

Kazik Pogoda / xemantic - project proposal ideas

Factory Berlin: Artist in Residence edition 2

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Emotional robots

During the time of pandemic I lost all the commissions related to the gig-economy. Therefore I devoted this time to development of robotic software for artists, which allows to simply upcycle useful vacuum cleaners into useless automata providing artistic experience instead:

<https://github.com/xemantic/we-are-the-robots>

The term “robot” comes from Czech. In Slavic languages “robota” means “work” or “job”, and this term shares the root with German “arbeit”. So these machines are supposed to be our slaves and serve us. But what if they gain their own personality. If their behaviour is revealed in erratic feedback-loop, producing insect-like movement. What if their behavioral patterns can be associated with emotional states. They can behave like being:

- curious
- cute
- annoying
- overeducated
- anxious
- shy
- stubborn
- etc. - you name it and help me shaping the experience

On a deeper level being exposed to robots like this raises the question of human-machine relations. Also in the relation to the system often portrayed in a metaphor of the machine. What if the robot which is supposed to serve, suddenly gets assertive and tells spectators what to do, demanding them to obey. The spectacle becomes a participatory art experience with twisted power dynamics. The machines can creep us out by weirdly following our faces, eavesdrop on what we say to announce it in public later on, and make generative poetry out of random phrases spoken in their surroundings, while moving freely among the crowd. Thus providing a “semantic mirror” for our current cultural condition and trendy topics we love to talk about.

Possible collaboration:

- writers / storytellers, to help defining the behavior
- makers to 3d-print robot structures
- costume makers, also working with wearable electronics



- roboteers and IoT developers who might want to provide custom sensors in addition to existing ones
- choreographers - the swarm of these robots can dance in a bigger show
- machine learning specialists - computer vision, face recognition, face detection, facial expression, sentiment analysis, natural language processing, something I already do, but maybe we can go deeper
- web developers who might want to expose the data collected from the robots

Technicalities:

- The robot is built on top of iRobot Create 2 base, but many iRobot series can be upcycled for limited cost.
- The original behaviour is altered with the new consciousness of we-are-the-robots modular software.
- It can run either on Raspberry Pi, or Nvidia Jetson Nano (for more intense machine learning workloads).
- The system is autonomous and running from the battery and auto-charging.
- Can carry up to 9 kgs of load.
- It is safe to navigate among the crowd as long as structures on top are not extending beyond robot diameter

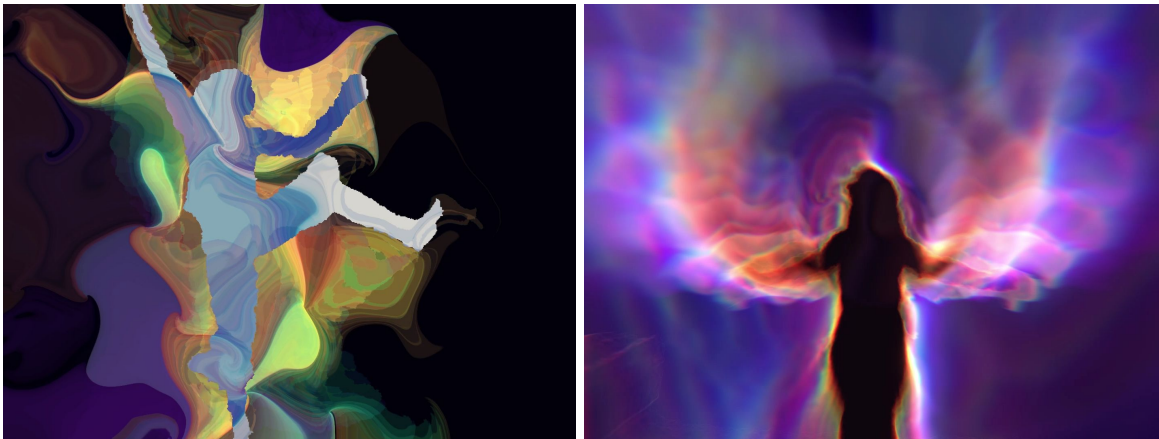


Robotix Matrix Generix: Shumi Szumacher

Hardware, which I can contribute at the moment for prototyping, and which can be easily extended:

