Selected Artificial Natures, 2017–2018

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Artificial Nature is a research-creation collaboration co-founded by Haru Hyunkyung Ji and Graham Wakefield in 2007. It has led to a decade of immersive installations in which the invitation is to become part of an alien ecosystem rich in feedback networks. Here we present four recent works in this series between 2017 and 2018.


Inhabitat

Inhabitat is a mixed-reality artwork of creative exploration within an alternate ecosystem of life-forms and a playful engagement with the complex interconnectivity of nature. It was exhibited at MOXI, The Wolf Museum of Exploration + Innovation, Santa Barbara, USA, from August 2017 through January 2018, receiving around 65,000 visitors. Inhabitat was born out of a desire to bring biologically inspired complex systems into human-scale physical spaces while displacing the human from the center of the world. Inhabitat is a single world that awaits active observation and playful engagement through three distinct perspectives of scale and agency—three ways to see with other eyes. At the macro-scale, the entire world is experienced as projection-mapped landscape of sand upon a hand-sculpted substrate that forms the centerpiece of the exhibit. Visitors may wander freely around the landscape observing the behaviors of the alien life-forms that inhabit it as they busily forage, metabolize, reproduce, and emit sounds. A mediated meso-scale view of the world is projected onto the museum wall behind. By donning a virtual reality (VR) head-mounted display, visitors enter the world at the micro-scale.

Image 2. A participant wearing a VR headset exploring the Inhabitat world in the first-person micro-perspective.

Image 3. Inhabitat. Haru Ji & Graham Wakefield. Sand-sculpture augmented reality, head-mounted virtual reality, large-scale projection. Interactive Media Theater, MOXI (The Wolf Museum of Exploration + Innovation, Santa Barbara, USA. 2017-08-11 - 2018-01-08 (Commissioned). A participant interacting with the Inhabitat world at the macro-perspective. Behind the participant is a third-person perspective as the camera follows one creature in the world at a time.
Conservation of Shadows

Conservation of Shadows is a site-specific mixed reality installation artwork for the Seoul Museum of Art Chang-go in the Seoul Innovation Center, Korea. This gallery was previously occupied by the Korea Center for Disease Control and Prevention for medicinal storage and animal experimentation. This work responds to very specific history of the host venue as a former centre for disease control and reagent storage, through a central conception of shadows as shared physical images between visible and invisible worlds. For this historically charged space we imagined unknown new beings growing fond of the wet texture of old wood, the fragrance of sunshine smeared between cracks, and the quietness of murmuring and whispering. To let them live, we extended senses to mix realities surrounded by softly ringing bells and the crunch of salt underfoot as their shadows pass by; and an alternate perspective through head-mounted display in which we become the shadows around which new beings play.
Insuperposition

*Insuperposition* is an installation constituting an immersive, multi-perspective virtual ecosystem of vegetal and motile creatures subsisting on island-like topologies. Visitors experience the work as mixed reality: an ecosystem in which, through various interfaces, they become one component among many. The topologies are physical sculptures of CNC-cut cardboard covered with a non-drying sand to allow continual reshaping, sensed by depth cameras and projected upon from above. Visitor’s shadows destroy and referilize the land, and movements distribute thousands of seeds through the spaces between islands. With the VR headset, visitors are shrunk to around one inch in height upon the islands, surrounded by foraging quasi-species lifeforms, chirping their songs around the worlds. The change of spatial scale is echoed in a change of temporal scale on the large gallery wall, where a time lapse at a slower vegetal phenomenology scanning around the islands gradually unfolds. The interfaces and boundaries of this ecosystem, its conditions and its regularities, are probabilistic and responsive to human interaction, however the importance of the human is limited. While you can become part of the ecosystem, your role is not dominant; the world will also thrive without you. It is an infinite game evolving from inside and outside, and an alternate world in superposition to us.
Infranet: Gwangju

Our city is an organism of infrastructure and transport. Born curious, we observe it, explore it, and metabolize, taking on views contagiously, excitedly, or by sway. Sometimes our associations are too scattered, sometimes too close-knit. The living Gwangju we draw observes itself, spawning immune responses against overwhelming communicability, evolving variety over variety. We may become more or less factory, farm, or forest. Let us see what unfolds.

Infranet: Gwangju is a generative artwork interweaving machine learning and evolutionary algorithms in a population of artificial life agents, thriving upon geospatial data of the infrastructure of Gwangju city as its sustenance and canvas. Each agent has a neural network open-endedly developed through the technique of neuro-evolution of augmenting topologies. However the genetic information that defines the neural networks is not simply inherited, but spreads rapidly through horizontal (lateral) gene transfer, as a form of social network communication between agents. Each agent has a goal to draw out geospatial features such as commercial or residential buildings,
water or electricity tracks, as well as various roads and pathways of Gwangju city. Then through sync (entrainment) pulses, what has been learned is absorbed by the most differentiated neighbors. Observing eyes continuously surveil agents, however they appear to produce ever-changing patterns without need for extra regulation. It an aesthetic-cybernetic experiment in homeostasis as precursor of heterostasis.

Haru Ji is a media artist exploring the subject of life in art through artificial life worldmaking, and co-creator of the research project, Artificial Nature. She holds a Ph.D. in Media Arts and Technology from UCSB and is an assistant professor in DPXA & the Digital Futures programs at OCAD University in Toronto, Canada. Artificial Nature is a collaborative research-creation project since 2008 concerned with the creation of immersive virtual ecosystems. Artificial Nature artworks have been presented in art festivals, conferences, and venues including SIGGRAPH, ISEA, EvoWorkshops, La Gaite Lyrique, ZKM, CAFA, MOXI, the AlloSphere, and Seoul City Hall, and recognized in the 2015 VIDA Art & Artificial Life competition and the 2017 Kaleidoscope Virtual Reality showcase.
Graham Wakefield is an artist-researcher and software developer exploring the liveness of computation across immersive media. As Assistant Professor in Computational Arts and Canada Research Chair in Interactive Visualization he directs the Alice Lab at York University. The lab develops transferable knowledge and creative coding technology as well as intensifying computationally literate art practice in the construction of responsive artificial worlds experienced through rapidly emerging mixed/hybrid reality technologies including both Virtual Reality (VR) and Augmented Reality (AR), including the Artificial Nature series. Inspired by the creativity of nature, its research-creation program leverages strong simulation and the self-modifying capacity of computational media to create artificial worlds whose rules can be rewritten while participants interact within them for heightened levels of human-machine interaction and intensified aesthetic engagement using the whole body.

Image 8 Infranet: Gwangju
Haru Ji & Graham Wakefield. Projections, Sound, Evolutionary Neural Networks, Geospatial Visualization.


Infranet: Gwangju website: https://artificialnature.net