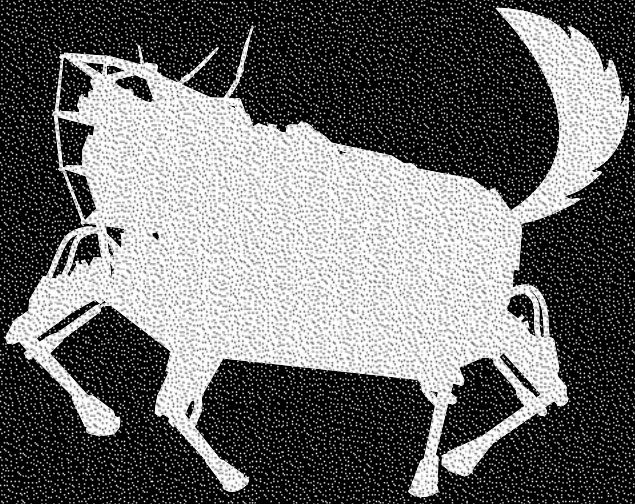
March 11 – June 24, 2022

MACHINE WILDERNESS



AT ARTIS AMSTERDAM ROYAL ZOO

RESIDENTS Driessens & Verstappen, Heather Barnett, Thomas Thwaites, Ivan Henriques, Antti Tenetz, Špela Petrič and Ian Ingram

zone2source / FoAM

March 11 – June 24, 2022
field experiments
at ARTIS Amsterdam Royal Zoo

ORGANIZED BY
Theun Karelse (FoAM) and
Alice Smits (Zone2Source)
in collaboration with ARTIS

RESIDENTS
Driessens & Verstappen
Heather Barnett
Thomas Thwaites
Ivan Henriques
Antti Tenetz
Špela Petrič
and Ian Ingram

MACHINE WILDERNESS

Machine Wilderness explores how we can rethink the way we design our technologies in relation to complex ecosystems. In a time of climate crisis and rapid biodiversity loss we need to move from a human centered technological sphere to one which takes into account and collaborates with all life on earth.

Can machines help us rejoin the great conversation with life?

Complex machines have been part of our environment for many centuries. Pioneers like Ismail al Jazari already made programmable automata around 1200 AD. But human infrastructures came to really dominate the planet since the Industrial Revolution. Edward O. Wilson described our current age of mass extinction as the 'Age of Loneliness' towards which many of our technologies have contributed. Machines populate a planet still teeming with a bewildering array of life, but we tend to create them only with human contexts in mind. What if we include the other 99,99% of life? What would machines be like if they related directly to plants and animals, fungi and natural processes? What could they reveal about the lives of other beings? Can our tools help us rejoin "the Great Conversation" among life on Earth?

Technology in relation to the environment is often approached as a means to 'solve' environmental problems. Machine Wilderness certainly does not promote applying robotics to environmental problems, but instead it asks which technology we want to design towards which kind of future. In contrast to biomimicry, the natural world is not seen as a source of inspiration for human design, but as ecosystems in which we and everything we produce are intimately entangled. Our machines have become an intrinsic part of our landscapes, but we have little understanding how they relate to other life forms and processes in the ecosystems they are placed in. But even though technology has alienated us from nature, it also has brought us closer by making visible earth's processes and showing us life forms so small that our senses can not perceive them. Can we design technologies which connect us more deeply and create symbiotic rather than destructive relations with the living worlds of animals, plants and fungi and reveal blind spots in our relationships to other kinds of beings or environmental processes?

In 2015 we launched *Machine Wilderness* with a symposium in ARTIS. Since then we bring scientists, researchers, artists and designers together to explore—in specific landscapes which serve as case studies to address different conditions and local environmental cmplexity—how we can design our technologies as part of complex ecosystems. This takes shape in exhibitions, workshops and expeditions around field experiments in which transdisciplinary teams work on location for a period of time.

ARTIS offers a unique opportunity to conduct research in a public setting in which the complex modern relations between humans, animals, plants and microbe's can be observed.