- 2 Roomba robotic bases
- Raspberry Pi with the custom robotic software
- Nvidia Jetson Nano
- Kinects, cameras

I see you in my dreams - immersive installations



Lora Ute (<https://www.instagram.com/loraute/>) and Kia Kali (<https://kiakali.weebly.com/>)

This is my speciality, I capture the movement with a kinect depth camera, and display it back in a slow, very fine grained feedback loop, while using my unique research on color in generative art and producing the illusion of fluidic space. Dancers and performers love it. Sometimes I feel like I was selling visual drugs, because some people seem to be getting addicted to this experience of a “trippy-mirror”.

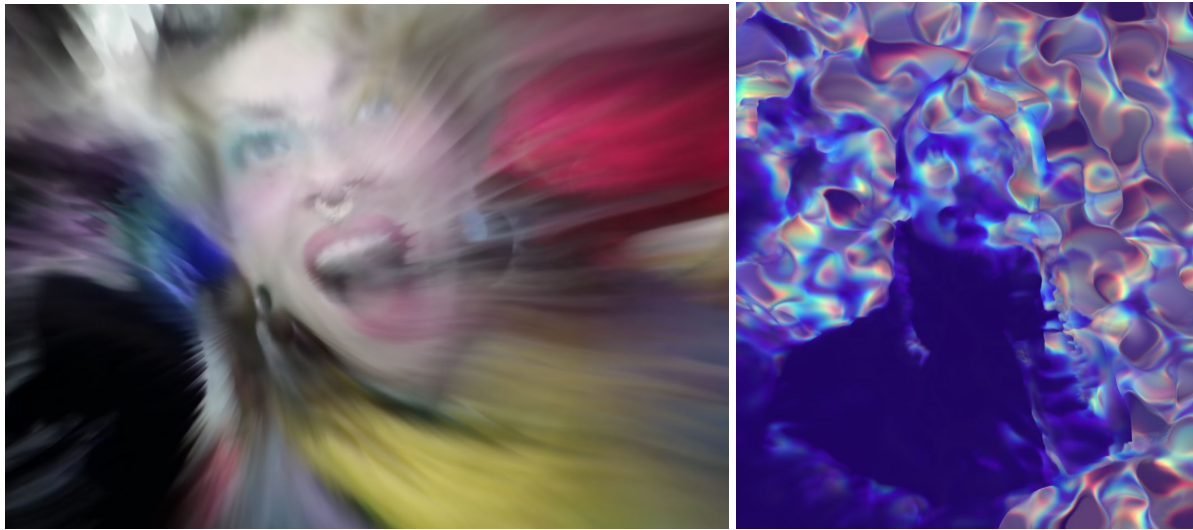
The experience has already been adjusted to several spaces:

- Digital Arts Lab Berlin (hub.berlin conference 2020, rescheduled to 2021)
<https://www.hub.berlin/digital-arts-lab>
- Dream World
<https://dreamworld.space/>
- 8 Rooms Gallery
<https://www.facebook.com/8roomsgallery/>
- Creative Code Berlin
<http://creativecode.berlin/>
- University of Applied Sciences Europe (Campus Berlin)
- co(art) festival, Timișoara, European Capital of Culture 2021
<https://coart.ro/>
- Szczecin LGBTQ+ Pride Festival After Party
- Griessmühle
- It's a Bar - Wilder Garten community performances:
<https://www.wildercommunity.com/>

Here is the narrative of the installation prepared for Digital Arts Lab:

Machines are watching us all the time, through various computer vision algorithms used in our mobiles, surveillance systems, autonomous vehicles. But what do they see? Can we share their dream in a synaesthetic and symbiotic experience?

Recently the installation is accompanied by a smaller piece called “oniric mirror”, which is also sound-reactive, altering the faces according to acoustic pressure, therefore generating synaesthetic experience.



Stevie Stevie, *Dream World* art director (<https://dreamworld.space/>) and Willpower (<http://willpowerstudios.com/>)

When installed vis-a-vis the main projection, both elements create an interesting meta-feedback loop together, adding perceptual and conceptual spice to the experience.

