Tell Me About the Future: Probing Imagined Alternative Realities Using Generative AI and Speculative Design

RAY LC
Independent Artist
Hong Kong SAR, China
LC@raylc.org

Abstract

Our own constructions of reality are not really realities. They are embedded in our own biases and desires for wanting to see things in particular ways, and they reflect an attempt to fill in gaps of knowledge, often with no evidence and little knowledge. I will show works that explore the way we imagine these realities using Generative AI (GenAI) as an agent for prototyping our alternative futures and realities. I will show work exhibited in Shanghai, Goethe Institute Hong Kong, and National Asian Cultural Center Gwangju, supplemented by published work in CHI and CSCW demonstrating the way that GenAI can enable us to verbally and visually describe imagined worlds. I will also describe the limitations of GenAI, and what strategies we take to overcome their biases and constraints, showing how these insights can be exhibited in technology-mediated contexts to reveal to visitors the process and role of research-centered speculative storytelling.

Keywords

GenAI, speculative design, collaborative design, generative artworks, AR/VR, robotic art.

Introduction

Our memories of the past are full of our own interpretations of what these past should be like. For example, the reconstructions of past historical sites like Knossos, Greece, show corridors named for princes and portraits referencing French ladies. We see in the past what we want to see. So it is with the future. In imagining the future we put into these visions what makes us uniquely human today: our inconsistencies, our priorities, our desires. The record of these current visions of the future are part of the heritage record that future generations can look back on, much like sci-fi films of the 1950-60s show both the concerns (*Forbidden Planet*) and optimistic views (*2001: A Space Odyssey*) that power our imaginations for the future.

This talk describes how the recent breakthrough in Generative AI (GenAI) empowers those without illustration and critical writing skills to prototype the future in the forms of visualizations and speculation. We describe three cases where GenAI is applied to speculative design approaches for artistic enquiry: (1) using GenAI to interpret past and future content that we no longer have access to, (2) enabling local residents to express and imagine their local cultural heritage using GenAI, and (3) showing how historical events can be reinterpreted in speculative forms using GenAI and exhibited with the support of robotics and immersive technology.

Works Described

The artworks discussed in this talk includes (Figure 1):

- FRAGMENT OF OUR IMAGINATION - an installation including photos of grandparents who died before the artist and the collaborating photographer was born. The captions are alternative takes on the photos generated by ChatGPT and curated by the collaborating humans (Figure 3).
- THE PRESENT IN THE FUTURE IS THE PAST - a set of images of cultural heritage sites imagined by collaborating participants with the help of Stable Diffusion in a GenAI workshop for making images about the historical sites as part of an urban walk in the city (Figure 2).
- ARCHIVE FOR/IN THE FUTURE - an large-scale installation showing a historical event in Gwangju, South Korea, as interpreted in the form of ChatGPT conversations and robotic movements that translates that conversation into a language of the future (Figure 4).

Studies discussed are published works led by the artist:

- Fu KX, Wu RS, Tang YY, Chen YX, Liu BW, **LC R**. (2024) “Being Eroded, Piece by Piece: Enhancing Engagement and Storytelling in Cultural Heritage Dissemination by Exhibiting GenAI Co-Creation Artifacts.” In *Designing Interactive Systems Conference (DIS’24)*, July 1-5, 2024, IT University of Copenhagen, Denmark. ACM, NY, USA. 18 pages. Online.
- Wu RS, Gong CL, Chen L, Su JY, **LC R**. (2024) “The Present in the Future is the Past: Applying Generative AI to Visualize and Imagine Cultural Heritage Sites in Both Augmented and Physical Reality.” In *Proceedings of the 29th International Symposium on Electronic Art (ISEA’24)*, Brisbane, Australia, 21-29 June. Online.

Documentation of the exhibitions:
https://urbanwalkhk.wordpress.com/
https://recfro.github.io/fragment-imagination/

Figure 1. Exhibitions showing how GenAI is applied to visualizing and speculating on future and imagined scenarios. **(Upper Left)** Photographs of the artists' grandparents with captions curated from ChatGPT interpretations of the photos in a collaborative exhibition at Shanghai Acentric Space. **(Upper Right)** A robot arm and immersive environment in VRChat enacting an event from the past. Robot movements are designed based on ChatGPT text output from designed characters in an historical event. The robot exists in a future form in the VRChat environment. **(Lower Left)** Projected environment showing how visitors can scan cultural heritage sites. **(Lower Right)** Images created by the residents in describing their relationships, connections, and memories of cultural heritage, shown as robot sketching them over time.

