



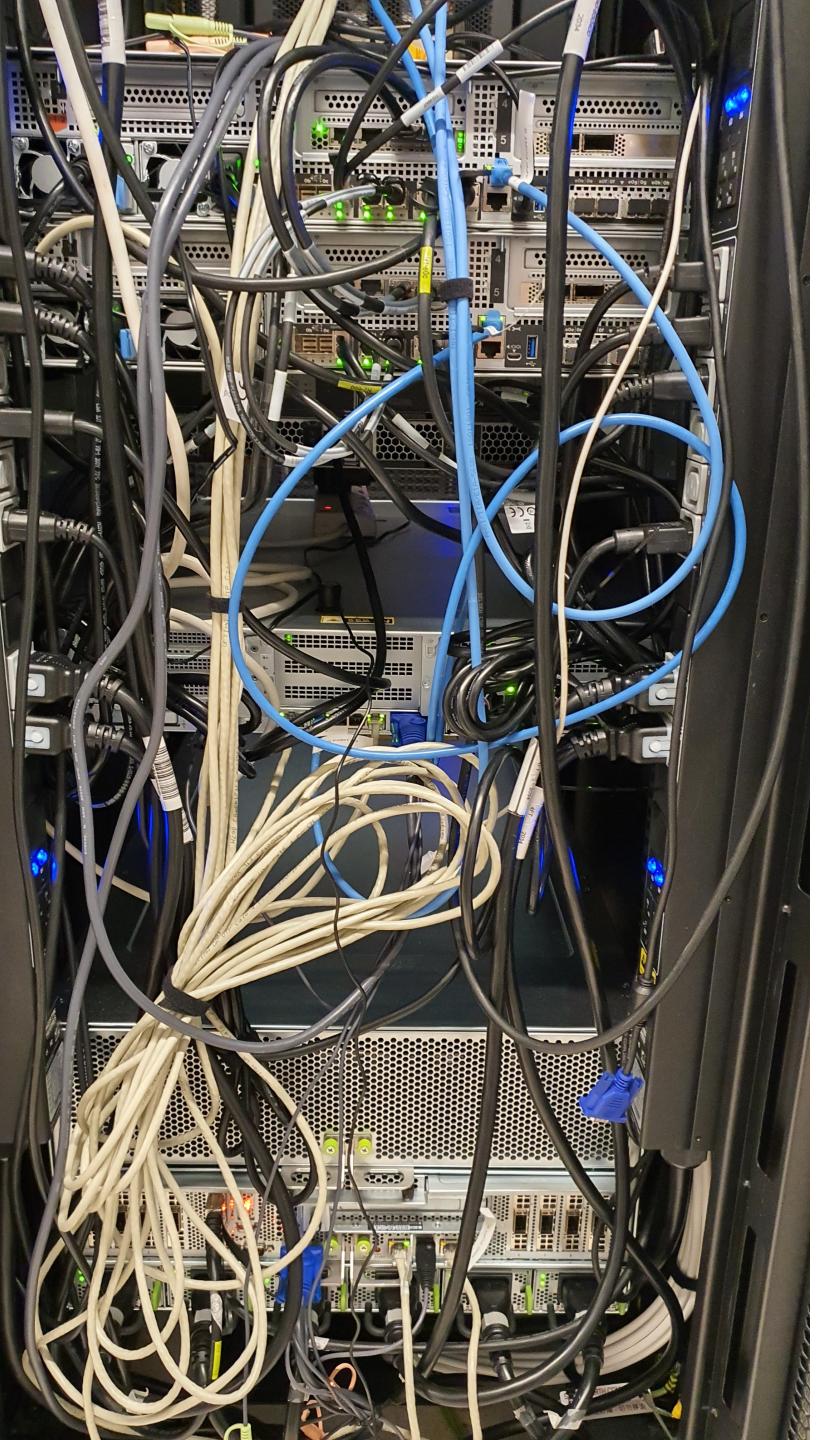
Interference Spores

Re-thinking AI through Mycelium and becoming Octopus



Re-thinking AI through Mycelium and becoming Octopus

- How do you think AI will develop?
- What are AI developer's narratives?
- First meditation on becoming Octopus
- Practical - Growing a mycorrhizal network
- Practical - building a simple voltage detector
- Second meditation on becoming Octopus
- Re-thinking AI through Mycelium and becoming Octopus

A photograph of a server rack filled with network equipment. The rack is densely packed with various components, including multiple network switches, routers, and cables of different colors (black, blue, white). Many cables are visible, some with glowing green lights at their connectors. The overall appearance is one of a complex and interconnected technical environment.

Group Discussion

- How do you think AI will develop over the next 10 years?
- What do you think will be 5 main benefits?
- What are your top 5 concerns?

Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war..

