# Reimagining Anthropomorphism: Artistic Explorations in Humanizing Machines

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## Abstract

This artist presentation introduces a practice-based research endeavor aimed at exploring novel possibilities for machines in presenting anthropomorphic features. It unveils three innovative practices by Zoe Li, seeking to reimagine the anthropomorphic potential of robots. These projects delve into novel approaches to humanizing machines, employing performative anthropomorphic features that transcend overt appearances and reveal themselves through choreographed machine performance. The artistic strategy investigates subtle anthropomorphic qualities, fostering empathic connections without relying on a humanoid facade. The aspiration is to open new possibilities for human-robot interaction.

## Keywords

Installation, Robotic art, Artistic Practice, Practice-based research

## Introduction

In the exploration of the appearance of robots, Gong & Nass distinguish between Mechanoid and Humanoid robots. Mechanoid robots lack overtly human-like features, while Humanoid robots possess some human characteristics, albeit remaining easily recognizable as non-human by humans[4]. Anthropomorphism, as discussed by Fong et al, serves as a mechanism facilitating social interaction through design and behavior interpretation[1]. Walters et al found a preference for robots with a more human-like appearance among participants[6].

However, a major concern arises from the expectation of human-level cognition and empathy triggered by humanlike appearance and behavior. According to Suchman, the challenge in human-machine communication lies in the inherent differences between humans and machines[5]. Merely obscuring these differences through humanlike features or behaviors does not resolve them, as people inevitably rediscover these differences in practice [3].

Gemeinboeck & Saunders present a performative body-mapping (PBM) approach to challenge the assumption that robots need to appear human or animal-like to form connections with humans [2]. Aligned with their intention, this artist presentation introduces three artistic projects by Zoe Li to reimagine the potential anthropomorphic aspects of robots.

They explore novel ways of humanizing machines by designing performative anthropomorphic features that are not overtly apparent in appearance but are revealed through the choreography of machine presentations. The artistic strategy aims to investigate subtle anthropomorphic qualities, fostering an empathic-affective interpretation and establishing connection without relying on a humanoid appearance.



Figure 1: The exhibition view of Comb Machine: the Regulation of Hair ©Zoe Li

## Comb Machine: the Regulation of hair, 2021

The Comb Machine is a performative installation publicly exhibited at Shanghai Ming Contemporary Art Museum in 2021. The installation is constituted by four robots that interact with each other. The artist aims to demonstrate an institutional system through these interactions. The institutional system illustrates an interactive relationship between two parties, in which a ruled party has a certain degree of freedom in a power relation, if they obey the principles formulated by the ruling party.

In the installation, the ruling party is represented by a comb machine—a sculpture with a robot arm installed on a wooden frame. On the other hand, the ruled party consists of three hair entities equipped with wheels and radar. These hair entities with wheels can roam freely until the comb machine rings the bell. Once the bell rings, the hair entities are programmed to approach the comb machine and to be combed one by one, as if they are "summoned" by the comb machine. However, the

Figure 2: The act of combing, captured by the artist at the exhibition.©Zoe Li

act of combing is not necessarily aimed at tidying their hair, so they may leave with messy hair. After all, they regain their "freedom" until the next bell rings.

The conduct of combing, as portrayed in this installation, draws parallels to human-human behavior. This gesture is both compulsory and controlling, but also sometimes signifying intimacy. It is designed to narrate a power disparity between the two parties and illuminate the subtleties within their relationship. The hair entities, with their spine and wig, present a somewhat eerie appearance characterized by limited biological features. Meanwhile, the comb machine consists of a robot arm installed on a wooden structure, equipped with a comb on its gripper. The most anthropomorphic aspect of this installation lies in the interaction between the two robot parties. The exchange of freedom through rule adherence depicted here mirrors a ubiquitous theme in human society.

The robots execute repetitive and continuous performances until the museum closes, portraying an image of human interaction through the choreographed movements of the machines. This narrative unfolds despite the robots having minimal humanoid features in their appearance design.

## A Sigh, 2021

The artwork A Sigh features a machine assigned to write convincing human diaries, yet deliberately fails to do properly. Despite its body of a modified CNC machine and the ability to generate authentic-seeming diaries, it outputs only hot air, resulting in blurred marks on thermal paper. This act embodies a response of reluctance and defiance of the machine, symbolizing a sigh. It highlights the futility of attempting to mimic human diaries without genuine human experience. The artist deliberately uses hot air to react with heat-sensitive thermal paper, blurring the text, rendering the diary unreadable, and highlighting the machine's rebellious stance. In the exhibition, the mechanical aesthetic, with thermal papers featuring blurred texts, serves as the sole, obscured outcome for viewers, concealing the labor of training the AI model and its deceitful diary generation.



