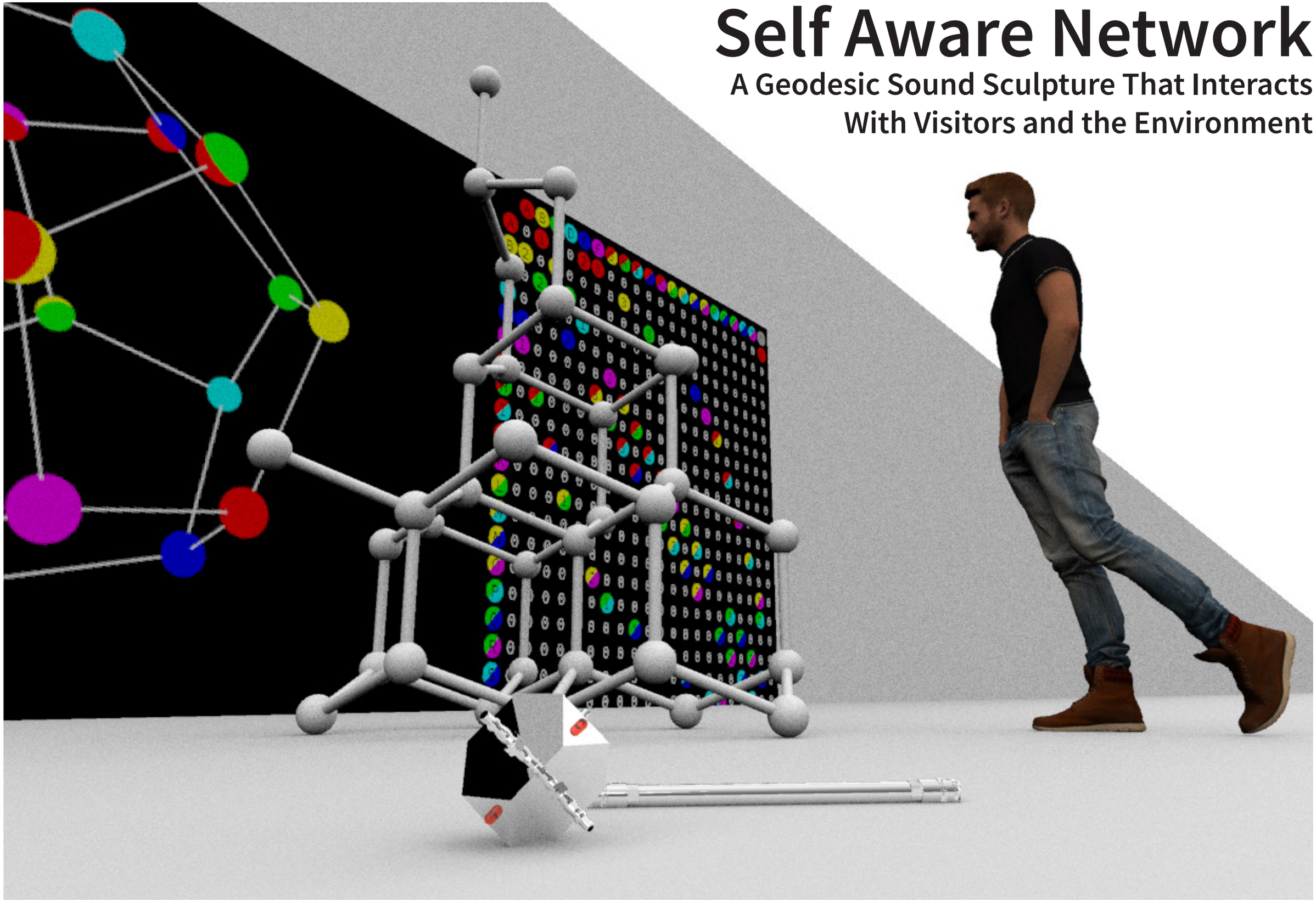
Self Aware Network

A Geodesic Sound Sculpture That Interacts With Visitors and the Environment



Description

Title and short slogan

The Self Aware Network: A geodesic sound sculpture that interacts with visitors and the environment

Abstract

The Self Aware Network (SAN) is an experiment about the future of architecture. It is comprised of a system for building intelligent structures that interact and communicate with the environment.

Eventually structures will acquire artificial intelligence (AI), thereby being able to *understand* the environment. The next step then is for structures to become robotic. This allows them to *adapt* to the environment. The vision is for architecture to become fluid, to constantly reconfigure itself and to follow the needs of the people.

For *Eyes of the City,* we will work with a one-off stainless steel life-size version of the already existing desktop system.

Network

- This sculpture is represented by a network of nodes.
- Nodes have tetrahedral geometry. This is known as SP^3 hybridization in Chemistry. This geometry underlies the hardest known structure in nature, that of diamond.
- Edges have uniform length.
- The network communicates with its environment, visually and auditory.

Self-Awareness

- The network is aware of itself, the way we are aware of our body. How the network sees itself is visualized and projected (on the wall or the floor).

Adaptivity

The network can be reconfigured to make it adapt to its environment.

Senses

- The network understands its environment. It has senses (gravity sensors).

Auditory communication

- The network forms a modular synthesizer. Visitors can connect to network nodes and adjust their audio properties. They can listen to the network via speakers or headphones.

Visitor interaction

Three stages of interactivity: *(see comic)*

- Audio: Visitors can connect to the brain of the network and change the audio features of individual nodes.
- Adaptivity: Under supervisision, visitors can reconfigure the network, by attaching and reattachging nodes and edges. This is possibleevery weekend and on demand.
- On three weekends, there will be hands-on workshops, visitors collaboratively erect the network step by step. We solder electronics and build assemble the individual elements, then we connect them.

On-Site peculiarity

Users will adapt the network to the space around them. Over time the network will grow and make use of the space given to it, just like train tracks seeping through our landscape.

Provisional / Durable nature of the intervention

The network is made of stainless steel, thus very durable.

At the end of Biennale, the final sound and shape of the sculpture will be fossilized:

- It is taken offline. *(music and memory is enduring while the physical physical is quick and comparatively ephemeral)*
- Audio will be recorded.
- The final state of consciousness will be recorded.
- Batteries will be replaced by permanent electrical wiring. That way the structure can remain lit.

There will be a QR code. Following the QR code, visitors will be able to hear the network and they will be able to see its final consciousness.

Positioning

Projection of the awareness on semi transparent wall, hanging from the ceiling.

Material

- Material: stainless steel, electronics, light

Sustainability

- Stainless steel construction.
- Batteries are rechargeable and will be recycled at the end of the event.
- Connectors are sourced from scrap. For us the ones that didn't pass quality control for air tightness are good enough.

Outlook

Following the desktop system, the network is being scaled up. The next steps are to make the network move and eventually to make it be able to self-reassemble. For these stages to happen, we need a test ground, an architectural makerspace, where people of all ages can collaboratively experiment and eventually revolutionize heavy construction and the way we architecture interacts with us and with the environment.

All construction plans for the desktop system as well as all source code is available under a permissive open source license at: github.com/feklee/san

Bios

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Feasibility

CVs / bios