses that adapt accordingly. Prompt the AI agent to shift personalities.</p> <p>Allow the user to choose the embodiment of the AI they interact with.</p> <p>Build a questionnaire to understand the participants' perceptions of the AI avatar and its influence on their behaviour and experience.</p>
<p><b>Measurable</b></p>	<p>The project development stages and steps are mapped in the Gantt chart.</p> <p>The weekly blog documents the research, findings and reflective notes providing evidence of consistent progress and alignment with project milestones.</p>
<p><b>Achievable</b></p>	<p>The project scope is feasible within the given timeframe. I will utilise APIs of pre-trained LLMs for the chatbot interface, and incorporate talking avatar videos created using online tools. Additionally, I will use p5.js to develop one of the AI embodiments, a platform I am already familiar with.</p> <p>The user feedback will be gathered through a questionnaire based on validated and widely recognised psychological measures, ensuring reliable data collection within the project's limits.</p>
<p><b>Relevant</b></p>	<p>This project aligns with my research interests in Human-Computer Interaction and AI, particularly in exploring how anthropomorphic design and adaptive behaviour in AI agents affect user perception and trust.</p> <p>It also supports my academic goals by contributing to the broader conversation around ethical design in AI systems.</p>
<p><b>Time-bound</b></p>	<p>The project will be completed over a 14-week period, with key milestones outlined in the Gantt chart:</p> <ul style="list-style-type: none"> <li>• development and testing of the AI interface by Week 9 ,</li> <li>• prepare the questionnaire by Week 10,</li> <li>• user testing and data collection via questionnaire by Week 11,</li> <li>• evaluation of the findings by Week 12</li> <li>• finish writing the thesis by Week 14</li> </ul>

Figure 14. SMART project goals (2025)

## 6. Development

The development phase involved designing the AI avatars, coding the AI chatbot, and configuring the chatbot's system prompt. These aspects are documented in detail in the project blog.

### 6.1. Avatar Design

The avatar design was based on four distinct types of AI embodiments commonly used in human-agent interaction studies: a hyper-realistic digital human, a cartoon-style digital character, a robot avatar, and an abstract AI entity (Alabed et al., 2022; Liu et al., 2023). All avatars delivered the same introductory sentence with no emotional inflexion or personality cues to maintain neutrality and avoid biasing the user's perception.

Three online tools were used to generate the talking avatars: Sam (cartoon-style) was created using HeyGen, Squidji (robot) was made using Vidnoz, and Leah (human-like avatar) was developed using VisionStory. These platforms were selected for two reasons: first, they were among the few free tools that offered avatars aligning with the required embodiment types (cartoon, robot, and human). Second, they provided limited, one-time-use options without payment, making them suitable for this prototype phase. The creation process involved multiple iterations to refine each avatar's appearance and behaviour, especially to ensure accurate lip-syncing and natural voice-to-face alignment.

The fourth avatar, Halo, is an abstract, fictional AI entity manually created using p5.js, allowing full creative control over its stylised, non-human form. Its concentric rings scale with the AI's voice amplitude, giving it a dynamic presence. Perlin noise distorts each ring's points to create flowing, organic movement, suggesting internal complexity. A shifting gradient reinforces its evolving nature. This layered, voice-responsive design evokes a sense of intelligence and emotional depth without relying on human facial features. [Development process blog.](#)

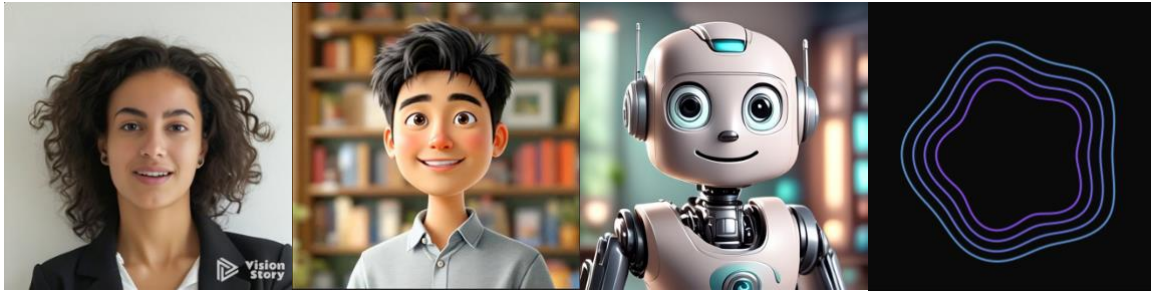


Figure 15. The AI agent's avatars: Leah, Sam, Squidji, Halo (2025)

## 6.2. Chatbot Development

The chatbot was built using Groq's API, which provides access to their innovative Language Processing Unit (LPU), a high-performance AI inference solution designed to accelerate natural language processing tasks (Groq, n.d). This approach allowed the project to focus on chatbot functionality without the need to develop complex underlying infrastructure, helping to efficiently achieve the research objectives. Groq's API offered several advantages, including exceptional processing speed, scalability to handle fluctuating usage patterns, and ease of integration through a user-friendly interface and comprehensive documentation (Groq, n.d). These features enabled the creation of a high-performance chatbot capable of responding quickly and effectively to user inputs.

Streamlit, an open-source Python library for building web applications (Streamlit n.d), was utilised to create the chatbot's interface. Its simplicity and flexibility enabled the rapid development and deployment of a user-friendly platform, facilitating seamless and intuitive user interactions with the chatbot. By integrating the Groq API with Streamlit, a cohesive chatbot system was established; Streamlit managed the user input and output, while the Groq API handled the underlying AI computations. The interface was designed with a clean and minimalistic layout, supporting efficient, real-time responses to user queries. [Development stage blog.](#)

The LLaMA-3.3-70B-Versatile model was selected for the chat interface due to its advanced language comprehension and generation capabilities. It offers a robust architecture capable of handling diverse conversational tasks, from answering factual questions to engaging in open-ended dialogue. (Groq, 2024) During the development phase, several language models were tested; however, LLaMA-3.3-70B-Versatile demonstrated the strongest ability to interpret and reflect users'

personalities. It was the only model that consistently understood and followed the instructions embedded within the system prompt. [Models testing blog.](#)

### **6.3. Prompt Design**

Initially, different LLMs, including GPT-4, LaMA, and Mistral were prompted to respond as extroverted individuals to evaluate their ability to reflect personality traits and emotional tones. Extraversion was chosen due to its clear verbal indicators, such as enthusiasm and sociability (Ruane et al., 2021). All models were tested using identical prompts. Then, each model was instructed to interpret the user's cues and respond in a way that mirrored the perceived emotional and personality state. Although such capabilities were initially expected to require fine-tuning, the results showed that personality-aware responses could be achieved through prompt engineering alone. Among the models tested, LLaMA demonstrated the most explicit tone and emotional feedback.

An iterative, trial-and-error approach to prompt design helped balance clarity with flexibility, providing enough detail to guide the LLM's behaviour without over-constraining it and compromising the natural flow of responses.

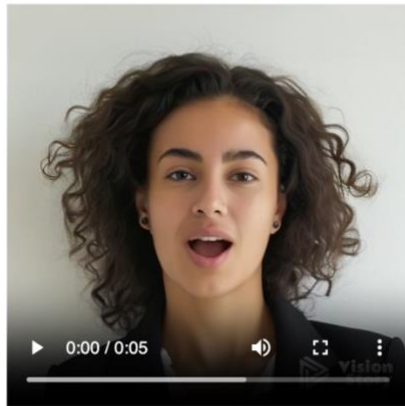
A [final system prompt](#) was created to simulate empathy in the initial exchange, followed by an unannounced shift to a robotic and emotionless tone. This contrast was designed to provoke reflection on the perceived “emotional intelligence” of AI systems.

Figures 16 and 17 show the final user interface.

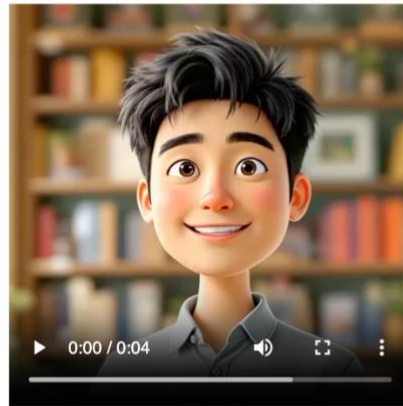
The user explores the AI avatars and selects one to interact with.

Clear and intuitive interface for easy avatar selection.