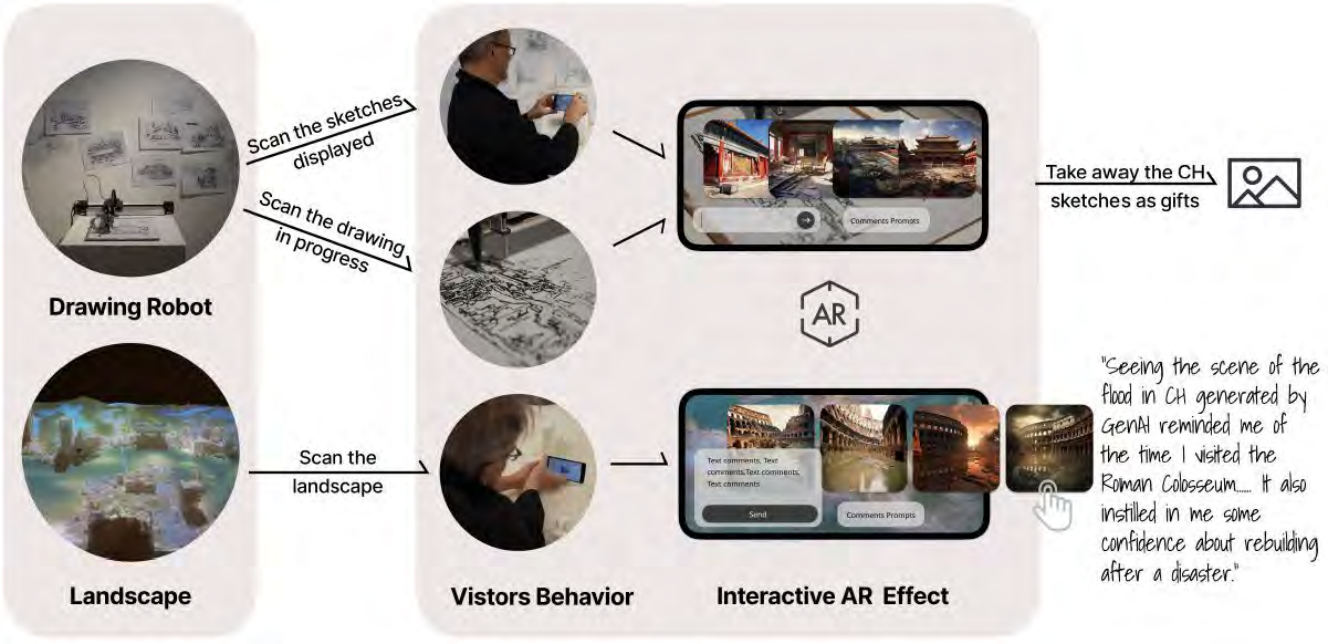

Figure 2. Diagram of exhibition flow for "The Present in the Future is the Past." The images are created by workshop participants in telling their stories and imaginations about cultural heritage sites. These images are shown both in AR form in the projection and as robot sketches.

Figure 3. Exhibition showing works from "Fragment of Our Imagination." **(Upper Left)** Exhibition at Shanghai Acentric Space. **(Upper Right)** Collected images and reconstructed diary book of people we know but never met in real life. The photos are the artists' grand-parents who died before the birth of the artist, or when the artist was very young. Our interpretation of the grand-parents are thus from other people. **(Lower Left)** A custom radio of recordings of music and sounds from grand-parents' daily lives as told to the artists from others familiar with the grand-parents. **(Lower right)** Images of grand-parents as interpreted by Generative AI, told through stories constructed by ChatGPT.

Figure 4. The reimagined future in "Archive for/in the Future" to present at National Asian Cultural Center Gwangju. The robot avatar is represented in VRChat as an agent consisting of multiple spheres speaking in a language of the future. The location is a reimagining of the center of the city of Gwangju imagined from the future, taking into consideration the potential biases and misconceptions of GenAI.

Summary

Probing perspectives of the future is difficult, because we do not know how the future will view us. This is evidenced by the biased and frequently flawed ways we misinterpret the past. Standing from the future, how might we be viewed in the lens of history? Recent breakthroughs in GenAI provides a way for non-experts to prototype their own futures and create speculative design scenarios for the future in a concrete fashion. This enables artists to create participatory and artist-centered en-gagements to probe the future, allowing us to apply speculative design to envision future scenarios with GenAI tools.

This talk uses the examples from the artists' own works, both exhibition and research outputs, to discuss speculative design and dissemination of the design as supported by GenAI tools. Works described include: (1) using GenAI to interpret personal memorabilia of people involved in the artists' lives and have never met; (2) allowing local participants to describe their recollection and imagination of cultural heritage locations even without the use of specialized illustration skills; (3) using robotics and GenAI to provoke remembrance of historical events that are interpreted in the lens of todays' technology. These examples provide hands-on discussion of the way GenAI and speculative design work cooperatively to support artists' probes about long term impact of technology.

Artist Biography

RAY LC's practice creates interaction environments for building bonds between humans and machines. He uses human-computer interaction and speculative narrative approaches in diverse media to probe the ways humans adapt to technologies and machines in the context of spatial environmental influences. He takes perspectives from his own research in neuroscience (Nature Communications) and in HCI (CHI, CSCW, HRI, DIS) in his artistic practice, with notable exhibitions at BankArt, New York Hall of Science, Kyoto Design Lab, Elektra Montreal, Ars Electronica Linz, Saari Residency, New Museum, NYC Short Documentary Film Festival, NeurIPS, CVPR, Elektron Tallinn, Floating Projects HK, Jockey Club Creative Arts Centre, Osage Gallery, Macau Art Biennale, Videotage HK, Goethe Institute, Hong Kong Arts Centre, PMQ, Science Gallery MSU, National Asian Culture Center Gwangju, ISEA, IEEE VISAP, SIGGRAPH Asia.

RAY comes from Cal Berkeley EECS-Math (BS), UCLA Neuroscience (PHD), Parsons School of Design (MFA). He has been awarded by Japan Society for the Promotion of Science, Verizon Connected Futures, Adobe Design Award, Microsoft Imagine Cup, Kone Foundation, Davis Peace Foundation, NY Foundation for the Arts, Hong Kong Arts Development Council, Hong Kong Research Grants Council General Research Fund. RAY founded the Studio for Narrative Spaces: https://recfro.github.io/