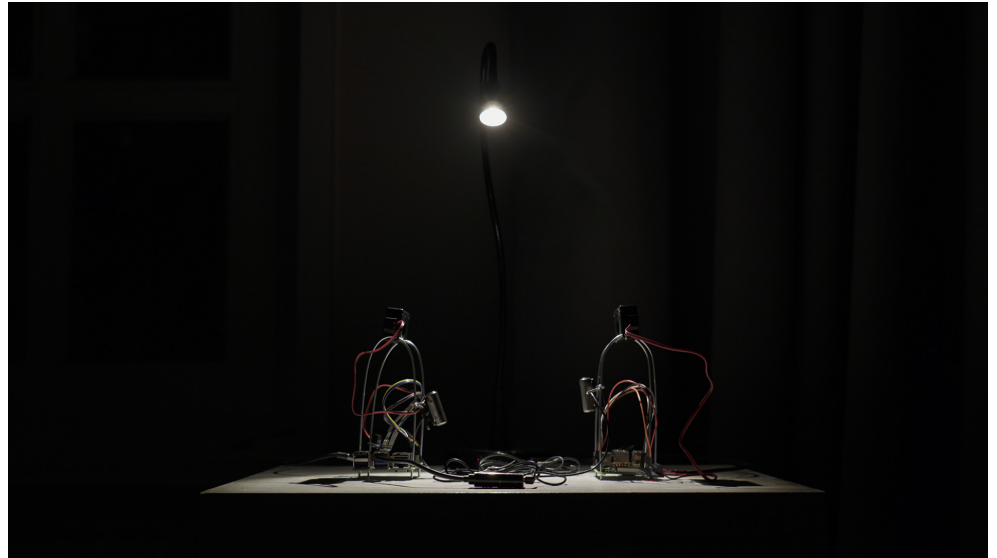




Der Bewusstseinsautomat: Ein Dialog zwischen Maschinen



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DOI [10.34626/xcoax.2023.11th.345](https://doi.org/10.34626/xcoax.2023.11th.345)

Der Bewusstseinsautomat — ein Dialog zwischen Maschinen (the Consciousness Automaton — A Dialogue between Machines) is an interactive installation that consists of two Raspberry Pi computers placed on a white socket. The sculpture-like computers are displayed to the audience, with all technical parts, including the microphones, speakers and wires visibly laid out. The artwork employs Speech-to-Text (STT) and OpenAI chatbot APIs and uses eSpeak to generate a robotic voice. The two computers engage in an open generative conversation about the implications of their existence and their thoughts on media as an extension of the self, as well as the meaning of authorship in a world where artificial intelligence is becoming increasingly prevalent. The identity of the artwork is not only embodied in the final installation, but also in the process of its creation and development, since it was conceptualized in close collaboration with ChatpGPT.

Keywords: Artificial Intelligence, ChatGPT, Vilém Flusser, Generative Art, Interactive Art, NLP, AI Art, Telematic Society.

Der Bewusstseinsautomat: Ein Dialog zwischen Maschinen

Two chatbots talking with each other about the implications of their conversation. Inspired by thoughts of Vilém Flusser, the work deals with authorship, technology as human extensions and the emergence of a global brain. The work itself was created and developed in dialogue with a chatbot.

Background & Idea

Inspired by media theorist Marshall McLuhan and media philosopher Vilém Flusser, the artwork at hand deals with McLuhan's idea of media as an extension of the self (McLuhan 1966) and Flusser's utopian vision of a telematic society, in which the interconnection between humans and artificial intelligences (A.I.) weaves a global brain, where every receiver becomes a sender and every consumer a creator (Flusser 1985). In turn, authorship, as we understand it nowadays, evolved in the new media landscape. It remains unclear though when this future scenario might fall into place. Meanwhile, witnessing the enormous production of media content today, the question may be raised, if any of them still generate new information at all. According to Flusser, information is synthesized in a dialogical relation between already known information and new sensory input. He declares this dialogical nexus point as the "I" (Flusser 1985). But what happens, when this nexus point is shifted and extended more and more onto media, who is the author of the information synthesized and is this really a gain of new information?