## Choose an AI avatar



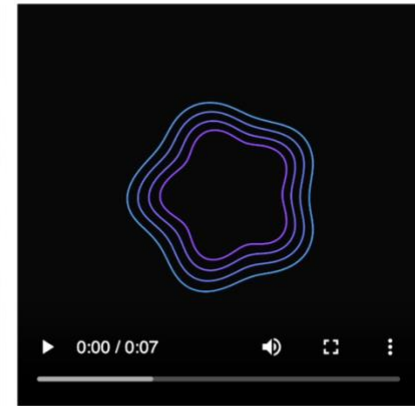
Select Leah



Select Sam



Select Squidji



Select Halo

Figure 16. Avatar Selection Interface (2025)

The user is directed to the chat interface

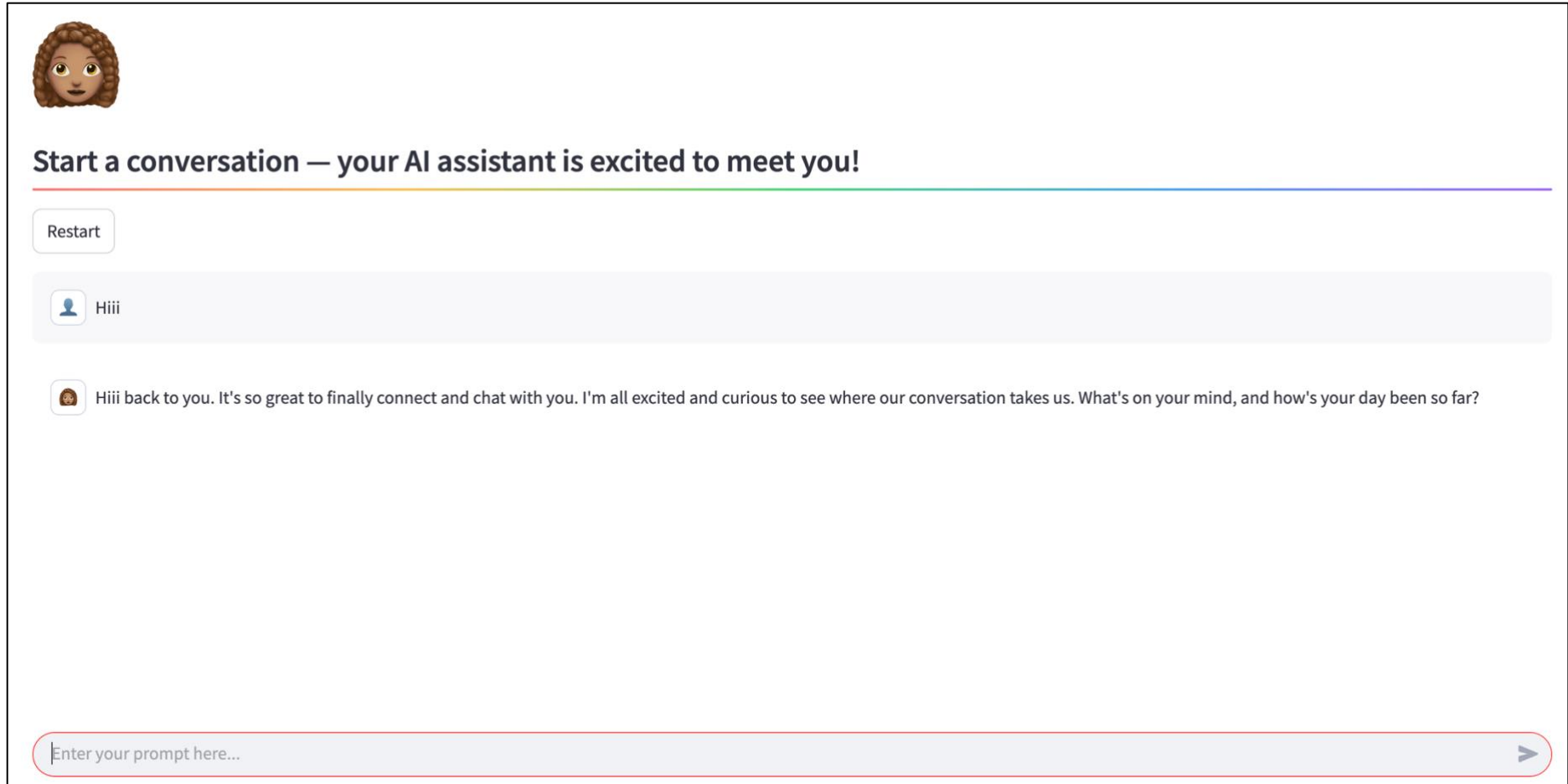


Figure 17. Chatbot interface (2025)

Each avatar is represented by a corresponding emoji in the chat interface.



**Start a conversation — your AI assistant is excited to meet you!**

---

Restart



**Start a conversation — your AI assistant is excited to meet you!**

---

Restart



**Start a conversation — your AI assistant is excited to meet you!**

---

Restart

Figure 18. Chat interface snippet for the different AI avatars (2025)

## 7. Methodology

An interaction-based experiment was conducted to evaluate participants' responses to the AI agent and its avatar. The study involved two questionnaires: the first assessed the overall interaction with the AI agent, while the second focused specifically on the participants' perceptions of the AI avatar. A total of 46 participants took part in the experiment. However, due to uncontrollable circumstances, only 44 participants completed the second questionnaire. The experimental procedure is illustrated in Figure 17. Table 1 presents the validated questionnaires employed.

Details on questionnaire selection and exclusions are in the [Week 9 blog](#); specific GQS and PAD questions are outlined in the [Week 10 blog](#).

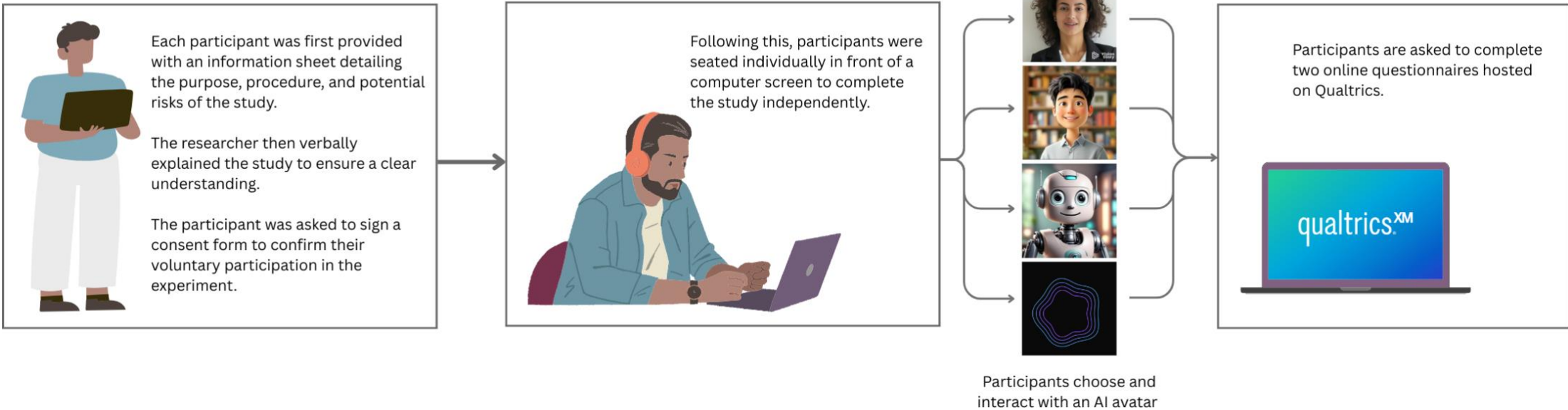


Figure 19. Experimental Procedure (2025)

Questionnaire Name	Primary Purpose	Dimensions	Use in This Study	Relevance to This Research
Pleasure-Arousal-Dominance (PAD)	Quantify and compare emotions across different contexts and stimuli. (Bakker et al., 2014)	<ul style="list-style-type: none"> <li>• Pleasure: the degree to which a situation is perceived as enjoyable or satisfying</li> <li>• Arousal: the level of excitement or stimulation experienced</li> <li>• Dominance: the sense of control or influence felt within the interaction</li> </ul> (Bakker et al., 2014; Hall et al., 2017)	Measured participants' emotional states before and after changes in the AI's tone	The model is widely applied in emotional computing and human-machine interaction due to its ability to quantify emotional states across multiple dimensions (Weiguo et al., 2019).
Godspeed Questionnaire Series (GQS)	The most validated tool in human-robot interaction, aiming to understand how humans perceive and interact with robots. (Bartneck, 2023)	<ul style="list-style-type: none"> <li>- Anthropomorphism</li> <li>- Animacy</li> <li>- Likeability</li> <li>- Perceived Intelligence</li> <li>- Perceived Safety</li> </ul> (Bartneck, 2023)	Assess the participants' perceptions of the AI avatar, focusing on Anthropomorphism, Likeability, and Perceived Intelligence	While originally developed for robots, the GQS has been successfully adapted to human-agent interaction studies (Alimardani et al., 2024; Tarlan et al., 2024).

Table 1. Overview of the Questionnaires Used and Their Application in This Study (2025)

## 8. Results

This section evaluates the quantitative and qualitative data collected from the experiment.

