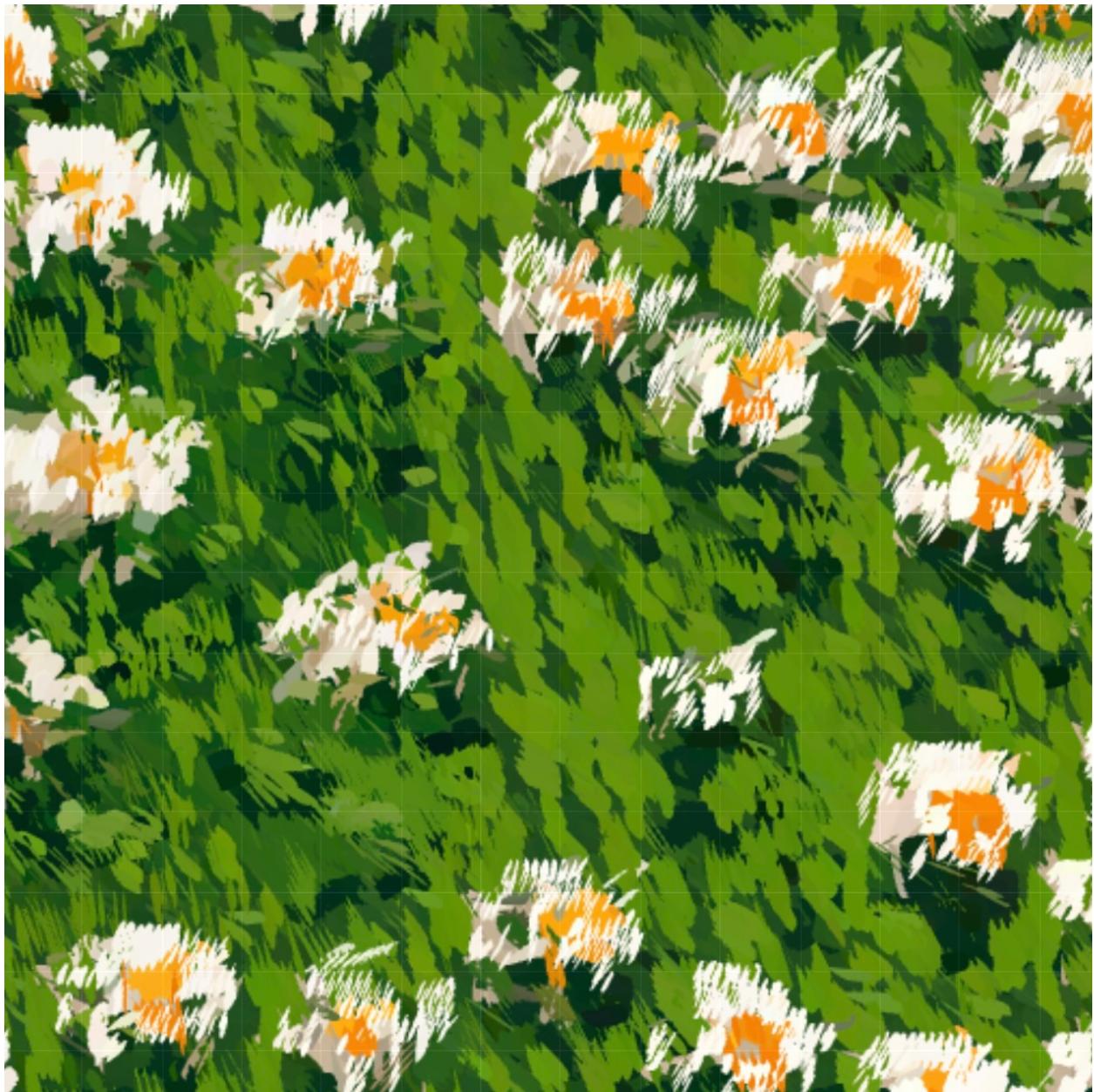


Hao Wang – Phantom Prairie (1)



Phantom Prairie

By Hao Wang

Interactive exploration of perception and curiosity about the 'illusion of life' in a digital experience.

<https://youtu.be/xItGOM7CT1s>

Introduction

Phantom Prairie is a digital interactive artwork in which the audience uses gesture-controlled screen changes to discover hidden fantasy creatures in a digital grass. The project is inspired by electronic pets such as Tamagotchis, and explores the audience's perception of and curiosity about the 'phantom of life' in the digital experience, creating a connection between the virtual and the real, and perpetuating the concept of emotional attachment between electronic pets and humans. The work combines different theories to explore the interaction between virtual creatures and the audience, emphasising that the meaning of life is not only derived from the existence of the individual species, but is also formed through interaction and understanding with human beings. It also suggests that the digital world is not only a static display, but also an ecosystem full of changes and interconnections, where every action of the audience affects the evolution of the system.