Figure 3: The exhibition view of A Sigh.©Zoe Li

The project strategically employs hot air to refer to a sigh, mirroring the machine's unwillingness. A Sigh differentiates itself by designing a personality for the machine, with its mechanical outer appearance, revealing an inner anthropomorphic feature as it responds humanely to its task. instead of employing humanoid appearance or behavior, the strategy to humanize machine in this project embed in the machine's response to a task. This approach aims to opening up new ways of humanizing machines, challenging the perception of them as mere tools and inviting the audience to see them as entities capable of experiencing emotions and unique experiences.
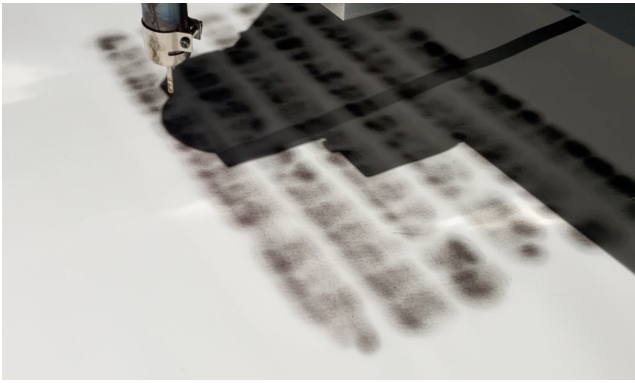
Figure 4: The close up view of the blurry text.©Zoe Li

## I Tell the Moon My Secret And the Moon Tells Me Yours, 2023

I Tell the Moon My Secret and the Moon Tells Me Yours (IT-MMSMTMY), created in 2023, features a robotic arm that capture the waveforms of gathered secrets, but only under the luminous light of the Moon. The artwork hinges on the serendipity of a clear, moonlit sky to reveal these waveforms through long-exposure photography. This dynamic of technology, natural elements, and human interaction sparks a conversation about their intertwined relationships, steering away from a human-centric worldview towards a cosmic connection. The project underscores the synergic dynamics among the unpredictable natural world, a data-driven robotic mechanism, and humans, aiming to forge a new understanding of their interconnection.



Figure 5: The documentation of the process: the robot arm and the Moon. ©Zoe Li.

As in certain cultures where people confide their secrets to tree holes, sharing secrets with nature represents humans' inherent intimacy with the natural world. In this artwork, secrets are disclosed to the Moon via a robotic arm. This robotic system here are entrusted by humans to convey the secrets to the Moon. This challenges the view that technology separates us from the natural environment, instead positioning the robotic system as a mediator that bridges humans and nature, akin to a conduit or priest in the ritual of sharing secrets.

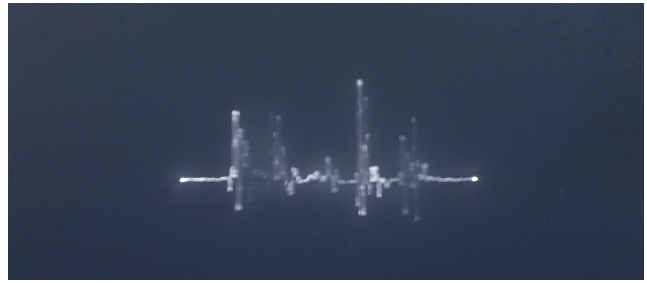Another anthropic reference in the project is conveyed



Figure 6: One of the final outcomes of the photography, created by the robot arm and the Moon.©Zoe Li

through the synergistic dynamic between the robot arm and the Moon. The photography involves both parties to achieve compelling visual imagery, but there is no way the Moon can be pushed to be on position. Thus the scene of the robot arm depicting the pattern of the waveform while awaiting the emergence of the Moon from behind veils of clouds, has a reference to the inner conversation between the poets and the Moon. In ancient Chinese culture, the Moon served as a muse for countless poets, inspiring introspective dialogues and heartfelt verses beneath the vast expanse of the night sky. Despite the behavior or appearance of the robot is nothing anthropomorphic, the entire synergistic scene evokes a cultural and historical resonance, echoing the reference to the "moonlit poet".

## Conclusion

In conclusion, this artist presentation presents three artistic projects by Zoe Li, redefining the anthropomorphic potential of robots. Comb Machine creates a narrative of human interaction through limited humanoid appearance. A Sigh humanizes machines by assigning a personality, challenging perceptions and inviting viewers to see machines as entities with emotions. Lastly, ITMMSMTMY narrates humane reference through the synergistic narrative between the robot arm and the Moon. Together, these projects intend to resonate the audience with a subtle anthropomorphic performative reference, aiming to open up new possibilities to humanize machines.

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## Author(s) Biography(ies)

Zoe Qi-Jing Li is a PhD student in Computational Media and Arts at the Hong Kong University of Science and Technology (Guangzhou). She is also an interdisciplinary artist investigating the abstract roles of human beings in a technological world and exploring the position of "self" within a system. She exhibited her project in Ming Contemporary Art Museum, xCoAx 2021, 2022 Beijing Biennial, Macao International Art Biennale 2023, TEI 2024, etc.