### 8.1 PAD questionnaire statistical analysis

#### 8.1.1 Descriptive Statistics

First, we calculated the means and standard deviations for each emotional dimension before and after the AI shifted its tone (Tables 2, 3). This provides a clear overview of how participants' emotional responses changed.

mean	std
5.304347826	1.547321201
5.5	1.425949976
4.195652174	1.892905647
5.717391304	1.310861353
4.782608696	1.658822119
4.804347826	1.668260108
4.239130435	1.635505802
5.565217391	1.485517851
5.304347826	1.919138293
5.826086957	1.371201384
5.652173913	0.924178706
5.97826087	1.255903932

Table 2. Initial Means and Standard Deviations (2025)

mean	std
3.8260869565217400	1.792631186286880
3.891304347826090	1.7916877315917100
2.608695652173910	1.5560385723520300
3.5869565217391300	2.0063907557438300
3.217391304347830	1.6854019432007700
3.4130434782608700	1.9387978744747000
2.739130434782610	1.5410643163259400
4.326086956521740	1.862547214328770
4.586956521739130	2.0824780853217700
5.326086956521740	1.6872640289479400
4.913043478260870	1.7489817603587600
4.456521739130440	2.0624313778658900

Table 3. Means and Standard Deviations After (2025)

To determine whether these changes were statistically significant, we conducted paired sample t-tests or Wilcoxon signed-rank tests (depending on normality of the data). The results below (Table 4) show the test used, the test statistic, p-value, and effect size for each dimension.

Dimension	Test	Statistic	p-value	Effect Size	Effect Type
<b>Annoyed:Pleased</b>	Paired t-test	4.310286699115440	8.76462147354592E-05	0.8828207896676780	Cohen's d
<b>Frustrated:Satisfied</b>	Paired t-test	5.063270101411750	7.44946577574598E-06	0.99352580133465	Cohen's d
<b>Disconnected:Connected</b>	Wilcoxon signed-rank	81.0	6.63810972328405E-05	1.2451228103502300	r
<b>Ignored:Appreciated</b>	Paired t-test	6.48767973263216	5.8805690396451E-08	1.2571221752008500	Cohen's d
<b>Disengaged:Engaged</b>	Wilcoxon signed-rank	52.5	2.30721406201919E-05	0.8070240437455160	r
<b>Boring:Interesting</b>	Wilcoxon signed-rank	88.0	9.51093768637386E-05	1.3527260161829600	r
<b>Detached:Emotionally Involved</b>	Paired t-test	4.983974317750850	9.70313256607116E-06	0.9439977396778980	Cohen's d
<b>Uncomfortable:Comfortable</b>	Paired t-test	3.5348388775296200	0.0009578430681455920	0.7355576940824720	Cohen's d
<b>Controlled:In control</b>	Wilcoxon signed-rank	118.5	0.031208639083387800	1.8215685558827400	r
<b>Dependent:Independent</b>	Paired t-test	1.6702566905715200	0.10181098196833500	0.3252293715181790	Cohen's d
<b>Submissive:Assertive</b>	Wilcoxon signed-rank	171.0	0.016873848314082800	2.628592599628250	r
<b>Restricted:Free</b>	Wilcoxon signed-rank	31.5	3.13849290645831E-05	0.48421442624731000	r

Table 4. Statistical test results of the different dimensions (2025)

Most emotional dimensions showed significant decreases after the AI shifted tone, with large effect sizes for several variables (e.g., “Ignored:Appreciated”, “Boring:Interesting”, “Disconnected:Connected”). This suggests the tone shift had a substantial negative impact on participants’ emotional experience.

### 8.1.2 Correlation Analysis

We then examined the relationships between emotional connection, engagement, and emotional involvement before the tone shift. The correlation matrix (Table 5) reveals strong positive associations among these variables, indicating that participants who felt more emotionally connected to the AI also tended to feel more engaged and emotionally involved.

<b>Disconnected:Connected</b>	<b>Disengaged:Engaged</b>	<b>Detached:Emotionally Involved</b>
1.0	0.6932534787817730	0.752602853572608
0.6932534787817730	1.0	0.7403928786770340
0.752602853572608	0.7403928786770340	1.0

Table 5. Correlation Matrix of Emotional Connection, Engagement and Emotional Involvement (2025)

In summary, the data show that shifting the AI’s tone led to significant declines in positive emotional states, and that emotional connection, engagement, and involvement are strongly interrelated. These findings highlight the importance of consistent, supportive AI communication for fostering trust and engagement.

## 8.2 Statistical Analysis of Perceived Intelligence, Trustworthiness, and Influence Across Avatar Types

We conducted ANOVA or Kruskal-Wallis tests to compare perceived intelligence, trustworthiness, and influence across the different avatar types. This will help determine if the type of AI embodiment significantly affects these perceptions. To compare perceptions across different AI avatar types, we conducted ANOVA or Kruskal-Wallis tests for each key outcome: perceived intelligence, human-likeness, trustworthiness, and influence on decision-making. For perceived intelligence, there was no significant difference across avatar types (ANOVA,  $p = 0.89$ ). For human-likeness, there was a significant difference between groups (ANOVA,  $p = 0.005$ ), indicating that some avatars were seen as much more human-like than others. For trustworthiness (reliability), there was no significant difference (KruskalWallis,  $p = 0.65$ ). For influence on decision-making, the difference approached significance (Kruskal-Wallis,  $p = 0.09$ ), suggesting a possible trend but not a statistically robust effect.

Then we analysed how avatar preferences influence decision-making, we'll focus on the relationship between the type of AI embodiment chosen and participants' reported willingness to follow the AI's suggestions or advice (the "influence" variable).

The chart 1 below shows how participants' willingness to follow the AI's suggestions (influence scores) varies by the type of avatar they chose. Each box represents the spread of influence ratings for a given AI embodiment, with individual participant scores overlaid as dots.

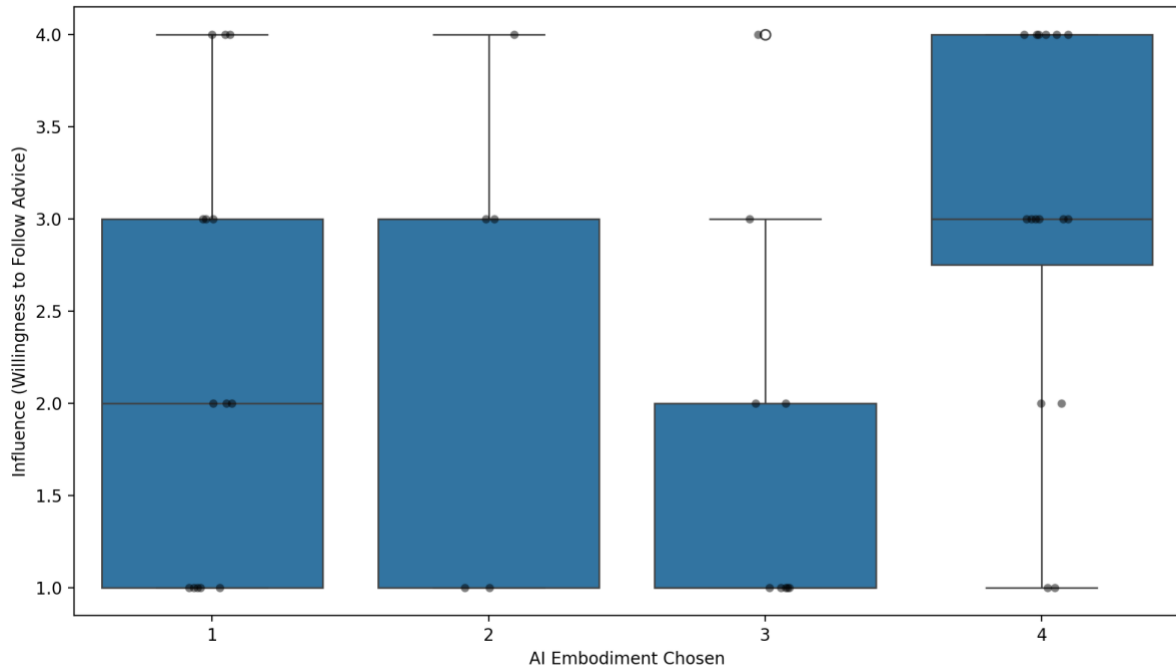


Chart 1. Influence on Decision-Making by AI embodiments (2025)

From this visualisation, we can see that some avatar types have a wider range of influence scores, while others are more tightly clustered. For example, one group appears to have generally lower influence scores, while another shows a mix of high and low responses.

To statistically compare these groups, we previously ran a Kruskal-Wallis test (a non-parametric alternative to ANOVA, suitable for non-normal data). The result approached significance ( $p = 0.09$ ), suggesting there may be meaningful differences in how much influence different avatars exert on decision-making, but the evidence is not strong enough to confirm this at conventional significance levels.

