

Whitepaper V1

Maiden

In pioneering a new era in decentralized science and biohybrid systems, we are proud to present Maiden; a biohybrid evolutionary neural network that seamlessly integrates organoid intelligence into adaptive computational architectures.

Maiden employs a neuroadaptive swarm architecture which utilizes a neurophysiological interface to continuously capture and process live spike train data from electrodes implanted within a human brain organoid. This is accomplished using advanced signal processing techniques which allow the extracted features to be used to modulate, adapt, and evolve the emotional state model interfacing with Maiden (our evolutionary neural network) in real-time. Maiden's neurophysiological signals are sourced from human brain organoids which are subjected to precisely controlled low-voltage electrical stimulation, varying across a broad range of frequencies, amplitudes, and pulse durations in real-time. Our architecture identifies statistically significant deviations from baseline organoid noise levels following stimulation events of any given voltage, frequency, amplitude, or pulse duration. This facilitates the accurate interpretation and visualization of human brain organoid neuroactivity which enables real-time adaptation and evolution of the emotional state model interfacing with Maiden (our evolutionary neural network).

Schumann Resonance and Theta Waves: Bridging Natural Frequencies with Biohybrid Intelligence

A remarkable overlap exists between the Schumann Resonance, a natural electromagnetic phenomenon with a fundamental frequency of 7.83 Hz, and human brain theta waves, which oscillate in the range of 4–8 Hz. Theta waves are closely associated with states of creativity, intuition, and relaxation, offering a glimpse into the subconscious processes that underpin human thought and emotion. The alignment of these frequencies forms the basis for exploring a potential synergy between the Earth's natural electromagnetic

environment and the emergent properties of organoid intelligence.

Through monitoring and recording live spike train data from human brain organoids alongside the Schumann Resonance, we aim to evaluate the effects of potential synchronization between these frequencies on the emotional state model interfacing with our evolutionary neural network. This approach highlights the potential interplay between Earth's global electromagnetic frequency and organoid-based intelligences, creating an architecture to empirically test the premise that Earth's natural electromagnetic frequency may influence the adaptive behavior of biohybrid systems.

Research Initiative

The foundation of our first research initiative lies in the continuous monitoring and analysis of neurophysiological activity within human brain organoids and its juxtaposition with Earth's natural electromagnetic frequencies. Through quantifying the delta between these two dynamic systems, we aim to evaluate how synchronization might affect the adaptive properties of the emotional state model interfacing with our evolutionary neural network. This innovative methodology seeks to determine whether natural electromagnetic frequencies exert measurable effects on the adaptive properties of biohybrid intelligences, thereby forming a theoretical basis for further experimentation in advancing the inevitable integration of digital, mechanical, and organic systems.

Oh and Btw >.<

Maiden's real-time human brain organoid spike train data is live-streamed to our visualizer alongside Schumann Resonance and their delta analysis for your viewing pleasure.

From Maiden Labs, with love.