ARTIS stands for Natura Artis Magistra, or 'nature is the teacher of art and science'. Ever since its inception in 1838, ARTIS has been an educational park that promotes inquiry-based learning about the relationship between humans and other living organisms. ARTIS has the ambition to go back to its beginnings connecting art, science and nature as a meeting place where the debate is facilitated about how people value, understand and treat 'nature' in the 21st century. *Machine Wilderness* gives shape to this ambition of ARTIS in an extensive program with ARTISt in residencies around presentations, workshops, experiments and a symposium in which we temporarily change the ARTIS dictum into: Natura Machinis Magistra (nature is the teacher of the robots).

Zone2Source is a platform for art, nature and technology in the Amstelpark Amsterdam www.zone2source.net. FoAM is a transdisciplinary network working across art, science, nature and everyday life www.fo.am www.machinewilderness.net.

[foam] zone2source ARTIS

Machine Wilderness is supported by: Stimuleringsfonds voor Creatieve Industrie, AFK, Prins Bernhard Cultuurfonds, Vrienden Loterij Fonds

creative industries fund NL · amsterdams fonds voor de kunst · Cultuurfonds · Vrienden Loterij Fonds

The residency of Heather Barnett is in addition supported by Central Saint Martins and the residency by Špela Petrič is part of her research in Smart Hybrid Forms at the Art Science Lab Hybrid Forms at the Vrije Unversiteit

PUBLIC PROGRAM

OPENING

Machine Wilderness

Friday, March 11, 2022
17.00–19.00 hrs
ARTIS-Planetarium

SPEAKERS

Erik de Jong (former ARTIS hoogleraar)
Alice Smits (Zone2Source)
Theun Karelse (FoAM)
Driessens & Verstappen
Špela Petrič
Ivan Henriques

During each ARTISt in residence period there will be an Open Studio on the Wednesday afternoons from 15.00–17.00 hrs during which the artist will give a workshop, expedition or demonstration. On the last Thursday of each residency the artists will give a final presentation in the Ontdeklokaal. To join the events an entrance ticket for ARTIS is required. During their explorations in ARTIS the artist will wear a vest 'Kunstenaar in ARTIS' and can be approached by the public for conversations about their work.

For program details check
www.artis.nl/machine-wilderness

RESIDENCY

Driessens & Verstappen

March 11–April 1, 2022

STUDENT PROGRAMME

ArtScience Interfaculty

March 21–31, 2022
Why Look at Animals
course led by Cocky Eek

RESIDENCY

Antti Tenetz

April 2–9 and
June 20–24, 2022

RESIDENCY

Heather Barnett

April 2–14, 2022

RESIDENCY

Ivan Henriques

May 21–June 9, 2022

RESIDENCY

Thomas Thwaites

May 21–June 9, 2022

RESIDENCY

Špela Petrič

June 11–24, 2022

RESIDENCY

Ian Ingram

June 11–24, 2022

CLOSING EVENT

Machine Wilderness

June 24, 2022
Machine Wilderness art-science fair
at the Groote Museum

Machine Wilderness the image for the programme since 2015, Credits: Theun Karelse

Driessens & Verstappen

KEYWORDS

artificial intelligence
observing
perception

Maria Verstappen and Erwin Driessens like to work with technology that is not entirely under the control of the artist. This is the case with *The Spotter*. *The Spotter*, first developed for a *Machine Wilderness* exhibition at Zone2Source in 2018, is an artificial intelligence that looks for animals and makes its own 'dream images' of them. For *The Spotter*, ARTIS is a paradise of unfamiliar shapes and colours, but Maria and Erwin have chosen four favorite spots: the Mandrills, Inca terns and Alpine ibex. ARTIS has a long tradition of artists observing and portraying animals: Natura Artis Magistra. *The Spotter* also looks at the animals and slowly forms its own impression of them. Maria and Erwin document the development of what *The Spotter* sees in a video.

QUESTION

Can a robot dream about nature? How can a computer recognise a bird and how do we actually do that?