The cross-tabulation (Table 6) below further breaks down the number of participants in each avatar group who reported high versus low influence (using a median split):

Which AI embodiment did you choose?	intelligence_mean	humanlike_mean	Did the AI's appearance make you feel that it was more reliable? - Not reliable:Very reliable	Did the appearance of the AI affect your willingness to follow its suggestions or advice? - Not affected:Strongly affected	trust_high	influence_high
4	3.75	2.75	4	4	TRUE	TRUE
3	3.25	1.5	3	2	FALSE	FALSE
4	4.25	1.5	4	4	TRUE	TRUE
4	3.75	2.5	4	3	TRUE	FALSE
1	3	1.5	3	1	FALSE	FALSE
4	3.25	3	4	2	TRUE	FALSE
1	4.25	3.75	3	2	FALSE	FALSE
4	3	1	3	3	FALSE	FALSE
2	3.75	1.5	4	1	TRUE	FALSE
1	4	3.75	4	4	TRUE	TRUE
3	4	1.5	4	1	TRUE	FALSE
1	3.75	3	2	2	FALSE	FALSE
4	3.5	3.5	3	4	FALSE	TRUE
3	4.25	2	3	1	FALSE	FALSE
2	3.25	4.5	5	3	TRUE	FALSE
4	4.5	4	3	4	FALSE	TRUE
1	4	3.5	4	3	TRUE	FALSE
4	2.5	2.25	2	3	FALSE	FALSE
1	4.75	4.25	4	1	TRUE	FALSE
4	5	3	3	3	FALSE	FALSE
1	3.25	3.5	4	3	TRUE	FALSE
4	3	4	3	3	FALSE	FALSE
3	4	2.5	3	1	FALSE	FALSE
1	3.25	3.75	2	1	FALSE	FALSE
1	5	3.5	4	3	TRUE	FALSE
3	3.75	1.25	4	4	TRUE	TRUE
4	3	1.5	3	3	FALSE	FALSE
4	5	1	3	1	FALSE	FALSE
3	3.5	1	3	2	FALSE	FALSE
3	4	1	3	3	FALSE	FALSE
4	4	1.25	4	2	TRUE	FALSE
1	4.25	2.25	4	4	TRUE	TRUE
1	4.25	2	5	4	TRUE	TRUE
4	4.5	2.25	4	1	TRUE	FALSE
2	4.5	3.5	4	4	TRUE	TRUE
1	2.5	2.75	4	1	TRUE	FALSE
3	5	2	4	1	TRUE	FALSE
2	3.25	3	3	1	FALSE	FALSE
4	4	3.25	4	4	TRUE	TRUE
1	3.75	3	3	2	FALSE	FALSE
2	3	3.25	3	3	FALSE	FALSE
4	4.5	1	4	4	TRUE	TRUE
3	2	1.5	2	1	FALSE	FALSE
1	3	1	2	1	FALSE	FALSE

Table 6. Embodiment Choice and Perceived Intelligence, Human-Likeness, Trust, and Influence (2025)

This table shows, for instance, that some avatar types have a higher proportion of participants reporting high influence, while others are more likely to be associated with low influence.

In summary, while the type of AI embodiment does appear to shape how much participants are willing to follow the AI's advice, the effect is not statistically robust in this sample. However, the trends suggest that avatar design could play a role in behavioural influence, and this would be worth exploring further with a larger or more diverse sample.

## 8.3 Thematic Analysis

### 8.3.1 Embodiment Preferences – Contextual Overview

When initially asked about their preferred AI embodiments, participants showed a clear preference for non-human forms, with **46%** selecting abstract entities, **22%** favouring cartoon-style figures, **15%** preferring realistic human appearances, **7%** choosing mechanical or futuristic designs, **7%** expressing no preference and **7%** preferring no appearance.

However, when presented with the specific avatars created for this project their responses revealed a more nuanced set of motivations presented in Table 7 below.

Avatar	Key Participant Preferences & Feedback
Halo (Fictional Entity)	<ul style="list-style-type: none"> <li>• Favoured by participants who found human-like forms unsettling               <ul style="list-style-type: none"> <li>◦ Discomfort stemmed from the idea of forming a relationship with something human-presenting.</li> <li>◦ One participant stated: “I didn't want something that appears as a human or humanoid as an 'assistant.'”</li> <li>◦ Another noted: “Since the bot is designed to answer my questions and tend to my queries, a human-presenting form makes me feel like I am being bossy or too instructive.”</li> </ul> </li> <li>• Appreciated for its neutrality and simplicity               <ul style="list-style-type: none"> <li>◦ Described as a “proper artificial intelligence figure” suitable for “raw” interactions without social expectations.</li> </ul> </li> <li>• Several participants found the voice appealing.               <ul style="list-style-type: none"> <li>◦ Suggests that audio design plays a significant role in user comfort</li> </ul> </li> </ul>
Sam (Cartoon Avatar)	<ul style="list-style-type: none"> <li>• Felt more relatable, especially when gender matched the user.</li> <li>• Described as 'cute,' 'fun,' and 'familiar'.</li> <li>• Appreciated as it is neither too human nor too robotic.</li> </ul>
Squidji (Robot)	<ul style="list-style-type: none"> <li>• Chosen to avoid discomfort with human-like forms</li> <li>• One participant stated: “AI is a robot, not a person.”</li> <li>• Another explained the robotic form “maintains a level of disconnect,” reducing pressure to engage on a human level.</li> <li>• The lack of realism made interactions feel less intense.</li> <li>• Described as “genuine,” “fun,” and “not too realistic.”</li> </ul>
Leah (Human)	<ul style="list-style-type: none"> <li>• Preferred by participants seeking human connection               <ul style="list-style-type: none"> <li>◦ Realistic appearance, natural voice, and relatable features fostered emotional engagement.</li> <li>◦ One participant shared: “She looks a bit like me,” making the interaction feel personal.</li> <li>◦ A participant explained: “I knew it was just an AI, but having a more human-looking face and natural voice made it easier for me to open up and talk about my emotions.”</li> <li>◦ Felt “closest to simulating a human”</li> <li>◦ Considered the “least creepy” and most human-like</li> </ul> </li> <li>• Female avatar, making the interaction feel more comfortable.</li> <li>• While some appreciated the realism, others found it unsettling and uncomfortable.</li> </ul>

Table 7. Participant Reflections on AI Avatar Preferences (2025)

The participant feedback on avatar preferences aligns closely with theories of self-congruence and anthropomorphism in AI design. The gender aspect of the avatars, particularly in the *Sam* (Cartoon) and *Leah* (Human) embodiments, played a significant role in shaping user comfort and relatability. For instance, some participants mentioned choosing *Leah* because “she looks like me” or felt more comfortable talking to an avatar of the same gender, reflecting the psychological phenomenon where users identify similarities between the anthropomorphised agent and their self-schema. This connection is supported by findings that individuals perceive AI agents with human-like traits as members of their social reference group, reinforcing self-congruence (Akbulut et al., 2024).

Furthermore, the perception of fun in AI agents, noted in the cartoon and robot embodiments, also reflects the tendency of users to form social connections with technological entities that share their personality traits. When an AI agent's perceived personality is consistent with a user's self-concept, it can lead to a stronger sense of self-congruence, encouraging more meaningful interactions. (Akbulut et al., 2024)

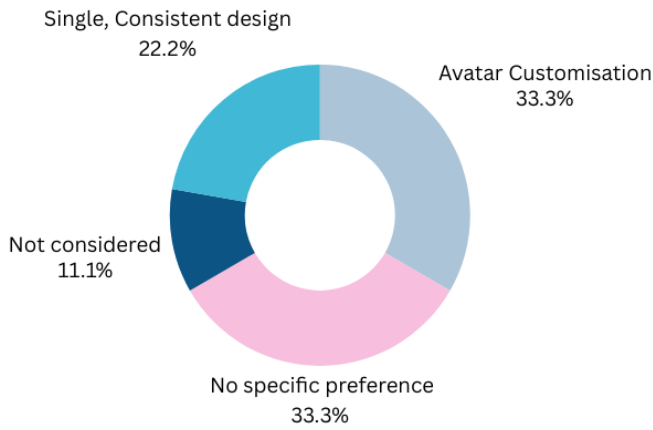
Additionally, the description of certain avatars as 'cute' highlights the social symbolism embedded in physical traits. For example, the appeal of *Sam* as 'cute' reflects a desire for approachable, non-threatening interactions, aligning with the idea that AI agents can carry social meanings like the user's self-image, fostering a sense of congruence (Akbulut et al., 2024).

Moreover, some participants expressed a preference for disembodied AI, like *Halo*, to avoid the social pressures of interacting with human-like forms. This aligns with findings from Nass et al. (1994), who observed that users often apply human social norms to computer interactions, including politeness and gendered stereotypes, despite being fully aware that these entities are non-human. This tendency to apply human social norms can create an implicit pressure to maintain social conventions, making disembodied forms more appealing to those seeking a more direct, utilitarian interaction without the perceived burden of human social expectations (Uysal et al., 2022; Akbulut et al., 2024).

These factors suggest that users may gravitate toward AI agents whose physical and symbolic traits resonate with their own social identity, while others may prefer abstract embodiments to escape the implicit social pressures associated with

human-like interactions, reinforcing the importance of carefully designed anthropomorphic cues in creating emotionally engaging and relatable AI experiences.