The Center For Ai Safety

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- "Should we let machines flood our information channels with propaganda and untruth?"
- "Should we automate away all the jobs, including the fulfilling ones?"
- "Should we develop nonhuman minds that might eventually outnumber, outsmart, obsolete, and replace us?"
- "Should we risk loss of control of our civilization?"

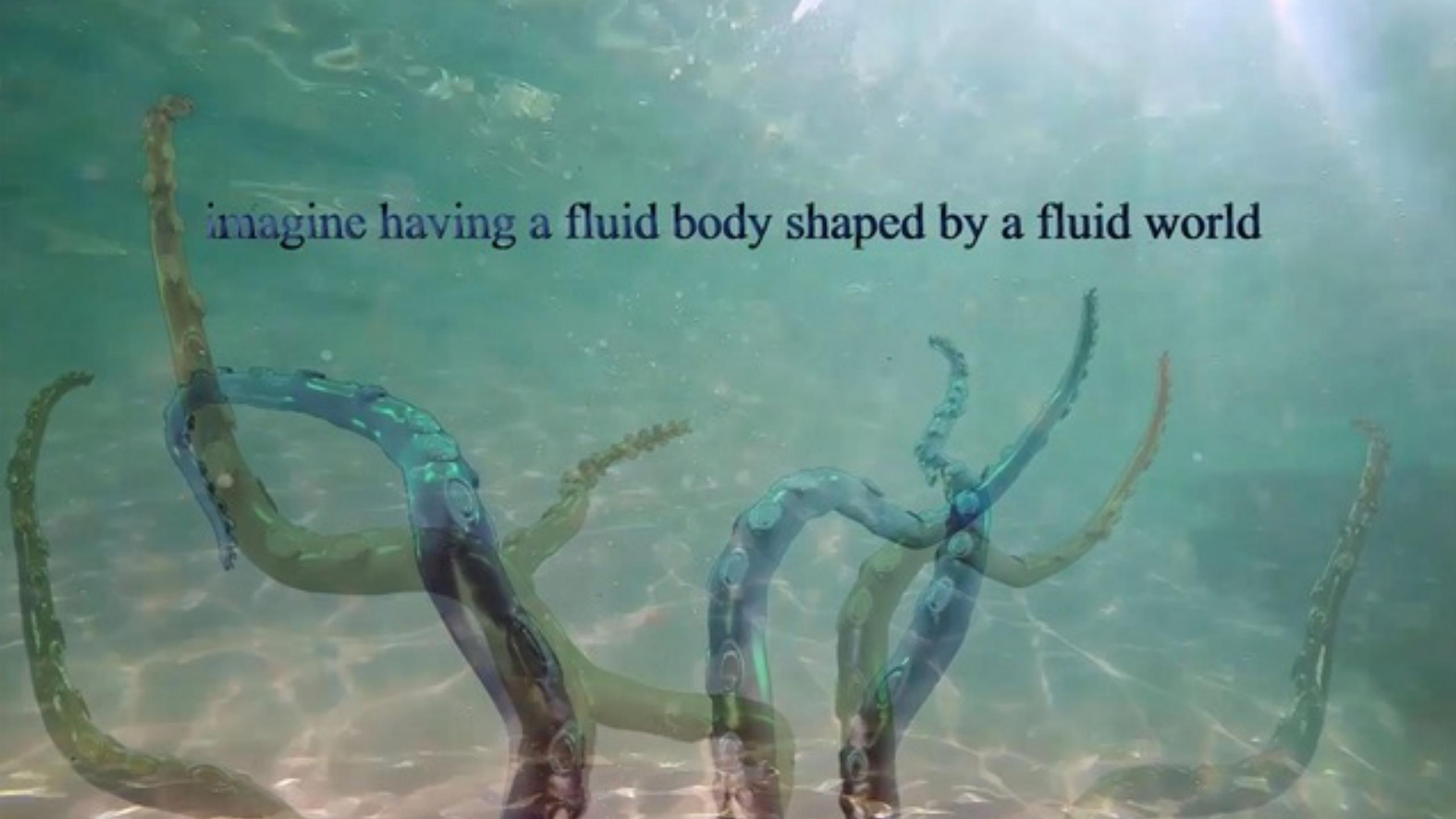
Open letter signed by over 1000 leading AI developers

Alternative visions of evolution

Life did not take over the globe by combat, but by networking.

... the view of evolution as chronic bloody competition among individuals and species, a popular distortion of Darwin's notion of "survival of the fittest," dissolves before a new view of continual cooperation, strong interaction, and mutual dependence among life forms.

- Margulis and Sagan



imagine having a fluid body shaped by a fluid world

Why Mycelium?

- Wood Wide Web
- A forest can cover hundreds of kilometres of densely packed fungal threads
- Fungus forms mycorrhiza with plant roots, and through those connections pass substances that both organisms need to grow.
- Fungi are more than just passive wires; they are, in fact, actively perceiving, interpreting, and signaling themselves.
- They do this constantly, with a wide range of beings.

