



УДК 7.012:004.5

RESEARCH THE INFLUENCE OF ANTHROPOMORPHISM IN CHATBOT AVATAR DESIGN

MA Ning^{1,2}, KHYNEVYCH Ruslana¹

¹ Kyiv National University of Technologies and Design, Kyiv, Ukraine

² Shaanxi University of Science and Technology, Xi'an,
People`s Republic of China

maningyh@163.com, h.ruslana.v@gmail.com

This study investigates the impact of anthropomorphic design on users' trust in a chatbot's digital character. The anthropomorphic design aims to give human-like attributes to chatbots to enhance the emotional connection and trust between users and chatbots. Through literature review and empirical research, we found that anthropomorphic design can promote emotional resonance, improve communication effects, enhance user experience, and increase user engagement. Therefore, anthropomorphic design plays a crucial role not only in cultivating users' trust in the chatbot user experience but also in advancing the design of the chatbot's digital persona.

Key words: design, chatbot, anthropomorphic, avatar, user experience.

INTRODUCTION

In recent years, chatbots have become increasingly common in fields ranging from customer service to healthcare, prompting researchers and designers to explore ways to increase efficiency and user engagement. One promising approach is to apply anthropomorphic design principles to give these chatbots human-like characteristics and behaviors. Chatbot anthropomorphism is the attribution of human characteristics to non-human entities and the intentional incorporation of a human-like appearance, personality, and communication style into the chatbot design. By mimicking human visual expressions, anthropomorphic chatbots are designed to promote familiarity and rapport with users, ultimately cultivating higher levels of trust and satisfaction.

PURPOSE

The purpose of this study is to explore the impact of anthropomorphic design on the digital avatar of chatbots. By studying this issue, we aim to provide guidance for improving user satisfaction and loyalty towards chatbots and to promote advances in chatbot avatar design.

RESULTS AND DISCUSSION

In recent years, although chatbots are growing in popularity, they face challenges in building trust and rapport with users. Users may view chatbots as impersonal or robotic, leading to suspicion and reluctance to interact with them. To



address this challenge, researchers and designers are exploring anthropomorphic design principles, which include giving chatbots a human-like appearance, personality and communication style [1]. By mimicking human conversational cues, gestures, and expressions, anthropomorphic digital avatars allow chatbots to build familiarity and rapport with users, ultimately cultivating trust and enhancing the user experience of the chatbot avatar.

Designing an anthropomorphic chatbot requires considering a variety of factors, including appearance, personality, voice, and language style. Researchers have identified several design strategies to enhance anthropomorphism and foster trust in chatbots. For example, giving chatbots human-like names and avatars can make them more relevant and approachable to users. Likewise, designing chatbots with a conversational style that mimics human speech patterns (such as using colloquial language and humor) can promote rapport and trust [2]. By incorporating visual cues such as facial expressions and gestures, the expressiveness and perceived humanity of a chatbot can be enhanced. Research shows that users are more likely to trust chatbots that display empathetic facial expressions and gestures because these cues demonstrate understanding and empathy.

Additionally, designing a chatbot with a consistent and coherent personality can help users develop stable perceptions and expectations, leading to higher levels of trust and satisfaction. Empirical research provides insights into the impact of anthropomorphic design on trust in user experiences. For example, the study by Nass found that users displayed social responses, such as reciprocity and politeness, when interacting with anthropomorphic computers [3]. Similarly, Schillaci found that users rated anthropomorphic chatbots as more trustworthy and capable than non-anthropomorphic chatbots[4]. These findings suggest that anthropomorphic design can enhance user trust and satisfaction with chatbots.

Anthropomorphism has a significant impact on chatbot avatar design. By giving the chatbot avatar human-like appearance features, such as facial expressions, eyes, and micro-expressions, the emotional connection and closeness between the user and the robot can be enhanced. A chatbot avatar with an attractive, friendly or warm face can often attract users' attention more easily and create a more positive image and impression in the user's mind. In addition, the design of the avatar can also reflect the personality characteristics of the chatbot, such as humor, seriousness or friendliness, so as to be more consistent with the user's expectations and preferences, and enhance the user's trust in the robot and willingness to interact with it. To sum up, the impact of anthropomorphism on chatbot avatar design is to enhance the emotional connection between users and robots through humanized appearance features, thereby improving user experience and trust.

CONCLUSIONS

Anthropomorphic design is expected to play a key role in increasing user trust in the chatbot experience. By giving chatbots human-like characteristics and behaviors, designers can create more intimate and natural experiences in virtual interactions, thereby building closer and deeper user relationships and increasing user trust and satisfaction with the chatbot. In the current study, design strategies and empirical



findings together provide us with an in-depth understanding of the relationship between anthropomorphic design and trust in chatbot user experiences. These findings reveal how anthropomorphic design can enhance user trust in chatbots by mimicking human characteristics and behaviors to create a warmer, more intimate user experience.

REFERENCES

1. Cheng, X., Zhang, X., Cohen, J., & Mou, J. (2022). Human vs. AI: Understanding the impact of anthropomorphism on consumer response to chatbots from the perspective of trust and relationship norms. *Information Processing & Management*, 59(3), 102940.
2. F. Min, Z. Fang, Y. He and J. Xuan, "Research on Users' Trust of Chatbots Driven by AI: An Empirical Analysis Based on System Factors and User Characteristics," 2021 IEEE International Conference on Consumer Electronics and Computer Engineering (ICCECE), Guangzhou, China, 2021, pp. 55-58.
3. Nass, C., B.J. Fogg, and Y.J.I.J.o.H.-C.S. Moon, *Can computers be teammates?* 1996. 45(6): p. 669-678.
4. Schillaci, C.E., et al., *Anthropomorphic chatbots' for future healthcare services: Effects of personality, gender, and roles on source credibility, user satisfaction, and intention to use.* 2024. 199: p. 123025.

МА Н., ХИНЕВИЧ Р.

ВИВЧЕННЯ ВПЛИВУ АНТРОПОМОРФІЗМУ В ІНТЕЛЕКТУАЛЬНИХ ЧАТ-БОТАХ НА ДИЗАЙН UX TRUST

Це дослідження вивчає вплив антропоморфного дизайну на довіру користувачів до цифрового персонажа чат-бота. Антропоморфний дизайн має на меті надати людиноподібні атрибути чат-ботам для посилення емоційного зв'язку та довіри між користувачами та чат-ботами. Завдяки огляду літератури та емпіричним дослідженням виявлено, що антропоморфний дизайн може сприяти емоційному резонансу, сприяти комунікаційним ефектам, покращувати досвід користувача та підвищувати залученість користувачів. Таким чином, антропоморфний дизайн відіграє вирішальну роль не лише у формуванні довіри користувачів до взаємодії з чат-ботом, але й у вдосконаленні дизайну цифрової персони чат-бота.

Ключові слова: дизайн, чат-бот, антропоморфний, аватар, користувацький досвід.