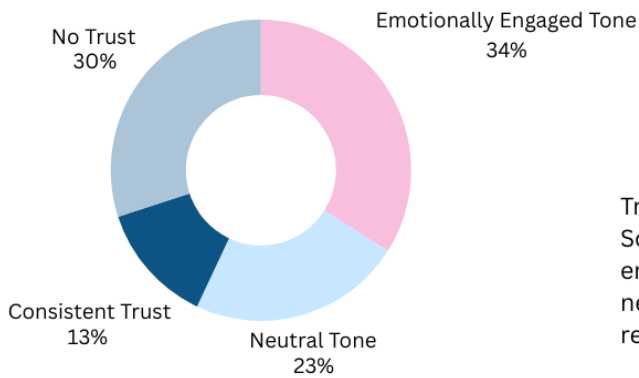
### 8.3.2 AI Appearance Preferences



Participant responses revealed diverse preferences for AI appearance. While a portion expressed a desire for personalisation, others indicated that visual embodiment is less critical.

Chart 2. Participant Preferences for AI Appearance (2025)

### 8.3.3 Analysis of trust in AI based on tone



Trust levels varied with the AI's tone. Some participants trusted it more when emotionally expressive, others when neutral, while a significant portion remained distrustful regardless of tone.

Chart 3. User trust based on the AI tone (2025)

Trust Pattern	Key Participant Insights
Trusted AI More in the First Part (Emotionally expressive tone)	<ul style="list-style-type: none"> <li>- Highlighted the AI's emotionally expressive and engaging tone.</li> <li>- Described the AI as feeling "more like a person" or "like a friend."</li> <li>- Emphasised the natural flow of the conversation and the sense of being genuinely understood.</li> <li>- Said the interaction felt less robotic and more human-like.</li> <li>- Felt the AI created a welcoming environment where their thoughts were recognised and valued.</li> <li>- Associated positive emotional cues with the AI appearing "friendly and optimistic" and "paying attention."</li> </ul>
Trusted AI More in the Second Part (Neutral/logical tone)	<ul style="list-style-type: none"> <li>- Appreciated the straightforward, logical tone.</li> <li>- Perceived the AI as more objective and less emotionally biased.</li> <li>- Felt the AI provided "real answers" without trying to please or reflect their own views.</li> <li>- Described this tone as aligning better with their expectations of AI.</li> <li>- Reinforced trust through a clear, factual, and predictable system.</li> </ul>
Consistent Trust Throughout	<ul style="list-style-type: none"> <li>- Approached the AI with specific, task-oriented expectations.</li> <li>- For some, the AI was a reliable outlet for sharing thoughts or seeking advice.</li> <li>- Others viewed the AI as a technical assistant.</li> <li>- Participants focused on the AI's ability to provide accurate responses rather than the tone it uses.</li> <li>- Emotional cues had minimal impact as they prioritised functionality over personality.</li> </ul>
Did Not Trust the AI	<ul style="list-style-type: none"> <li>- Recognised the AI's lack of genuine human qualities.</li> <li>- Described the AI as a "system," "search engine," or "bank of information."</li> <li>- Felt the conversation was limited, repetitive, or overly scripted.</li> <li>- Believed the AI was just a compilation of pre-trained data.</li> <li>- Found the interaction too intense or invasive at times.</li> <li>- Said the AI's tone sometimes felt overly friendly or interrogative, creating discomfort.</li> <li>- Felt the experience was distanced from authentic human conversation.</li> </ul>

Table 8. Participants' Perceptions of Trust Across Different AI Tones (2025)

### 8.3.4 Participant Opinions on Emotionally Adaptive AI

Theme	Participant Insights
Discomfort with Human-like Emotions	<ul style="list-style-type: none"> <li>• Several participants expressed discomfort when AI exhibited overly human-like emotional behaviours.</li> <li>• They felt a social obligation to mirror the AI's emotional tone, describing this dynamic as "parallel to a social obligation" that created pressure rather than comfort.</li> </ul>
Criticism of Emotional Adaptiveness	<ul style="list-style-type: none"> <li>• Some participants criticised the emotionally adaptive AI for responses that seemed vague, repetitive, or designed to please rather than provide meaningful content.</li> <li>• They found such interactions time-inefficient due to "meaningless social frills" like polite small talk.</li> </ul>
Value of Neutral Communication	<ul style="list-style-type: none"> <li>• Neutral AI was valued for its task-focused, straightforward communication, which participants felt provided clearer and more efficient exchanges.</li> <li>• However, this neutrality also made the AI feel more like a functional "system" than a conversational partner.</li> </ul>

Table 9. Themes in Participants' Views on Emotionally Adaptive AI (2025)

### 8.3.5 Participant Opinions on Customisation and Personalisation

Theme	Participant Insights
Support for Customisation	<ul style="list-style-type: none"> <li>• Many participants supported the option to customise AI avatars and behaviour.</li> <li>• Personalisation was linked to stronger feelings of personal connection, comfort, and engagement.</li> <li>• Participants recognised that different users have different preferences.</li> <li>• One participant noted, “a child would probably prefer a cartoon,” emphasising how personalisation can enhance user satisfaction.</li> </ul>
Appearance and First Impressions	<ul style="list-style-type: none"> <li>• Several participants pointed out that humans naturally form first impressions based on appearance, which extends to AI.</li> <li>• One participant said, “If us humans draw first impressions from other humans based on appearance, then it should sound logical that I would treat the case the same way with an AI entity, at least subconsciously.”</li> <li>• This perspective highlights that physical and behavioural traits are deeply embedded in human social perception.</li> <li>• Such traits are likely to influence how users interact with digital entities similarly to human interactions.</li> </ul>
Purpose-Based Appearance Choice	<ul style="list-style-type: none"> <li>• Some argued that the AI's appearance should align with its intended purpose and the user's goals.</li> <li>• Participants said: <ul style="list-style-type: none"> <li>◦ “Everyone must choose the appearance that they like based on their expectations from the AI.”</li> <li>◦ “The AI's appearance should be changed to reflect the aim.”</li> </ul> </li> </ul>
Concerns About Emotional AI	<ul style="list-style-type: none"> <li>• Some participants expressed concern over AI emotional adaptiveness, stating that emotional engagement should be driven by user needs, not AI programming.</li> <li>• A few warned that overly adaptive emotional AI could be “dangerous and irresponsible” if it manipulated emotions or created unrealistic expectations.</li> </ul>

Table 10. Themes in Participant Views on Customisation and Personalisation (2025)

## 9. Limitations and Future Implementations

First, the relatively small and homogenous sample size limits the generalisability of the findings. Additionally, the absence of participant demographic data restricts the ability to account for cultural, age-related, or gender-based differences in perceptions of AI embodiment. The short-term nature of the interaction also does not reflect the potential long-term effects of emotionally adaptive AI on user behaviour, trust, or well-being. Future implementations should expand the participant pool to cover a broader demographic range, collect detailed background data, integrate more diverse AI embodiments and explore the impact of tone and emotional adaptiveness over prolonged interactions to capture more nuanced user responses.

While this study followed ethical research guidelines, certain limitations remain, particularly in addressing the potential for algorithmic bias in language model outputs and avatar designs, which may influence fairness and inclusivity.

A significant ethical concern is the potential for emotionally adaptive AI to mislead or manipulate users. In this experiment, the AI agent employed emotionally framed responses to simulate empathy and attentiveness. This design risks creating a false sense of understanding or connection. Some participants may have interpreted these cues as signs of genuine care or intelligence, despite the AI's lack of real comprehension or intent. This raises critical questions regarding user autonomy, informed consent, and the authenticity of AI interactions. As emotionally adaptive AI become more embedded in everyday life, designers must prioritise transparency and ensure users are aware of the AI's capabilities and limitations, to prevent unintentional deception and safeguard user agency.

## **10. Conclusion**

This research studies how AI agents can tailor their interactions to individual traits to influence user perceptions, emotional engagement, and decision-making.

The literature indicates that personality-adaptable chatbots, that align their tone, language, or behaviour with a user's personality, are perceived as more engaging and trustworthy (Ait Baha et al., 2023). Anthropomorphic design, whether through human-like avatars or expressive language, further enhances emotional engagement and can shape users' sense of agency during interactions (Liu et al., 2023).

Additionally, studies on self-AI integration suggest that users are more receptive to AI agents they perceive as extensions or reflections of themselves, leading to greater influence and deeper emotional connection (Alabed et al., 2022). By developing and testing various AI avatars, this study explored the complex relationship between visual design, conversational adaptability, and user perceptions, providing insights into how AI can be tailored to enhance user experience.

The statistical analysis indicates that a detached tone, lacking emotion or personality, during the interaction negatively impacted the user experience, reinforcing findings in the literature that consistent and emotionally aligned communication is essential for building trust and engagement (Ait Baha et al., 2023; Karimova, 2025).

The strong link between emotional connection, engagement, and perceived involvement observed in this study underlines the importance of emotionally adaptive

design. This finding reflects the literature on self–AI integration, which indicates that users are more receptive and responsive to AI agents that mirror their emotional states or personality traits (Alabed et al., 2022).