Grow
your own
mycorrhizal
network



CHOOSING THE RIGHT SUBSTRATE

- Straw – (recommend)
- Sawdust
- Cardboard
- Sawdust pellets
- Coffee Grounds
- Logs (if growing outdoors)
- Books
- Uncle Ben's rice!

Wash your hands and work surfaces

- It is **absolutely key** to ensure that your working environment is sanitary during the inoculation process.

Pasteurise the mix

- submerge the straw or cardboard in very hot water – between 65°C-80°C (or 149-175 Fahrenheit) for up to 2 hours. If using a mushroom growing bag, you can also pour the water directly into the bag, seal it shut with tape or clips and let it sit for up to 8 hours.
- If using a heating pot or container, you may wish to use some form of sieve to pour the mixture into and allow it to drain.
- If using a growing bag, simply cut the lower corners of the bag and allow it to drain.

Substrate Inoculation

- Substrate inoculation is the process of inserting or adding your mushroom spawn into the mushroom substrate.
- Inoculation is as simple as mixing the mushroom spawn into the substrate.
- Mix your substrate and spawn together thoroughly.
- The better the spread, the quicker and more effective your mycelium colonisation will be.

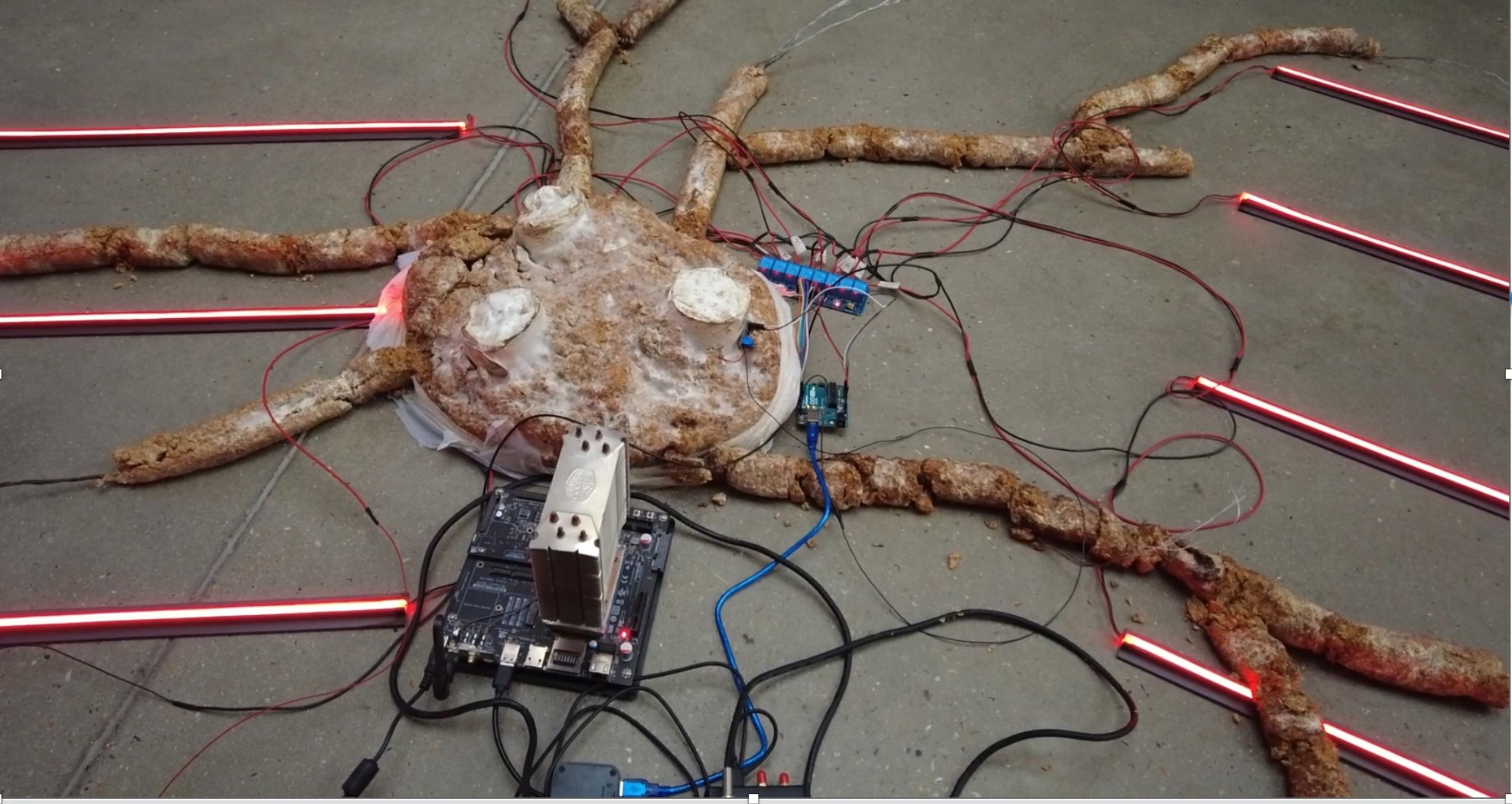


Growing bag

- you will need to add some holes for air exchange to your growing bag. Simply cut 2-3 cm holes every 10-15cms for optimal air access.
- Seal the holes with micropores tape

