Artificial Nature

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ABSTRACT

Artificial Nature is a trans-disciplinary multimodal interactive art installation and a research subject investigating the application of bio-inspired system theories in the production of engaging aesthetic immersive worlds. As a creative ecosystem, three virtual strata - inanimate, animate, and behavioral - truly captivate the viewer through multi-sensory interactions by drawing (touch), singing (audio), dancing (movement, visual) and navigating (movement, touch).

High-resolution video documentation of the project and further information about the exhibition can be found at the project website: http://www.mat.ucsb.edu/~wakefield/artificialnature

Categories and Subject Descriptors

J.5 [**Computer Applications**]: Arts and Humanities: Fine arts

General Terms

Algorithms, Performance, Design, Experimentation, Theory

Keywords

Creative Ecosystem, Art-as-it-could-be, Multimodal Interaction, Immersive art installation, Bio-inspired, Computational Sublime, Artificial Life, Emergence.

1. INTRODUCTION

Our motivation to create Artificial Nature [1] immersive ecosytem is to develop a deeper understanding of emergence and creativity as a form of art, play and research. By taking inspiration from nature's creativity and recognizing the potential beyond the known and the physical, the theoretical component of our research emerge in creation of multimodal art installations (see Figure 1).

2. ART-AS-IT-COULD-BE

The suffix *-as-it-could-be* [3] indicates a shift in thought from the actual to the possible, a shift in thinking beyond the imaginable. This mode of thought has had a vital role, both in our cultural development and in our individual learning processes [2]. Computation also offers the potential to explore the possible: to

reveal the world in ways that only automated technology can. It is for this reason that bio-inspired computational models are so appealing for creative research.
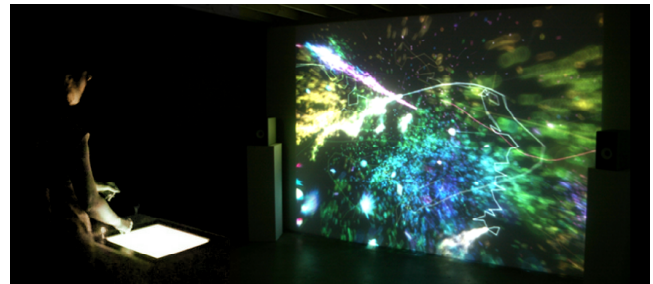

Figure 1. Artificial Nature as an Infinite Game, the Total Museum of Contemporary Art, Seoul, Korea, August 2008.

3. WORLD-BUILDING
3.1 Inanimate, Animate, Behavioral Field

The current iteration of the design is an ecosystem as an agent-based model, in which agents interact with (at least) three distinguishable forms of environment. The inanimate is a dissipative field of matter-energy upon which agents subsist, the animate field describes the evolutionary flow of genetic material, and the behavioral indiactes emergent social organizations.

3.2 Multimodal Interaction

By using the 2D touchscreen and six-degrees-of-freedom navigator together, drawing 3D forms are possible. In addition, involuntary activity of the visitor is detected through the camera and microphone, creating a constant source of turbulence in the flow field by multimodal senses (see Figure 2) causing the chain reaction. The shift to exhibit in the CNSI Allosphere promises to extend this immersion to the visual through 360-degree stereographic projection as well as profound aural immersion with hundreds of speakers [3].
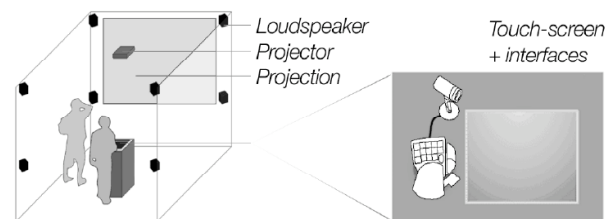

Figure 2. View of the installation, with detail: the touchscreen, navigation interface and camera-microphone input.

3.3 Implementation

The current ecosystem has been developed using LuaAV [4].

4. REFERENCES

[1] Project Webpage:
http://www.mat.ucsb.edu/~jiharu/prj/artificialnature/

[2] Sternberg, R. J. 1998. Handbook of Creativity. Cambridge University Press.

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[4] California nano systems institute allosphere. http://www.mat.ucsb.edu/allosphere/.

[5] Smith, W and Wakefield, G. 2008. Computational audiovisual composition using Trans-disciplinary Digital Art. Sound, Vision and the New Screen, page 16.