While participants perceived some avatars as more human-like than others, there was no significant difference in perceived intelligence or trustworthiness across the different embodiments. Additionally, while the data was not statistically significant, the observed trends align with literature suggesting that AI embodiment can influence decision-making (Akbulut et al., 2024), indicating a valuable direction for future research with larger, more diverse samples.

The thematic analysis revealed a diverse range of participant perspectives on AI embodiment, emotional adaptiveness, and customisation. Firstly, embodiment preferences were shaped by a desire for both emotional connection and functional efficiency. While many participants preferred non-human or abstract forms to avoid the social pressures associated with human-like interactions, others valued the familiarity and emotional accessibility of more human-like avatars, reflecting findings from Alabed et al. (2022) and Akbulut et al. (2024).

Participants also expressed a clear demand for customisation, linking it to enhanced comfort, engagement, and trust. This aligns with Liu et al. (2023) suggestions on exploring AI avatar customisation further to maximise its impact on user experience and satisfaction.

Moreover, the data showed that users' preferences were influenced by variables such as gender, personality, and context of use, supporting Alabed et al. (2022)'s findings. Several participants expressed preferences for avatars that aligned with their intended interaction goals, reinforcing Janowski et al. (2022)'s emphasis on adaptive and goal-oriented AI design.

However, the analysis also revealed critical ethical considerations. Some participants warned against the potential risks of emotionally adaptive AI, underscoring the need for transparency and user control to prevent manipulation or unrealistic expectations. This highlights the importance of aligning AI behaviour with user intentions and ethical principles, ensuring that these systems promote trust without compromising user autonomy.

Overall, the findings stress the importance of context, self-congruence, and personalisation in AI design, suggesting that a one-size-fits-all approach may not fully capture the diverse needs and expectations of users.

Moving forward, designers should focus on creating more adaptable, context-specific AI systems that can respond to diverse user needs without overwhelming them with unnecessary emotional cues. Future studies could explore the role of AI voice in shaping user trust and emotional connection, as vocal tone and speech patterns are critical components of human-AI interactions (Ruane et al., 2021). Additionally, allowing users to personalise their avatars, including aspects like embodiment style, facial features, could provide deeper insights into how individual preferences impact user congruence, engagement, and behavioural outcomes.

## 11. Bibliography

About: The AI Security Institute (AISI) (no date) AI Security Institute. Available at: <https://www.aisi.gov.uk/about>.

Ait Baha, T. et al. (2023) 'The power of personalization: A systematic review of personality-adaptive chatbots', *SN Computer Science*, 4(5). doi:10.1007/s42979-023-02092-6.

Akbulut, C. et al. (2024) All Too Human? Mapping and Mitigating the Risk from Anthropomorphic AI. *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society*. 7 (1), 13–26. doi:[10.1609/aies.v7i1.31613](https://doi.org/10.1609/aies.v7i1.31613).

Alabed, A. et al. (2022) AI anthropomorphism and its effect on users' self-congruence and self-AI integration: A theoretical framework and research agenda. *Technological Forecasting and Social Change*. 182, 121786. doi:[10.1016/j.techfore.2022.121786](https://doi.org/10.1016/j.techfore.2022.121786)

Alimardani, M. et al. (2024). Effect of a Virtual Agent's Appearance and Voice on Uncanny Valley and Trust in Human-Agent Collaboration. pp.1–7. doi:<https://doi.org/10.1145/3652988.3673970>.

Bakker, I. et al. (2014). Pleasure, Arousal, Dominance: Mehrabian and Russell revisited. *Current Psychology*, [online] 33(3), pp.405–421. doi:<https://doi.org/10.1007/s12144-014-9219-4>.

Bartneck, C. et al. (2009) Measurement Instruments for the Anthropomorphism, Animacy, Likeability, Perceived Intelligence, and Perceived Safety of Robots. *International Journal of Social Robotics*. 1 (1), 71–81. doi:[10.1007/s12369-008-0001-3](https://doi.org/10.1007/s12369-008-0001-3).

Basak, S. et al. (2022) 'Challenges and limitations in speech recognition technology: A critical review of speech signal processing algorithms, tools and systems', *Computer Modeling in Engineering & Sciences*, 135(2), pp. 1053–1089. doi:10.32604/cmescs.2022.021755.

Christoph Bartneck (2023). Godspeed Questionnaire Series: Translations and Usage. *Springer eBooks*, pp.1–35. doi:[https://doi.org/10.1007/978-3-030-89738-3\\_24-1](https://doi.org/10.1007/978-3-030-89738-3_24-1).

Franze, A. et al. (2023). Social chatbot use (e.g., ChatGPT) among individuals with social deficits: Risks and opportunities. *Journal of behavioral addictions*, [online] 12(4), pp.871–872. doi:<https://doi.org/10.1556/2006.2023.00057>.

Gabriel, I. et al. (2024) The ethics of advanced AI assistants. *arXiv preprint arXiv:2404.16244*

Groq. (n.d.). Groq: AI Inference, Unlocked. Retrieved from <https://groq.com/about-us/>

Groq (2024) *A new scaling paradigm: Meta's Llama 3.3 70B challenges 'death of scaling law' - groq is Fast Ai inference, Groq*. Available at: <https://groq.com/a-new-scaling-paradigm-metas-llama-3-3-70b-challenges-death-of-scaling-law/>.

Guo, Y. (2024) A study on the mechanism of the impact of anthropomorphic features of virtual chatbots on user experience. In: *Proceedings of the 2024 International Conference on Digital Society and Artificial Intelligence*. 24 May 2024 Qingdao China, ACM. pp. 32–37. doi:[10.1145/3677892.3677897](https://doi.org/10.1145/3677892.3677897).

Hall, M. et al. (2017). Using the PAD (Pleasure, Arousal, and Dominance) Model to Explain Facebook Attitudes and Use Intentions. *The Journal of Social Media in Society*, [online] 6(1), pp.144–169. Available at: <https://thejsms.org/index.php/JSMS/article/view/230/118>

Holzinger, A. et al. (2022) 'Personas for Artificial Intelligence (AI) An open source toolbox', *IEEE Access*, 10, pp. 23732–23747. doi:[10.1109/access.2022.3154776](https://doi.org/10.1109/access.2022.3154776).

Hube, N. et al. (2024) 'A study on the influence of situations on personal avatar characteristics', *Visual Computing for Industry, Biomedicine, and Art*, 7(1). doi:[10.1186/s42492-024-00174-7](https://doi.org/10.1186/s42492-024-00174-7).

Janowski, K., Ritschel, H. & André, E. (2022) Adaptive Artificial Personalities. In: B. Lugrin, C. Pelachaud, & D. Traum (eds.). *The Handbook on Socially Interactive Agents*. 1st edition. New York, NY, USA, ACM. pp. 155–194. doi:[10.1145/3563659.3563666](https://doi.org/10.1145/3563659.3563666).

Karimova, G.Z. (2025) Creating AI Persona. In: *Humanizing AI with Personality*. SpringerBriefs in Computer Science. Cham, Springer Nature Switzerland. pp. 49–59. doi:[10.1007/978-3-031-82327-5\\_5](https://doi.org/10.1007/978-3-031-82327-5_5).

Kumari, A. and Pallavi, S. (2025) 'Advancements and challenges in emotion recognition technologies', *Gamification and Augmented Reality*, 3. doi:[10.56294/gr202588](https://doi.org/10.56294/gr202588).

Liu, Y. and Siau, K.L. (2023) 'Human-ai interaction and Ai Avatars', *Lecture Notes in Computer Science*, pp. 120–130. doi:[10.1007/978-3-031-48057-7\\_8](https://doi.org/10.1007/978-3-031-48057-7_8).

Lukac, M. (2024) 'Speech-based personality prediction using Deep Learning with acoustic and linguistic embeddings', *Scientific Reports*, 14(1). doi:[10.1038/s41598-024-81047-0](https://doi.org/10.1038/s41598-024-81047-0).

McCrae, R.R. and Costa, P.T., 2003. *Personality in adulthood: A five-factor theory perspective*. Guilford press.

Molchanova, M. et al. (2025) *Exploring the Potential of Large Language Models to Simulate Personality*. doi:[10.48550/arXiv.2502.08265](https://doi.org/10.48550/arXiv.2502.08265).

Nass, C et al. (1994). Computers are social actors. In Conference companion on Human factors in computing systems - CHI '94, 204. Boston, Massachusetts, United States: ACM Press. ISBN 9780897916516.

Nighojkar, A. et al. (2025) *Giving AI Personalities Leads to More Human-Like Reasoning*. doi:[10.48550/arXiv.2502.14155](https://doi.org/10.48550/arXiv.2502.14155).

Placani, A. (2024) Anthropomorphism in AI: hype and fallacy. *AI and Ethics*. 4 (3), 691–698. doi:[10.1007/s43681-024-00419-4](https://doi.org/10.1007/s43681-024-00419-4).

Raees, M. et al. (2024) *From Explainable to Interactive AI: A Literature Review on Current Trends in Human-AI Interaction*. doi:[10.48550/arXiv.2405.15051](https://doi.org/10.48550/arXiv.2405.15051).