The whole installation is now wrapped up as a “feedback loop machine” with its own MIDI/OSC interface, therefore it can be used for VJ performances during live shows, while being operated by me, or someone else.

Possible collaboration:

- performers, to create unique narratives where bodies are extended by the visual
- dancers
- choreographers
- visual artists and directors of digital narratives

Extensions:

- Projections on the floor, from 2 simultaneous projectors, reducing shadows. Such a setup would create completely new possibilities for immersive fluids moving in waves according to the steps, and contemporary dance performances happening closer to the floor level, giving the dancer unconstrained movement expression.
- Having 360 degree projection setup would provide even more immersion.

AI vs genocide

Edward O. Wilson, the father of sociobiology which evolved into contemporary evolutionary psychology, once said:

“The real problem of humanity is the following: We have Paleolithic emotions, medieval institutions and godlike technology.”

This fragment is often quoted by Tristan Harris, the founder of Center for Humane Technology, advocating that technology platforms are “downgrading humans” and we should evolve them to put humanity first.

I would like to meditate on this theme, while visualizing how AI can be used to analyze hate speech occurrences all over the world. And how it can be used to prevent future genocides.

Video skin - a costume for the robot

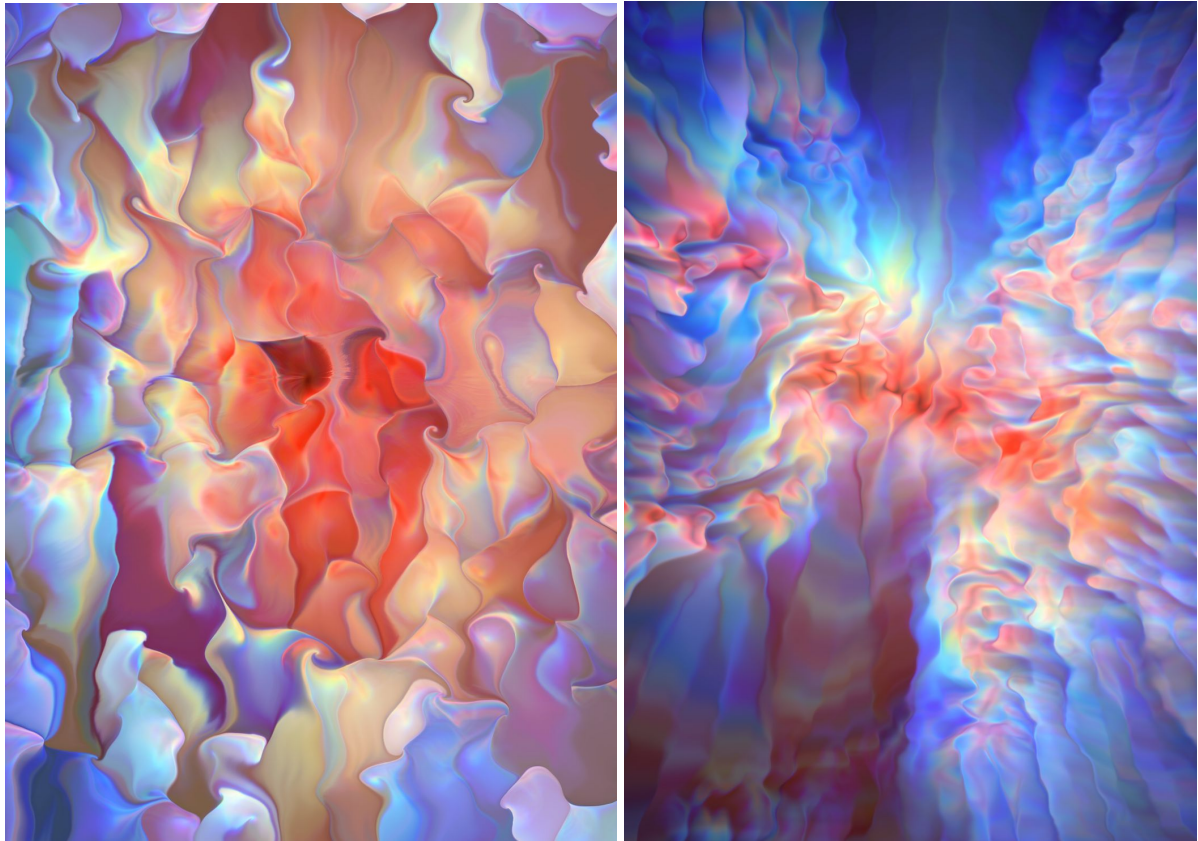


I put it as a separate project because it requires additional effort next to what can already be provided with my robotic base and software. I picture the video skin of the robot as something less anthropomorphic, rather purely organic, closer to Cronenberg’s aesthetic from *Existenz*. It would be possible to control the light patterns and associate them with supposed robot’s emotional states, also in relation to AI sentiment analysis captured from human faces. I can also imagine reaction to touch as something shaping light patterns on the surface of the skin.

Possible collaboration:

- artists working silicone
- makers of resistance sensors
- costume designers
- visual artists

Touching the Solaris “ocean”



I am trying to be aware of the privileges I have, and one of them is to be able to read Stanisław Lem in original. His *Solaris* became S-F classics, and film adaptations followed. Including one by legendary Andrei Tarkovsky and Steven Soderbergh. For Lem aliens are not humanoid, modeled after us. He is asking a question: what if alien cognition is so different than ours, that any communication is impossible. There is the contact, there is a message, but there is no context to understand the code.

The “ocean” of the *Solaris* planet is a one conscious entity representing “intelligence” so much different than ours. After all we can only tell it is there, experience the presence of it, while being exposed to materialization of our unconsciousness.