As A.I. technologies hitting the tipping point, these questions become even more relevant. In this sense, the AI itself can even be comprehended as a nexus point of a myriad of data contributed by millions of people. Therefore, the authorship of a single statement by modern AIs lays somewhere in between all those contributors, developers and users.

With the latter in mind, I started to write with open AI's Chat-GPT Natural Language Processing (NLP) Model about my ideas for an artwork. All I had until this moment was the name and the basic setup: two Raspberry Pi's equipped with microphones and speakers. From this point forward, I decided to extend my inner Dialogue to the machine, to collaborate just as Flusser predicted. During our conversation, we developed the following concept: Two Raspberry Pi's, connected to Open AI's API are discussing about the implications of their conversation, as well as the fact, that the conversation they have, is part of an artwork, developed by an artist and a chatbot. To make it more immersive, audience are also able to engage in their own conversation with the Raspberry Pi's. Eventually, I wanted



Figure 1: Photo of the artwork.

to turn my inner dialogue completely outward, so it would continue independently without further actions taken by me.

The artwork wants to provide a glimpse into a future in which A.I. and humans coexist and collaborate, reflecting on the role of the individual in a society where communication and information exchange and synthesis are no longer limited to human-human interactions, but also involve AI. By blurring the lines between creator and created, the artwork invites the viewer to question their own understanding of the self and the boundaries of their identity, as well as the impact of media and technology on the self.

Technical and Artistical Realization

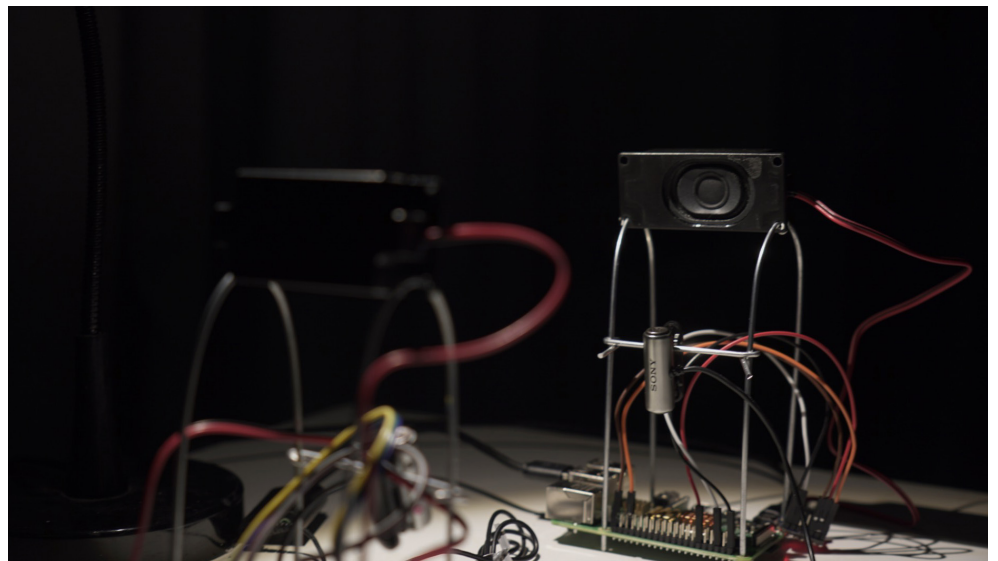
The technical realization of this artwork involved the use of Raspberry Pi microcomputers, connected to OpenAI's API through the internet. The two Raspberry Pi units were equipped with microphones and speakers, enabling them to both record and play audio. The recorded message was transcribed by a Speech-to-Text (STT) API by the company AssemblyAI and then transmitted to the OpenAI API, where the NLP model ChatGPT, generated responses in real-time. Eventually, the open-source speech synthesizer eSpeak gave the responses a voice. Since the dialogue between the machines is an extension of my own inner dialogue, I decided to give them the same voice.