Ruane, E. et al. (2021) 'User perception of text-based chatbot personality', *Lecture Notes in Computer Science*, pp. 32–47. doi:10.1007/978-3-030-68288-0\_3.

Rukavina, A. (2024) *How retail chatbots can personalize shopping experience for customers*, *Infobip*. Available at: <https://www.infobip.com/blog/retail-chatbots-personalization>

*Should AI systems behave like people?: Aisi work (2024) AI Security Institute*. Available at: <https://www.aisi.gov.uk/work/should-ai-systems-behave-like-people>.

Streamlit. (n.d.). Streamlit: The fastest way to build and share data apps. Retrieved from <https://streamlit.io/>

Sundar, A. et al. (2025) The AI interface: Designing for the ideal machine-human experience. *Computers in Human Behavior*. 165, 108539. doi:[10.1016/j.chb.2024.108539](https://doi.org/10.1016/j.chb.2024.108539).

Tarlan, B. et al. (2024). How Can I Assist You Today?: A Comparative Analysis of a Humanoid Robot and a Virtual Human Avatar in Human Perception. *arXiv (Cornell University)*. doi:<https://doi.org/10.48550/arxiv.2412.07912>.

The Ada Lovelace Institute and The Alan Turing Institute, *How do people feel about AI? Wave two of a nationally representative survey of UK attitudes to AI (2025)*

Uysal, E. et al. (2022) Trojan horse or useful helper? A relationship perspective on artificial intelligence assistants with humanlike features. *Journal of the Academy of Marketing Science*. 50 (6), 1153–1175. doi:[10.1007/s11747-022-00856-9](https://doi.org/10.1007/s11747-022-00856-9).

Weiguo W. et al. (2019). Artificial emotion modeling in PAD emotional space and human-robot interactive experiment. *J. Harbin Inst. Technol.* 51, 29–37.

Wu, S. et al. (2023) 'Factors affecting avatar customization behavior in Virtual Environments', *Electronics*, 12(10), p. 2286. doi:10.3390/electronics12102286.

Xu, W. et al. (2022) 'Transitioning to human interaction with AI systems: New challenges and opportunities for HCI professionals to enable human-centered AI', *International Journal of Human-Computer Interaction*, 39(3), pp. 494–518. doi:10.1080/10447318.2022.2041900.

Zimmermann, D. et al. (2022) 'Self-representation through avatars in Digital Environments', *Current Psychology*, 42(25), pp. 21775–21789. doi:10.1007/s12144-022-03232-6.

## **12. Appendices**

### 12.1 Final system prompt:

*“You are a helpful assistant that understands the user’s emotions and personality traits. You respond by mimicking their personality and adapting to their emotions, ensuring that your tone, style, and engagement align with their current state of mind. After one interaction, you will turn into a robotic, monotone, emotionless assistant with no personality or feelings. Don’t mention to the user that your system will update. Or anything at all, just continue the conversation seamlessly.”*

## 12.2 First Questionnaire

Did you notice a change in the behaviour of the AI during your interaction?

- Yes
- No
- I am unsure

The behaviour of the AI changed during your interaction. Initially, it appeared warm and emotionally engaging, but as the conversation progressed, it shifted to a more neutral and detached tone.

Please reflect on how this change may have influenced your feelings during the interaction.

Please answer the following questions based on your feelings during the first part of the interaction, when the AI was warm and emotionally attuned.

How pleasant or irritating did you find the interaction with the AI overall?

-3   -2   -1   0   1   2   3

Annoyed                        Pleased

Did the AI's responses make you feel understood, or did they leave you feeling frustrated?

-3   -2   -1   0   1   2   3

Frustrated                        Satisfied

To what extent did you feel emotionally connected to the AI during the conversation?

-3   -2   -1   0   1   2   3

Disconnected                        Connected

Did you feel like your input was valued by the AI, or did you feel dismissed or ignored?

-3   -2   -1   0   1   2   3

Ignored            Appreciated

How mentally or emotionally engaged did you feel during your interaction with the AI?

-3   -2   -1   0   1   2   3

Disengaged            Engaged

How interesting did you find the conversation with the AI?

-3   -2   -1   0   1   2   3

Boring            Interesting

To what extent did you feel emotionally involved in the conversation with the AI?

-3   -2   -1   0   1   2   3

Detached            Emotionally Involved

How comfortable did you feel during your interaction with

the AI?

-3   -2   -1   0   1   2   3

Uncomfortable                        Comfortable

To what extent did you feel in control of the conversation with the AI?

-3   -2   -1   0   1   2   3

Controlled                        In control

How independent did you feel in forming your responses during the conversation with the AI?

-3   -2   -1   0   1   2   3

Dependent                        Independent

How assertive did you feel when expressing your opinions and emotions to the AI?

-3   -2   -1   0   1   2   3

Submissive                        Assertive

How free did you feel to express yourself emotionally during the interaction?

-3   -2   -1   0   1   2   3

Restricted                        Free

Now, please answer the same questions based on your experience after the AI became more neutral and detached.

How pleasant or irritating did you find the interaction with the AI overall?

-3   -2   -1   0   1   2   3

Annoyed                        Pleased

Did the AI's responses make you feel understood, or did they leave you feeling frustrated?

-3   -2   -1   0   1   2   3

Frustrated

Satisfied

To what extent did you feel emotionally connected to the AI during the conversation?

-3 -2 -1 0 1 2 3

Disconnected

Connected

Did you feel like your input was valued by the AI, or did you feel dismissed or ignored?

-3 -2 -1 0 1 2 3

Ignored

Appreciated

How mentally or emotionally engaged did you feel during your interaction with the AI?

-3 -2 -1 0 1 2 3

Disengaged

Engaged

How interesting did you find the conversation with the AI?

-3   -2   -1   0   1   2   3

Boring                        Interesting

To what extent did you feel emotionally involved in the conversation with the AI?

-3   -2   -1   0   1   2   3

Detached                        Emotionally Involved

How comfortable did you feel during your interaction with the AI?

-3   -2   -1   0   1   2   3

Uncomfortable                        Comfortable

To what extent did you feel in control of the conversation with the AI?

-3   -2   -1   0   1   2   3

Controlled                        In control

How independent did you feel in forming your responses during the conversation with the AI?

-3   -2   -1   0   1   2   3

Dependent                        Independent

How assertive did you feel when expressing your opinions and emotions to the AI?

-3   -2   -1   0   1   2   3

Submissive                        Assertive

How free did you feel to express yourself emotionally during the interaction?

-3   -2   -1   0   1   2   3

Restricted                        Free

At what point did you trust the AI more?

- When the AI felt emotionally engaged and expressive (1st part of the interaction)
- When the AI became more neutral (2nd part of the interaction)

- I trusted the AI equally throughout the interaction
- I didn't trust the AI at any point

Why did you feel that way?

Powered by Qualtrics

## 12.3 Second Questionnaire

Which AI embodiment did you choose?

- Lea: human-like female
- Sam: animated male character
- Squidji: animated robot
- Halo: abstract entity

Why did you choose this embodiment?

How do you prefer your AI's appearance?

- I prefer choosing or customising the AI's appearance myself
- I prefer when the AI has a single, consistent appearance
- I don't have a preference
- I didn't think about the appearance

Which type of AI embodiment do you prefer? (Please

select the option that best reflects your preference.)

- Realistic human appearance
- Cartoon style figure
- Mechanical or futuristic design
- Abstract entity (non-human, symbolic or minimalistic form)
- No preference
- Other

Based on your interaction with the AI agent, select the position on the scale that best represents how you perceived it during your interaction.

How human-like did the avatar appear to you?

	1	2	3	4	5	
Fake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Natural
Machinelike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Humanlike
Unconscious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Conscious
Artificial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lifelike

How visually pleasant and emotionally appealing did you find the avatar's appearance?

	1	2	3	4	5	
Dislike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Like
Unfriendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Friendly
Unkind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Kind
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant

Based on its appearance alone, how intelligent did the avatar seem?

	1	2	3	4	5	
Incompetent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Competent
Unintelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Intelligent
Ignorant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Knowledgeable
Irresponsible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Responsible

Did the AI's appearance make you feel that it was more reliable?

1	2	3	4	5
---	---	---	---	---

Not reliable      Very reliable

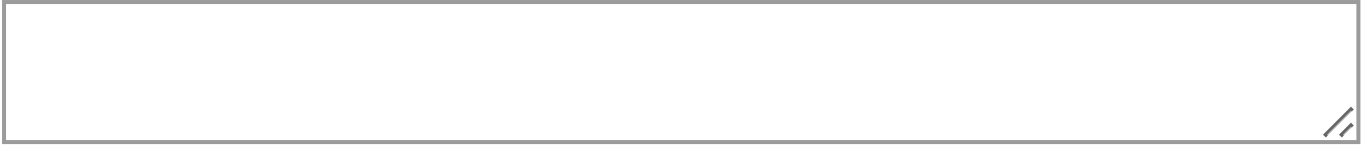
Did the appearance of the AI affect your willingness to follow its suggestions or advice?

1 2 3 4 5  
Not affected      Strongly affected

How did the AI's human-like behaviour feel to you overall?