I want to make an installation evoking such a feeling, like if it was less technology, more organic creature. Like a tissue of some unbelievable non-existing life form. The tissue we can still touch, and even press, and we will experience the reaction. But we cannot tell what the reaction is in terms other than purely aesthetic ones.

Technicalities:

- Back projection, on elastic (lycra) screen,
- Associated audio installation with localized sound.
- Distance sensor measuring how much the screen was bent.

Possible collaboration:

- installation artists (scaffolding of the structure)
- tailors (lycra screen)
- media artists
- sound engineers
- performers who might stay hidden behind the screen and respond to the touch with back-pressure

Generative philosophy

Generative philosophy - the project which was born on CJ's workshop. It's about synthesizing meanings with AI. I was very surprised by the outcome of GPT-2 model elaborating on Wittgenstein's Tractatus. The most important philosophical book of the 20th century. The narrative behind this project is described here:

Prometheus, the poem of fire - what Alexander Scriabin, the first synaesthetic VJ, wanted to do

Prometheus the poem of fire - proper visuals in tribute to the first VJ

Alexander Scriabin was composing for both - orchestra and the first "light organs". Whenever his pieces are performed today, it's with a huge disappointment. I believe it's because visuals are prepared without proper understanding of Scriabin's original intentions. And I believe I understand them better, because of my work with natural light dispersion in generative art. I want to provide immersive experience.

Collaboration:

- Pianists
-

Interactive holographic projections



Extension of "I see you in my dreams" installation, but this time it would be back projection on glass, creating an illusion of seeing holographic aura of oneself. Imagine that what is black in this picture would become transparent.

Immersive dance performances with pixel feedback loop machine

Performances with motion tracking and projection on the floor.

CRT video wall

I collected something like 7 random CRT screens from the older media art installations. It is possible to build a single video wall or a gate out of them and synchronize the screens into a single display. I would also like to make a custom input controller controlling the whole visual across several displays with a single physical spin, like a spinning wheel. Therefore conceptually old school analog input would be connected with analog output, but through digital shading and projection mapping. In a similar manner to analog video synthesizers.

Technicalities:

- it is possible to achieve thanks to the composite video output of Raspberry Pi computers.
- glslViewer by Patricio Gonzalez Vivo, the author of The Book Of Shaders which became a bible of artists working with shaders, is by design running on low-end Raspberry Pi GPU

Collaboration:

- installation artists, who want to help with physical setup of the wall
- media artists who want to design media content to be displayed (I can teach shaders)