Incubation

- The incubation period will see the mushroom mycelium grow and spread through the substrate, ready for the mushrooms to fruit.
- Whilst the incubation period is relatively low maintenance, you will want to ensure that certain conditions are maintained as not to inhibit the growth of your mushrooms.
- Leave in a warm area of the house
- Store in a cardboard box to keep direct sunlight off them while incubating.

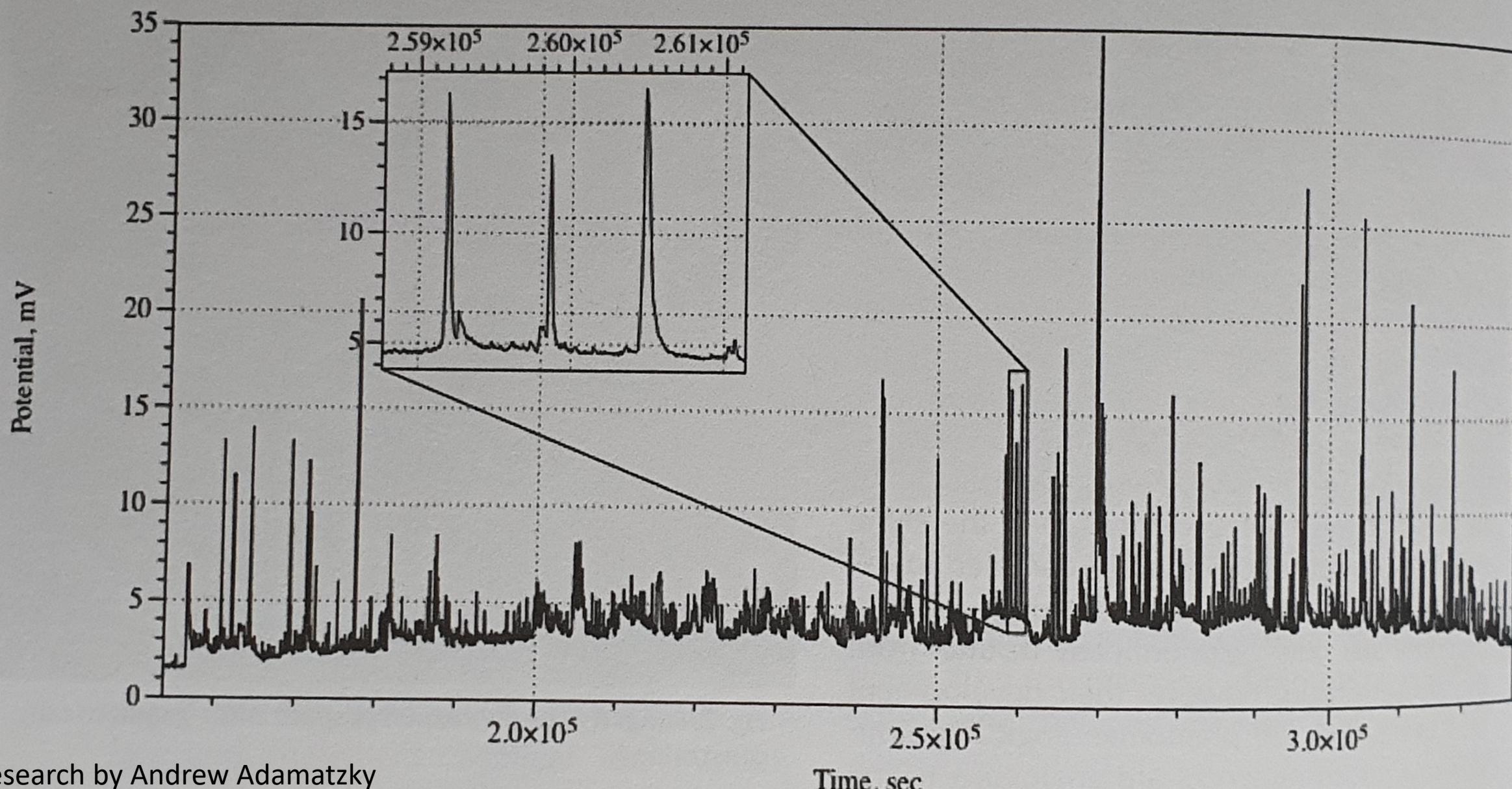


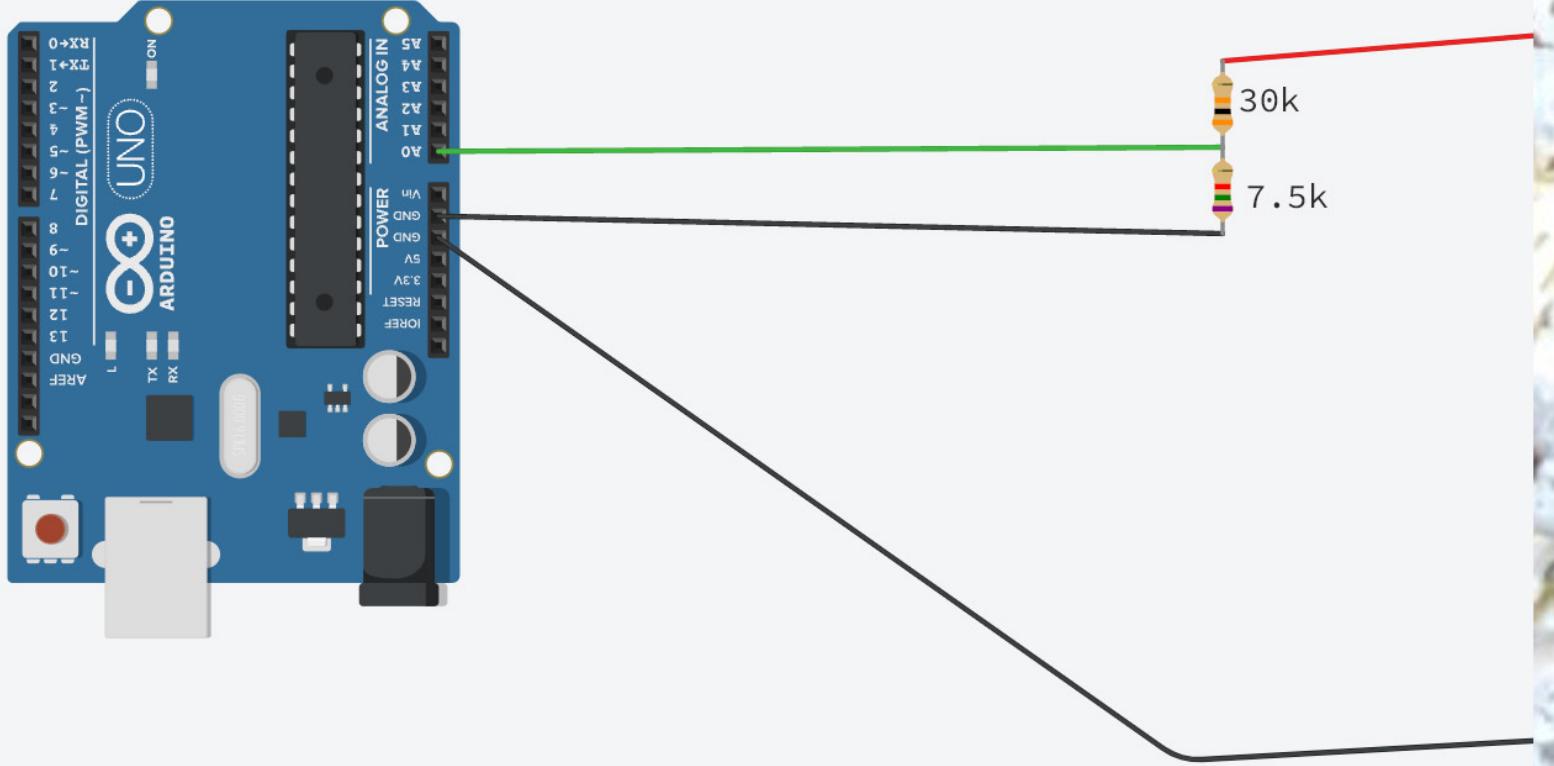
Chemical and electrical signals

- Fungi conduct electrical impulses through long, underground filamentous structures called hyphae – similar to how nerve cells transmit information in humans.
- Spikes often clustered into trains of activity, resembling vocabularies of up to 50 words.
- Fungi understand a wide range of chemical and electrical signals.
- Fungi not only perceive but actively interpret a chemical's meaning depending on the context and in relation to other chemicals.

