

Genesis

MetaGarden Sphere4 Genesis, 2021

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Hosted by: Tanja Vujinovic

Project Information (EN)

About the project

MetaGarden Sphere4: Genesis is a small virtual garden that enables us to immerse ourselves into an ongoing soundscape generated with the help of custom-made artificial intelligence software. A deep neural network was trained to generate sound through samples of minimal techno music. This world contains machinic and biomimetic-inspired objects that developed sentience through ongoing machine learning. The Genesis garden world is full of orchids, snakes and generated snake-like objects – MetaGarden machines, while the Dyson sphere-inspired objects float, encircling stars and capturing their energy to be used in the world. As Félix Guattari puts it, “its chaomic Universe can be constellated with [...], vegetal, animal, cosmic or machinic...becomings.” As new planes of MetaGarden unfold, we get to know their elements, which develop lives of their own. The world of Sphere4 Genesis is placed within VRChat, an amalgam of a computer game and a social platform that offers its users possibilities of organizing events and publishing content in the form of virtual worlds and avatars.

Technical description

Our sound generation uses end-to-end neural audio generation model called SampleRNN. This is a recurrent neural network which generates one audio sample at a time and uses a hierarchy of modules, each operating at a different temporal resolution. In particular, we use the PRiSM's implementation of SampleRNN in TensorFlow 2 (<https://github.com/rncm-prism/prism-samplernn>). The input audio data which is a collection of minimal techno soundtracks is downsampled to 16kHz and sliced into 8 second chunks which are then used to train the network. The hyperparameters of the model were optimized and one of the best combinations was used to train the final model. During the training for 250 epochs intermediate models were stored at every 10th epoch. The model starts to generate useful audio data after approximately 60-100 epochs so we used all available useful intermediate models to generate audio samples while also varying the sampling temperature parameter. More about the project: <https://www.tanjav.art/work/genesis> VRChat link: https://vrchat.com/home/launch?worldId=wrlld_f2e1b77b-1996-4f3e-b259-0a8ca0458139

Projectinformatie (NL)

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Image List

Filename	Caption	Credit
tanja-v-ultramono-sphere4-genesis-34_1632490559.png	MetaGarden Sphere4 Genesis by Tanja Vujinovic	Tanja Vujinovic
tanja-v-ultramono-sphere4-genesis-38_1632490571.png	MetaGarden Sphere4 Genesis by Tanja Vujinovic	Tanja Vujinovic
tanja-v-ultramono-sphere4-genesis-42_1632490593.png	MetaGarden Sphere4 Genesis by Tanja Vujinovic	Tanja Vujinovic
tanja-avatar-x12-opt-mix-2-300dpi_1634207125.png	MetaGarden Sphere4 Genesis by Tanja Vujinovic	

The images above are included in the ZIP under /images.