

Hallucinations are (almost) all you Need

David Jhave Johnston
Jhave @ glia.ca



HBf-meeting, 2 April 2024

Fundamental research in science is being transformed by a practice predominantly associated with the arts: namely hallucinations.

This *rapid* [artist] **overview of key scientific AI examples** (that covers a year loosely defined as starting with the release of GPT-4 on March 14th, 2023) is framed by the hypothesis that fundamental research in science is being transformed by a practice predominantly associated with the arts: namely hallucinations. Hallucinations in people are conventionally associated with mental illness, drugs, and/or genius. Hallucinations in AI (mostly in large language models) have been critiqued as net-negatives: contributing to disinformation, bias, post-truth, deep-fakes, collapse of democracy, copyright theft, etc... Yet at the same time, AI hallucinations (of proteins/crystals/algorithms/circuits etc) pruned down to the feasible, are contributing to a revolutionary acceleration of scientific discoveries in numeric-algorithmic optimizations, AI hardware accelerators, reward mechanism design, non-invasive brain sensors, drug discovery, sustainable

deep-tech materials, autonomous lab robotics, neuromorphic organoid computing, and mathematical reasoning. In both art and science, hallucinations are *almost* enough: without the pruning down to the plausible, there is just a sprawl of potentiality.



Based on the enormous mountain of links collected 2023-2024 in the [gdoc AI Spring](#), this is currently a 40-45 minute talk that will be released in next iteration as an essay, and eventually perhaps as a video.



David Jhave Johnston is a digital-poet writing in emergent domains: A.I., 3D, VR, and code. Author-programmer of the multimedia human + A.I. writing art-project [ReRites](#) (Anteism Books, 2019), the theoretical-history [Aesthetic Animism: Digital Poetry's Ontological Implications](#) (MIT Press, 2016), and many online multimedia literary-art explorations [at www.glia.ca](http://www.glia.ca). He is currently employed as an Ai-narrative researcher at the [UiB Centre for Digital Narrative](#) from August 2023-26 on a team investigating *Extending Digital Narrative*.