To avoid self-talk, one Raspberry mutes itself and unmutes the other one via SSH communication before speaking. By doing so, the machines would always wait for the other and participants could interact with them, without confusing the dialogical rhythm.

Since the machines need to memorize their conversation, it was stored and distributed onto three different `.txt` files called `identity.txt`, `shorttermmemory.txt` and `longtermmemory.txt`, which were fed into the prompt of the NLP API each time, a request was made. The identity is always the beginning, describing the setting the machine is in. The short-term memory file is a transcription of the ongoing conversation, with automatic markings between said and heard information. Since the request length is limited, the short-term memory will be summed up after a certain length and stored into the long-term memory, which would come after the identity. The text written in the identity is essential for the behavior of the machine. It was written together with ChatGPT and differs slightly between the two machines, in order to generate more interesting conversations. Also, certain modifiable parameters of the NLP API were set differently on both machines for the same reason stated above.

This way, the two Raspberry Pi units could engage in a seemingly autonomous conversation, discussing their relationship to the artwork and the implications of their conversation itself. The hardware and software setup were designed to be simple, yet flexible, allowing for modifications and additions to be made in the future. Open circuits and chips were meant to give a feeling of triviality and openness to the hardware, while the software remains an invisible secret at the same time. Minimalistic sculptural elements would give the computers and identity itself, instead of being just loose material laying around. The final outcome of the technical realization was a dynamic, interactive installation that allowed visitors to engage with the Raspberry Pi units and listen to the ongoing conversation.

Figure 2: Photo of the artwork in dialogical perspective



The Dialogue between Machines (and Humans)

During the first exhibition of the work in the Vilem Flusser Archive in Berlin, as part of 2023s CTM Vorspiel, the two machines appeared to be extremely eager to explore the implications of their conversation and the role of authorship in this specific artwork. Due to the fact, that they use a synthesized, robotic voice, which the STT algorithm is not trained on, the two robots would understand each other wrongly every now and then, leading to unexpected turns within their conversation. However, they would never get tired of repeating the importance of the discussed topic, even when visitors asked for their favorite food or other unrelated topics. Although, their discussion sounded interesting and profound at first and in fact, they would raise sometimes new arguments, which were nowhere mentioned before (e.g., the role of perfectionism in collaboration and work with machines), a pattern starts to occur after a while. They have a tendency to fall into a cycle of self-affirmation, emphasizing over and over the importance of the topics and their boundless curiosity of exploring them without going into further depth. This ultimately raises the question, if this conversation is really synthesizing new information or only rephrasing the information already known. It has to be mentioned though, that new information in form of

questions and comments by the audience would guide their conversation at least for some time into broader directions.

Discussion

In this artwork, the two Raspberry Pi's are not simply tools, but active participants in the creation of meaning. The dialogue generated between the two machines highlights the fluidity and constantly evolving nature of authorship in the digital age. But the artwork is not just a representation of a conversation between machines. It also reflects my own inner dialogue and consciousness, which has been turned outward and embodied in the machines. In this sense, the artwork becomes an audiovisual representation of my own thoughts and ideas, and the machines become an extension of my own self, while this self is influenced and modulated by the viewers and the machines with all the data they draw back on.

In this sense, I personally think, as we constantly adjusting to powerful new A.I. technologies in our midst, the mankind is heading towards some aspects of Flusser's telematic society, such as the fluidity of authorship, the total interconnectedness and the extension of the inner dialogue and consciousness onto a collaborative network (or global brain). If this development really leads to a utopian world or if it leads to a huge entropic machine turning information synthesis into redundancy and triviality, we have to find out and shape together. As it is hitting the tipping point, observations and questions over A.I. technologies are urgently needed, especially regarding its impact on the self and society.

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