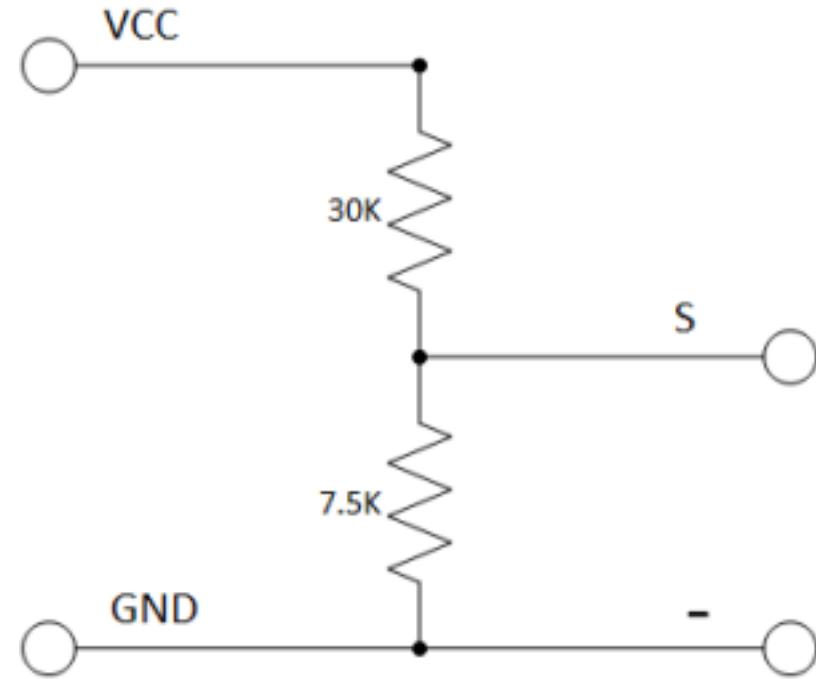
fungi exhibit trains of action-like spike of extracellularly recorded electrical potential. We

options are illustrated below.