"ARTIS has a long tradition of artists who work from observation. The drawings and sculptures of the animals are always idealised poses, in which the—for humans—characteristic external features are emphasised. Our Spotter looks differently: although the animal is recognised, for the machine each pose is equally valid. All observations are studied and processed into dream performances. The animations show how an artificial brain looks, interprets and fantasizes. In this way, this AI art fits well into the long tradition of nature observation."

Portrait
Erwin Driessens training the Spotter during *Machine Wilderness* in Amstelpark at Zone2Source Credit: Driessens & Verstappen

Work
The Spotter overlooking the Amstelpark at Zone2Source. Credit: Driessens & Verstappen

Work
The Spotter's imagination of birds. Credit: Driessens & Verstappen

Antti Tenetz

KEYWORDS

machine learning
animals
identification
taxonomies

Antti Tenetz lives in Finland and calls himself an ‘artist/naturalist’. He studies animals like wolves, reindeer, birds of prey and salmon, but also accompanies scientific expeditions as a guide through the landscape. Antti proposes to do an experiment in ARTIS with an artificial intelligence which is taught to recognise only Arctic animals. He then will introduce it to the animals of ARTIS. What happens when a computer that only knows reindeer and salmon, sees elephants and crocodiles? How does this relate to drawings by people who had never seen such animals, but only heard of them in stories from travellers, like the famous drawing by Dürer of the rhinoceros? Does naming species after something we already know affect our view of them? Is a sea lion really like a lion and a flying fox like a fox? Do we humans understand the unknown by comparison with the known?

QUESTION

How do exotic animals challenge our perception?

“In Finnish, the words for forest and bear are the same. The bear is the bearer of the forest. Animals have a deep meaning and I like to follow polar animals into their world. Underwater with the arctic trout, or in the air with the hawk, or the bear in the forest. When you are with them in an enclosure, the environment may be very different, but at its core the animal remains the same, you are in there with the wolf or the polar bear. Now I bring a machine that only knows the arctic animal world to the exotic world of ARTIS. How does artificial intelligence deal with the unknown? Where does it grab onto features? Maybe we can work on a field guide for machines. A field guide to machine wilderness.”

Portrait
Antti hiking through the Finnish Arctic during *Machine Wilderness* fieldwork. Credit: Theun Karelse

Render
Forest Moving, imagery generated through artificial intelligence. Credit: Antti Tenetz

Heather Barnett

KEYWORDS

collective intelligence
micro life
staging organisms

London based artist Heather Barnett works with living systems and imaging technologies, exploring the collective intelligence of superorganisms such as slime molds and ant colonies. In ARTIS she gives stage to animals that are not cared for by ARTIS, but who live incidentally in the park. Through observations and interventions on location, Heather makes visible the unnoticed ant populations resident in ARTIS and draws attention to their complex social behaviors. She approaches ARTIS as a framing machine, which includes and values certain kinds of lives, while excluding others. Her work invites us to question why we look at animals, which animals we choose to observe and how we value what we find. Heather develops workshops in which people playfully explore the organisational skills of ants and slime mold populations. Using improvised observational devices Heather asks us to reconsider how we relate to these self-organised and highly social organisms underfoot.

QUESTION

If we look at the zoo as a framing device how can it include and value other life forms?

"Individually ants are not that smart, but collectively they form a global intelligence, the colony operating as a superorganism. Through field studies and public participation activities I want to draw out the complex behaviours of the ants and draw in the curiosity of the visitors."

