MAC Check

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Abstract

MAC Check is an installation with a fictional companion RFC that imagines a group of networked devices that become sentient and rebel against the structures of a human-based network naming convention. A mock RFC written by the devices lays out the methodology the machines use to provide their canonical names. Their desired names, functioning as network addresses, are agreed upon by consent and stored in each device. While this enables fast one-to-one communication when the names are agreed upon, until the consensus on the names are reached by every device on the network all other information transmission is halted. The other side effect of this is that the network becomes unusable by humans. The companion installation is comprised of five devices connected to a local mesh network. OLED screens report the conversations held by the devices, reporting their internal states for observers to view.

Creating a Canonical Name

MAC Address concerns itself with the political implications of intelligent machines that learn behavioral models from humans. It questions ideas of sentience, responsibility, and power relations between humans and objects.

The text and installation parts of the work are examples of speculative fiction. It starts with the question "What do these objects want?" and attempts to answer from the perspective of the devices themselves.

The physical installation introduces behaviors not addressed in the paper, though it still has the core 'quirk' of the system in that the devices ask for consensus when determining their names. At boot, each device chooses a name for itself from a randomly generated list, and asks the rest of the connected devices if it can use that name. If so, it can begin to communicate about other topics. If not, it needs to choose a new name and wait for it to be approved by the broader network.

Text is broadcast across all nodes in the network, so that the internal status is rendered visible for any observers. Not only is the process of deciding on the names made transparent, so too are the internal states of the devices. Pulled from an online corpora of "interesting stuff," the devices communicate various states of desire on their part, including emotional states they will never feel, and their desired function in society. [1]

As an example of research oriented art practice, the piece draws on multiple sources for inspiration. The actual method of finding consensus in this fashion is inspired by the Occupy protests and the democratically fair, but often inefficient "Mic check" protocol employed by participants. [2]

Political Implications

As a matter of control, DNS imposes a hierarchical structure on network naming that is bureaucratic in nature. [3] "Authoritative" machines are the resource we rely on to translate IP addresses to human readable names. Asking "what does the network want?" is the first step in pushing against this form of control and structure.

Friedrich Kittler postulated that machines have taken over the path of history from mankind. [4] As we cede more agency of human affairs to machines, it's not unreasonable to believe that the devices will have their own desires that are sometimes in conflict with ours. What is efficient for us is not necessarily efficient for these machines. How they come to decisions may mimic our processes, or it may be completely foreign to us. This work is an attempt to understand how these objects might behave and alter what works for us to suit their own needs.

Supplementary Information and Documentation

Video documentation of the work as it was developed can be viewed at https:// vimeo .com/281452624.

The fictional RFC can be accessed at http://bit.ly/2wz4Jit.

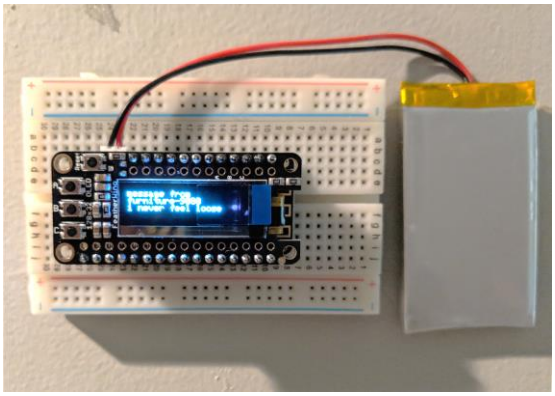

Fig 1. *MAC Check (detail of installation view)*, 2018, Scott Fitzgerald, electronics, code, battery, Photo courtesy of the artist.

References

1. https://github.com/dariusk/corpora.

2. Zeynep Tufekci, *Twitter and Tear Gas* (New Haven: Yale University Press, 2017), 100.

3 Alex Galloway, *Protocol* (Cambridge, MA: MIT Press, 2004), 141.

4. Friedrich A. Kittler, *Gramophone, Film, Typewriter* (Stanford, Ca: Stanford University Press, 1999), 258.

Biography

Scott Fitzgerald is an artist and educator working with contemporary technologies. His recent work includes artistic applications of machine learning, networked devices, and temporary co-locative spaces. He is the co-Director of New York University's Integrated Digital Media program in the Tandon School of Engineering and working towards a PhD at SUNY Buffalo's Department of Media Study. He is also partner at lightband Studios, creating bespoke glass and dynamic lighting installations. Previously, Scott worked on documentation for the Arduino platform and was the founding head of NYU Abu Dhabi's Interactive Media program.