

Narrative Scaffolding: An Interactive Narrative Strategy for Digital Humans in Museums

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INTRODUCTION

Current digital avatars in museums often function within a utilitarian "guide-and-seeker" paradigm, leaving their potential for deeper, performative engagement underexplored. This study investigates how structural design can reshape user-avatar relationships beyond simple information retrieval.

Employing an Research through Design (RtD) approach, we developed a Virtual Reality (VR) prototype featuring a Large Language Model (LLM)-driven avatar of a female worker from 1930s Shanghai, China, a city that was a major industrial hub during the nation's Republican Era. Users must choose a social role (supervisor, co-worker, or relative) before interacting, a choice that frames the entire dialogue's context and tone. Analyzing this mechanism through Celia Pearce's theory of "Playframes"¹—the implicit social rules that govern interaction—we argue that this act of choosing is a "metacommunicative" invitation, shifting the user from observer to participant. Each role establishes a unique playframe, guiding the user and the Artificial Intelligence (AI) to socially construct a shared experience in a liminal space—a transitional state between the user's reality and the historical simulation.

We conceptualize this strategy as "Narrative Scaffolding," a method that positions the user as a "co-performer" of history,² confronting them with the role's inherent ethical and emotional tensions. This research concludes that meaningful interaction with digital historical figures depends less on the AI's knowledge and more on providing invitational frameworks that enable users to actively co-create meaning.

Endnotes

1 Celia Pearce, *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds* (Cambridge, MA: The MIT Press, 2009).

2 The concept of the user as a "co-performer" who experiences interactive agency builds on the foundational theories in Janet H. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (New York: The Free Press, 1997).

Bibliography

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Murray, Janet H. 1997. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. New York: The Free Press.

Pearce, Celia. 2009. *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. Cambridge, MA: The MIT Press.

BIO

Fangnan Ma is a Lecturer, artist, and researcher at the University of Shanghai for Science and Technology. With a Ph.D. in Art Theory and experience as a visiting scholar at Northeastern University (Game Design), their work bridges theory and practice. They research interactive narrative and VR for cultural heritage while also creating art and games. Their publications explore semiotics and poetics in digital art and virtual spaces.

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