

Brain Criticality Hypothesis Simulation

Drew Smith

March 11, 2023

1 Idea

Goal: The goal of this project is to create a simulation of a brain in a state of criticality. I will be attempting to create a weak AGI. I plan to create a neural network with similar features to any other mammal's brain i.e:

- The neural network will have a branching parameter of about 1.
- Each neuron will have roughly 120 connections.
- Each neuron will have an activation threshold.
- I will attempt to have 16% of the neurons firing at any given moment.

I will attempt to teach the neural network simple tasks based around a simulated environment of an organism. My end goal is to create two machines running concurrently, one to simulate the environment, and one to simulate an organism living within the environment. The environment machine will provide inputs to the organism machine, and the organism machine will provide actions for the organism to take in the simulation.

2 Design