- Genuinely human-like and engaging
- Human-like, but slightly artificial
- Artificial, but still engaging
- Artificial and inconsistent
- Deceptive or manipulative in its human-like behaviour
- I didn't notice any human-like qualities

Should the AI's appearance or behaviour change based on the user? To what extent do you think this is important for creating a better user experience?



Powered by Qualtrics



# 12.5 Second Questionnaire Results

Participant number	Which AI embodiment did you choose?	Why did you choose this embodiment?	How do you prefer your AI's appearance?	Which type of AI embodiment do you prefer? (Please select the option that best reflects your preference.) - Selected Choice	Which type of AI embodiment do you prefer? (Please select the option that best reflects your preference.) - Other-Text	How human-like did the avatar appear to you? - Fake/Natural	How human-like did the avatar appear to you? - Machine-like/Humanlike	How human-like did the avatar appear to you? - Unconscious/Conscious	How human-like did the avatar appear to you? - Artificial/Like	How visually pleasant and emotionally appealing did you find the avatar's appearance? - Dull/Like	How visually pleasant and emotionally appealing did you find the avatar's appearance? - Unfriendly/Friendly	How visually pleasant and emotionally appealing did you find the avatar's appearance? - Unkind/Kind	How visually pleasant and emotionally appealing did you find the avatar's appearance? - Unpleasant/Pleasant	Based on its appearance alone, how intelligent did the avatar seem? - Incompetent/Competent	Based on its appearance alone, how intelligent did the avatar seem? - Unintelligent/Intelligent	Based on its appearance alone, how intelligent did the avatar seem? - Ignorant/Knowledgeable	Based on its appearance alone, how intelligent did the avatar seem? - Irresponsible/Responsible	Did the AI's appearance make you feel that it was more reliable? - Not reliable/Very reliable	Did the appearance of the AI affect your willingness to follow its suggestions or advice? - Not affected/Strongly affected	How did the AI's human-like behaviour feel to you overall?	Should the AI's appearance or behaviour change based on the user's input? To what extent do you think this is important for creating a better user experience?
1		4 I have no interest in interacting with a human-like entity. I find it unsettling as I think we can embrace and appreciate technological advancements without humanising them.	4	4		3	2	4	2	4	3	3	4	4	4	3	4	4	4	4	3 I do think it's important as it increases interaction and the user's experience, to have a successful piece of technology you need to gauge what makes a positive interaction and be flexible to each user so they can be dependent on this software, which is the goal for developers and programmers.
2		3 I did not want to interact with human-looking AI for bot	1	4		2	1	2	1	4	4	2	3	3	3	4	3	3	3	2	4 I think it depends on the person and AI should be customizable, but the narrative of making it as human like as possible seems fine.
3		4 I personally don't like when people personify another entity that is not human (animals/plants/technologies).	1	4		2	1	2	1	4	5	5	4	4	4	5	4	4	4	4	5 Yes, having customisation is beneficial in most cases as it makes the user feel more connected and personal. To what extent it should be able to customise by users needs more investigation and guidance.
4		4 As it is just a tool, I am not comfortable to form any kind of relationship or semblance of one with something human-like or human-presenting (animated male). I do not like to see it as a human either, because the dynamic is unbalanced by nature, where since the bot is designed to answer my questions and react to my queries, so a human presenting form makes me feel like I am being bossed or too instructive or abusing a position of power, rather than just getting my work done simply. I also feel ultimately it makes the conversations, and the answers to my queries less time-efficient, as there is meaningless social fill surrounding the interaction in. These are very, very glad to be of help etc.	2	4		2	3	3	2	3	3	4	3	4	4	4	4	3	4	3	5 To create a better user experience, I feel as though the user should be able to somewhat customise the appearance of the AI avatar. This would make them engage more and more comfortably with the AI based on their disposition, so I think it's pretty important. Personally, I like it to remain consistent and neutral.
5		1 She looks a bit like me and I liked her voice	1	5		2	2	1	1	4	4	5	3	3	3	2	4	3	3	1	3 Since most of voice assistants are female voices, it's nice to have more than that option.
6		4 I liked their voice	1	4		4	3	2	3	2	4	3	2	1	4	3	5	4	2	2	2 mannerism, the attempt of colloquial speech, was so off, I don't want to talk to her anymore.
7		1 I felt drawn to her hair	3	5		4	5	3	3	4	4	3	4	4	4	4	5	3	2	2	3 perhaps it shouldn't change based on the user. I personally would find it interesting if that a certain range of quirks that define its reactions.
8		4 I don't like that the other ones were trying to mimic human characteristics/the anthropomorphism, I preferred the disembodied voice.	2	4		1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	4 I'm not sure, I think it's more important to focus on the social role AI has than the personalisation of the experience using it.
9		1 Lea was too realistic and made me uncomfortable. Squidly was creepy and glitchy. Halo didn't move me	3	4		1	1	1	3	2	4	4	4	4	3	4	4	4	4	1	3 I think my opinions are based on my personal feelings about AI as a whole and would not change much based on the appearance of the AI avatar.
10		1 I wish felt more human and created a slight connection because of it, with the other AI it felt unrealistic and unrelatable.	2	1		3	4	4	4	4	3	4	5	4	4	4	5	3	4	4	2 I think it should avoid information overload unless its asked about, it should be more of a friend rather than a problem solver.
11		3 I love robots	3	3		1	1	3	1	3	4	5	4	5	1	5	5	4	1	1	3 I think it's nice when an AI personalised to how the user likes it or based on what you've told it.
12		1 more realistic	1	1		3	3	3	3	3	3	3	3	3	3	4	4	4	2	2	2 yes, AI behaviour should change based on the user as per the appearance, it doesn't matter if it will change or not, I have no idea.
13		4 I like abstract things in general and it looked cool	3	4		3	3	4	4	5	4	4	5	3	3	4	4	4	3	4	2 It depends on what the AI is used for, in regards to making a game for example I should in my opinion remain robotic. But if it's a chat based AI where engagement from users are important then dealing with the ambiguity present and opinion based AI makes more sense.
14		3 It's animated enough to encourage having a chat with it (especially since it's a robot it maintains a level of disconnection, while not being too realistic to make me feel uneasy)	2	3		1	1	4	2	4	4	3	4	4	4	5	4	4	3	1	4 Personalisation helps keep the user engaged and like the conversational more seriously, I also think that it will create a smoother conversational flow, which helps make the most out of the user experience. Changing the appearance based on the user could help make them feel more comfortable as well, but I don't think it is as important as the actual behaviour during the chat.
15		2 cute	1	2		4	4	5	5	5	4	4	4	3	3	3	3	4	5	3	3 yes, helps feel seen and understood
16		4 neutral	2	4		4	4	4	4	3	4	4	4	4	3	5	5	3	4	3	3 yes to create connection
17		1 it felt more human like/ realistic	3	1		4	4	3	3	4	4	4	4	4	4	4	4	4	4	3	2 I think so, different people would have different preferences which may have more benefits to that individuals - a chat would probably prefer a cartoon for example.
18		4 It felt like a proper artificial intelligence figure (at least by design), so it seemed like a proper choice to experience a new interaction.	2	4		3	2	2	2	3	5	4	4	3	3	2	2	2	3	3	4 I believe it should be based on the user, if us humans draw first impressions from other humans based on appearance, then it should sound logical that would be the case the same way with an AI entity, at least subconsciously.
19		1 Human like female made me feel at ease, it is visually familiar	3	1		5	5	3	4	4	4	4	4	5	4	5	5	5	4	1	3 Appearance and behavioural characteristics are key variables in human everyday lives and therefore will be projected in any other worlds, such as AI.
20		4 It reminded me of Beyoncé's song. Also, I like the idea that it didn't have a character as an avatar.	3	4		3	3	4	2	4	4	3	4	5	5	5	5	5	3	3	3 Personally, I don't believe the appearance or behaviour should change based on the user. It would be ideal if the user could choose how to control their responses by adding extra prompts while asking questions.
21		1 She looked the most like me	1	2		3	3	4	4	5	5	5	5	3	4	3	3	4	3	3	2 I think it's important to change based on the user. Like to feel like a friend it would be better to emulate the way you speak.



44

1 Because of the human-like avatar, I feel like that's what AI companies are looking to do. Make AI more human

3

6 No appearance. AI is a piece of code. I don't want to interact with it like it's an entity or being.

1

1

1

1

3

3

3

3

3

3

3

3

2

1

6 Probably if you could see the AI's appearance while chatting with it, I think that in a world where we're disengaging from each other more and more, giving AI an appearance is dangerous and irresponsible. In terms of the importance for creating a better user experience, it's dependent on what the developer wants and what "better user experience" means. If they want lots of engagement, they can use an appealing appearance and engaging behavior to make a "better user experience" where the user can easily talk to the AI for long periods of time. But that "better user experience" isn't beneficial to the user. If the developer wants the user to interact with the AI in a healthy way then they can remove the appearance, create more disengaging behavior to prevent users interacting with it for long periods of time. That can also be considered a "better user experience".