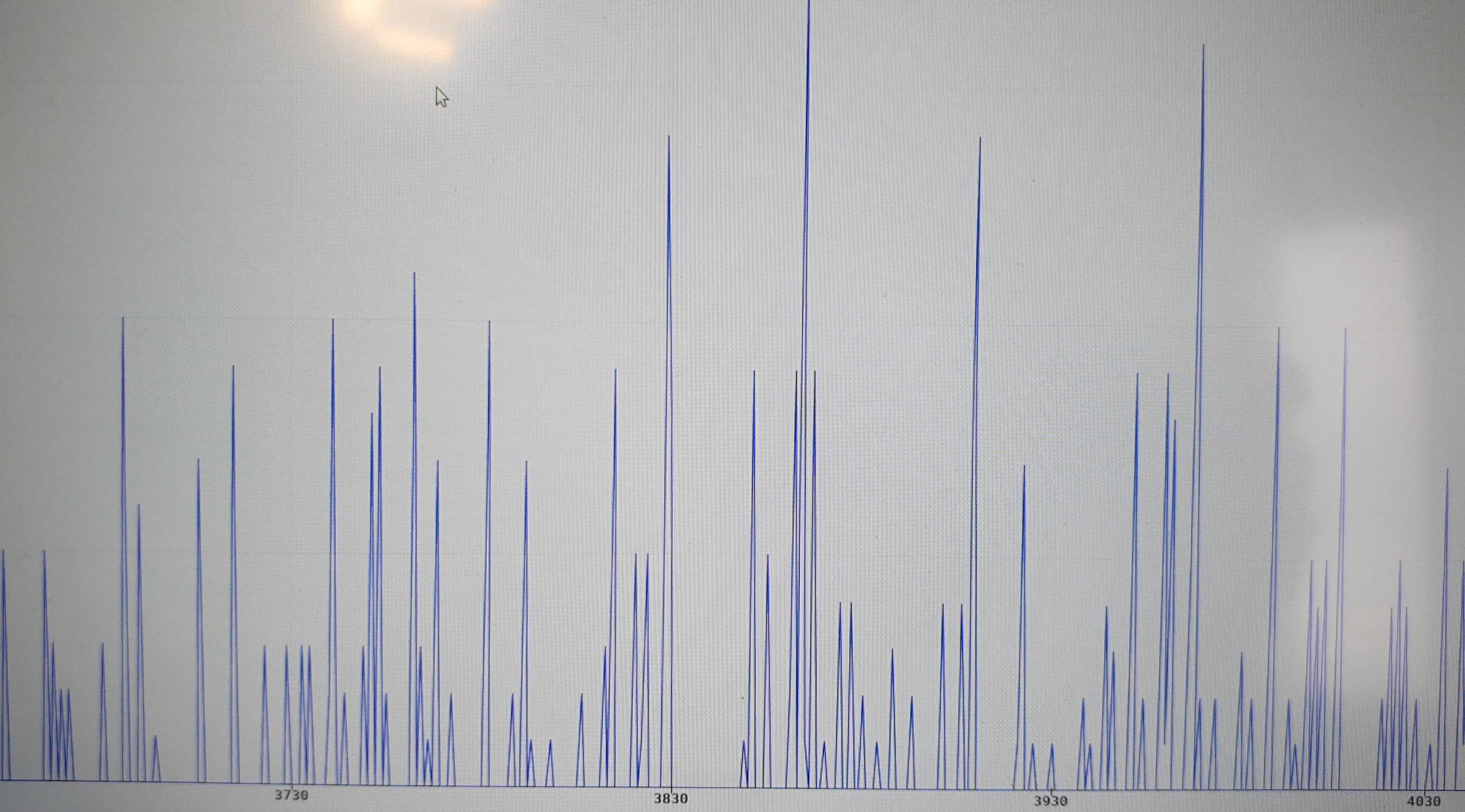
Sensing Voltage

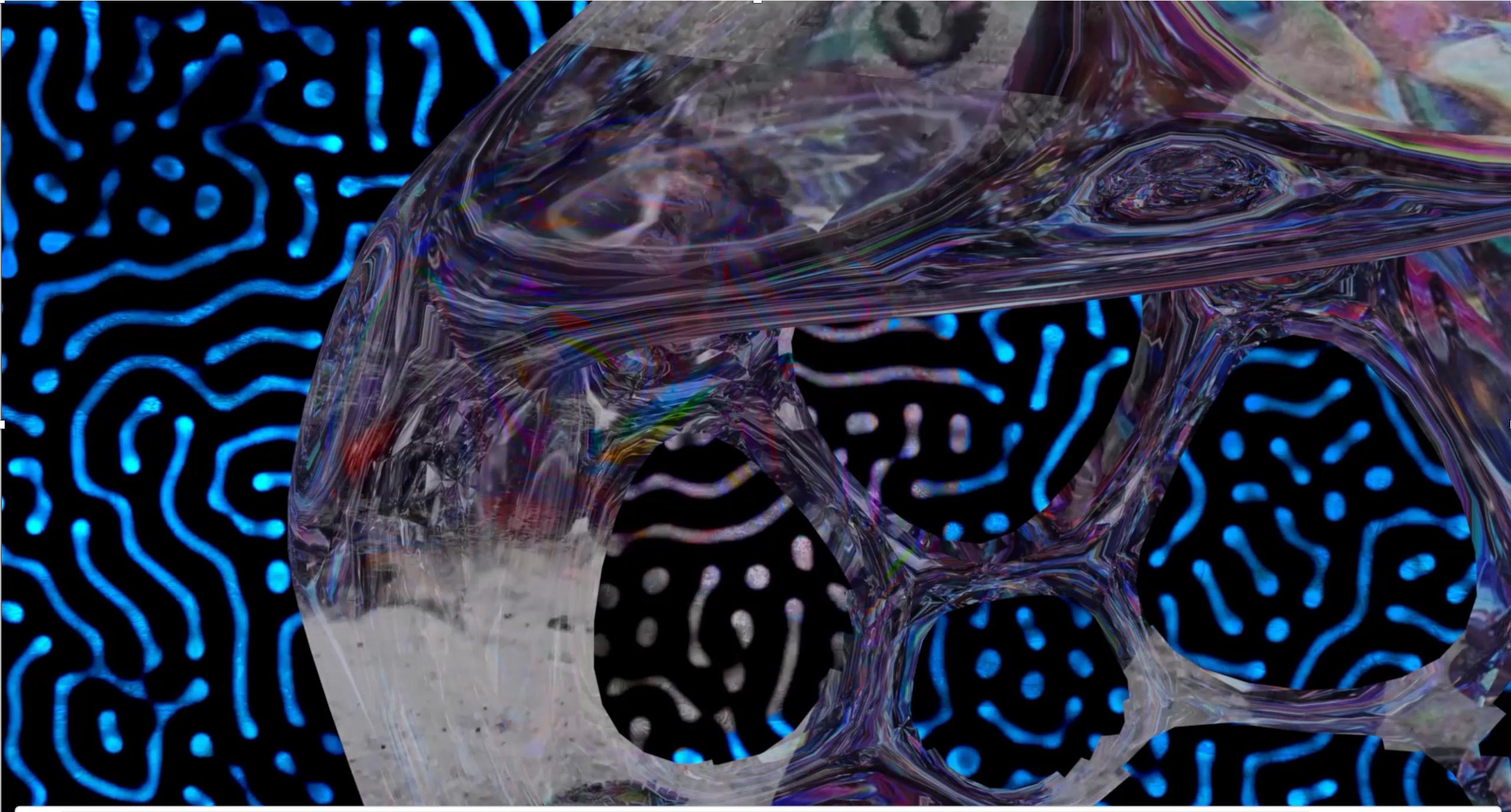


```
int spike = 0; //variable to hold the reading from the voltage devider

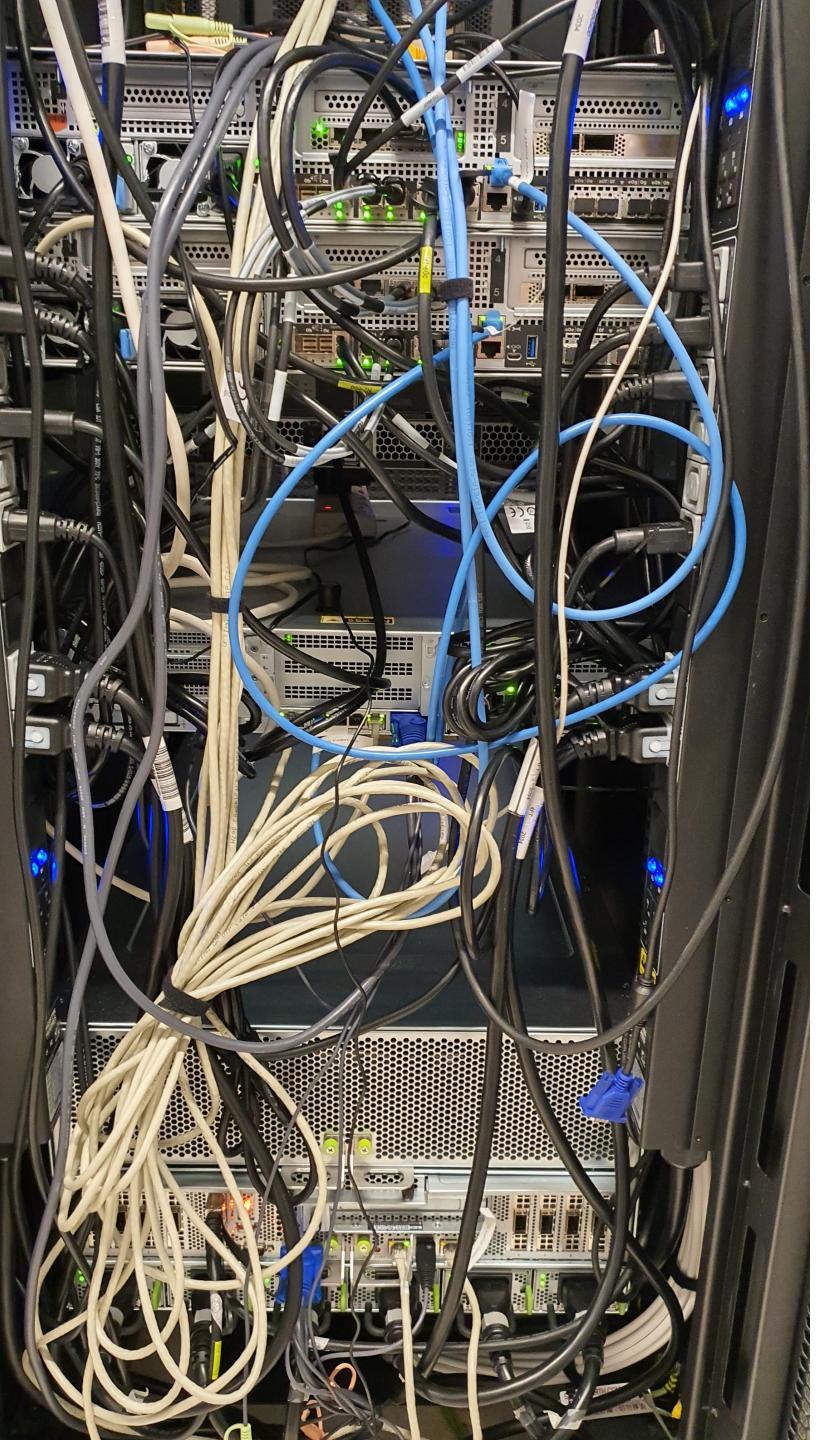
void setup() {
    Serial.begin(9600);
    analogReference(INTERNAL); //lower arduino voltage ref to 1.1v
}

void loop() {
    spike = analogRead(A0); //read analogue pin 0 and place the results in the variable spike
    Serial.println(spike); // send the readings via serial back to arduino
    delay(50); // delay for 50 miliseconds
}
```





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A photograph of a server rack filled with network equipment and many tangled cables. The cables are color-coded, including blue, black, and beige, and are bundled together. The server units have various ports and indicator lights visible.

Group Discussion

Can we develop an alternative AI narrative influenced by Mycelium and becoming Octopus?

Resources

- Arduino software - <https://www.arduino.cc/>
- Language of fungi derived from their electrical spiking activity -
<https://doi.org/10.1098/rsos.211926>
- Becoming Octopus Meditations - <https://www.orphandriftarchive.com/if-ai/becoming-octopus-meditations/>
- Mycelium Growing Guide - <https://grocycle.com/how-to-grow-mushrooms/>