Digital Plankton

The Digital Plankton is a physical object installation exploring the life of virtual plankton creatures deployed on-board of a small computing device. The installation shows generated footage on the Raspberry Pi with an embedded display. It is a spiritual continuation of the so-called Evolved Virtual Creatures presented by Karl Sims in 1994 - there, a genetic evolutionary algorithm was used to create rule-based grid-based controls for simple virtual bodies of creatures which were conditioned to move. Our work uses neural networks and learning from data rather than depending on explicitly written rules (such as the goal to "move the furthest" in a simulated environment). As such the inhabited space is continuous rather than discrete (up until the point of resolution given by float32). We present a play on hybridisation as our synthetic plankton shapes live on a physical real-world object, which is exhibited and can be interacted with. As for the theme, humanity could learn from plankton, as one of the oldest species which has lived through evolving climate conditions over billions of years - speculatively, if we consider more than human intelligence, it may even outlive us.

This work is the conclusion of a year-long art residency with the Inspiration Forum Lab of the Ji.hlava International Documentary Film Festival, which resulted with a month-long exhibition at the Display photo gallery named Bodies of Water. We want to thank Albert Calbet and the Marine Zooplankton Ecology Lab of CSIC for their data. Finally, for the installation details, this piece contains a custom adapted Raspberry Pi with a display which is attached to a wall segment via USB.

Short bio

Vít Růžička is a Machine Learning researcher working on deploying models on-board on low compute devices such as satellites, with focus on Machine Learning models for Climate Change related topics (detection of disaster events, early warning systems for methane gas leaks from space and similar). He has been exhibiting his AI generated artworks alongside his experimental darkroom photography since 2015 in venues such as NeurIPS and CVPR Creative AI workshops, film festivals such as Ji.hlava IDFF and galleries in Prague.