Concept and Background Research

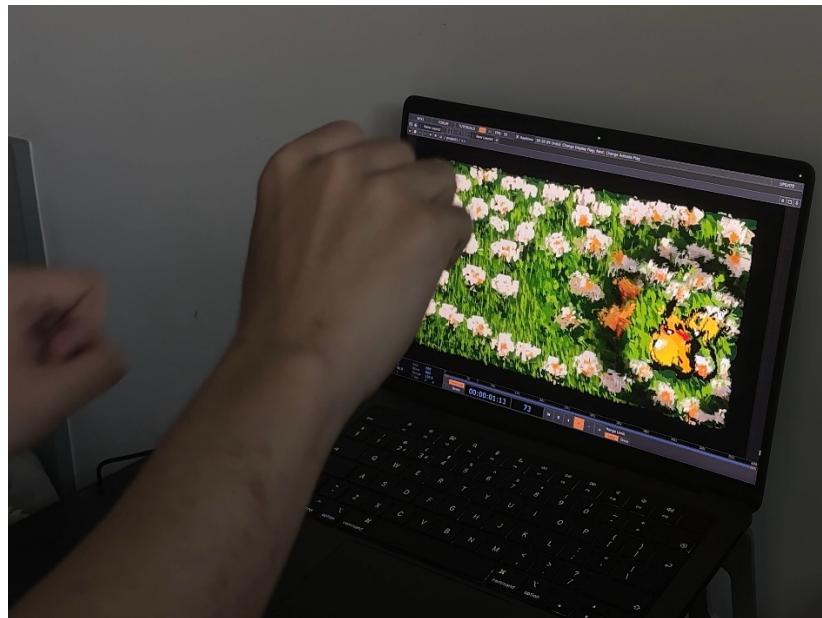
This project is based on the theme of 'Digital Illusions of Life', exploring the emotions and imaginings of people's perceptions of life in virtual environments. It is inspired by early electronic pets (such as Tamagotchis) that I have received feedback from my three semester projects, and combines digital ecology and socio-ecological mind theories that I have researched in the last semester. I chose this theme also from my continuing exploration of the connection between myself and environment. For example, people's desire to fulfil their own needs and their interactions with the things around them are constantly influencing changes in their ecological networks, both in the electronic and physical environments and so on.



About the concept, the project refers to Bruno Latour's Actor-Network Theory and Gregory Bateson's Steps to an Ecology of Mind. I want to emphasise the network of relationships between virtual creatures and audience, rather than the separate existence of the creatures themselves. The ecological mind exists not only within the individual, but is also in the environment and interactive processes, so that the

perceptual processes of virtual creatures and audience are a co-constitutive ecosystem rather than a unidirectional manipulative relationship.

Regard to the computational background, the project refers to the First International Conference on Artificial Life's exploration of 'life simulation' (Christopher Langton, 1989). For example, by artificially constructing simple systems to produce complex behavioural patterns that appear to have a 'sense of life'. At the same time, simple modes of interaction, such as using the audience's body movements like flicking and opening their hands, are used to explore, discover and connect with the virtual creatures.



Technical Implementation

This project is developed based on TouchDesigner, which uses image processing, gesture recognition and other technologies.

On one hand I use MediaPipe. I chose to achieve gesture tracking through the MediaPipe module to capture the audience's hand movements as the main input method for controlling the changes of the electronic grass. Because MediaPipe has a smooth and sensitive interaction experience with real-time, and is simple and cheap to use.



On the other hand I use Image processing such as Superquad and Noise, which are used to create image models that simulate the fluctuation and reaction of the grass to increase the change and realism of the image. And combined with gesture input, create the visual illusion of 'moving the grass' to enhance the connection between the audience and the virtual environment.



Reflection and Future Development

Regarding this project, I believe that I have only initially created the interaction mode and visual effects of the virtual ecology, and that the behavioural patterns of the virtual creatures are still static, lacking more complex self-evolution or multi-layered responses to the audience's actions. This lack of 'life' greatly diminishes the connection between the virtual creature and the audience.

In the future, I would like to introduce simple artificial life algorithms to allow the creatures to exhibit 'personality' or adaptive behaviour; and to improve the interaction system to add multi-sensory feedbacks such as sound and touch to explore the different dimensions of virtual life. In addition, I think this is a good project to use a large screen, for example a very long screen on a wall to create a more environmental and ecological feel.

References

- [1]. Wikipedia. (n.d.) Tamagotchi. Available at: <https://en.wikipedia.org/wiki/Tamagotchi> (Accessed: 27 April 2025).
- [2]. Bateson, G. (1972). Steps to an ecology of mind. Chicago: University of Chicago Press.
- [3]. Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.