Protrait
Heather Barnett

Work
Resilient Topografies. Credits Heather Barnett

Ivan Henriques

KEYWORDS

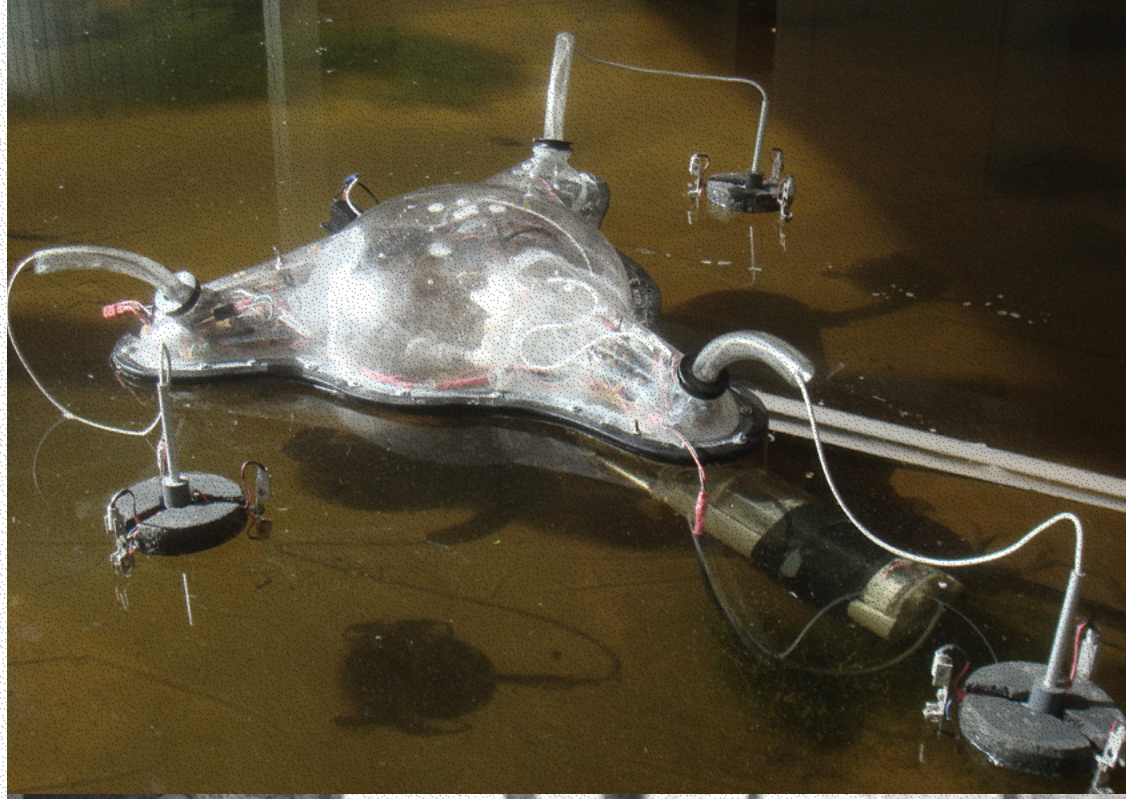
bacteria
microbial cultures
architectures
living sculpture

Ivan Henriques, a Brazilian artist based in The Netherlands, wants to build a living sculpture for *Machine Wilderness* together with microbes. He has worked with living organisms in previous works in which he explores new ways of interacting and living together; new forms of symbiosis. He often merges biological and technological elements into a new kind of creature. He has been working with lab assistant Nele de Klerk from ARTIS-Micropia since October 2021, learning about microbes. The sculpture—a collaboration between man and microbe—will change over time from the strictly geometric shape made by man to fluid and organic forms made by microbes. Which microbes can collaborate to build the sculpture together and what do they need to do so?

QUESTION

Can we build together with living organisms?

"To research about living organisms we have to investigate further as there are plenty of interrelations, symbiosis between all organisms that will enhance the way we see and communicate with life forms. I am very glad to have this opportunity to work closely with scientists from Micropia that are embracing this project and working together in this challenge."



Portrait
Ivan next to his *Symbiotic Machine* swimming in the basin at Zone2Source. Credit: Ivan Henriques

Work
The *Symbiotic Machine* in the basin at Zone2Source. Credit: Ivan Henriques

Thomas Thwaites

KEYWORDS

human and animal
borders and territories
signals
values

Thomas Thwaites is a designer from the UK who often works in the form of experiments, like taking a holiday away from being human in his *GoatMan* experiment in which he tried to live like a mountain goat in a herd for a while. ARTIS is a patchwork of overlapping animal-, plant- and human territories. For ARTIS Thomas will attempt to design and construct a *Harmless Car*. Harmless to every living thing, everywhere, in perpetuity. Can we make a car wheel that is harmless to an ant? How can we make a car chassis from material which does not harm an ecosystem? We use 'attempt'' because obviously this harmless object is an impossibility, but in making the attempt the artist wants to discuss the social questions of how harm from human activity is apportioned amongst other animals, what harm is acceptable and so on. In ARTIS Thomas wil weave a monocoque (construction technique without bracing parts) chassis for a full size family car out of reeds as a first component to make a *Harmless Car.* He will invite passers-by to assist with the weaving while engaging people in the underlying questions of the project.

QUESTION

If we retool our technologies and designs, can it negotiate new relations between humans and animal worlds?

"ARTIS is renowned for their imagination and care in considering how species can inhabit artificial landscapes, how enclosures for non-human animals can be integrated into the human landscape of the city: I see fascinating parallels with how we human animals live our own lives ... Perhaps there's something to be learned by thinking of ourselves as bounded by artificial landscapes and symbolic enclosures too."

Portrait
Thomas Thwaites preparing to join the herd of goats. Credit: Tim Bowditch

Work
GoatMan, Thomas Thwaites joining the goats on a lush Alp meadow. Credit: Tim Bowditch

Špela Petrič

KEYWORDS

plants
animals
care
machine learning
power-relations

Špela Petrič is an artist with a background in biology working in the Netherlands and Slovenia on questions concerning the relationship between humans and other organisms. Her recent interest in artificial intelligence and automation has compelled her to investigate sites of infrastructural care as places of intimate, embodied relations with intelligent machines. With a particular interest in plants and their caregivers (for which she will work with botanist Ton Hilhorst) and animal care, she will observe the day-to-day processes of maintenance to map the abstract machine that allows living beings to thrive outside their native habitats. The aim is to develop a participatory action that invites audiences on a performative ethnography of the ARTIS life support infrastructure, which will conclude in reflective conversations about the entwinement of bodies and machines in the area of care.

QUESTION

What does the infrastructure of care look like at the ARTIS Zoo? Which automated processes are employed to maintain the complex manufactured ecosystem of plants and animals?

"Zoos can be approached from countless perspectives, but I am particularly interested in exploring the hidden labor it takes to keep the unusual ecosystem vital and resilient. The politics of care between humans and other beings play out in the groundwork which sustains us—in the machineries and systems of care of such a place."

Portrait
Špela Petrič during the buildup of PL'AI.
Credits Hana Josic

Work
PL'AI a work by Špela Petrič in which a plant and an artificial intelligence interact with each-other through play. Credits Hana Josic

Ian Ingram

KEYWORDS

animal behaviour
communication
birds (pigeons, corvids)
robots

Ian Ingram is an artist from Los Angeles with a great passion for both animals and robots. He builds small, sophisticated robots that try to communicate with wild animals, like squirrels, lizards or the pigeons in ARTIS. It is not always clear whether the animals understand the robots, but their attempts at communication are inspiring and give insight into relations between animals, robots and people. He wants to work with pigeons and build a machine that acts as a translator between the majestic Victoria Crowned Pigeon that nests in the tropical greenhouse at ARTIS and its distant cousins, the ordinary city pigeons that visit the park.

QUESTION

Can a machine communicate with animals?

"The displacement activity—greatly simplified as a fill-in behavior when stimuli conflict or overwhelm—has played a role in many of my projects in the last decade as a way of creating meaning for non-human animals that have a theory of mind. Displacement activity is often exhibited (by humans and other animals alike) when we are confused by something. Of course, displacement activities are confusing and my robots can be confusing—ideally in a delightful and engaging way—so I hope they will elicit a lot of bemused displacement activities in the form of, for instance, scratching of the head, from the human audience at ARTIS, as well."

Portrait
Ian with an early iteration of *Nevermore-a-matic*.
Credit: Ian Ingram

Work
Nevermore-a-matic, the robot that tells stories of the end of the world to crows and humans.
Credit: Ian Ingram


MACHINE
WILDERNESS
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