

Abstract:

Cyber-agriculture, also known as controlled environmental agriculture, vertical farming, or urban farming, is one of the latest emerging technologies that connect the computer science background with the global changes in food management. As Caleb Harper, researcher from OpenAg (MIT-based), convinces, their aim is to design open-source technology at the intersection of data acquisition, sensing and machine learning. Digitising the plant's experience, its phenotype, the set of stress it encounters, and its genetics lets them build networked tools, open for everybody and fully useful.

Even though the aforementioned enterprise is just dawning, one can somewhat forecast its development and potential branching using philosophical and futurological tools. Anne-Françoise Schmid proposed an intriguing method for conceptualising new inventions, structures, etc. To define a given object is to recognise all of its constitutive characteristics—and as Schmid puts forward, the interdisciplinary approach begets means of transcending the limiting aspect of current definitions. To progress, an integrative object is to be created—a one that is conjured by speculation through elimination of certain constitutive parts.

From the technical point of view, vertical farming is a plant-growing format that employs contained environments where light, water, nutrients, temperature, and other climate variables are provided artificially under computer control. By recognising the technologies used in cyber-agriculture and analysing them as integrative objects, various development scenarios for the titular phenomenon are to be proposed.

As far as the technology of vertical farming touches the most basic human need—food and nutrition that could be considered as a factor that is creating social relations both globally and locally and also as entangled in the capitalist system—there are certain questions that should be asked from the social, philosophical, and posthumanist approach.

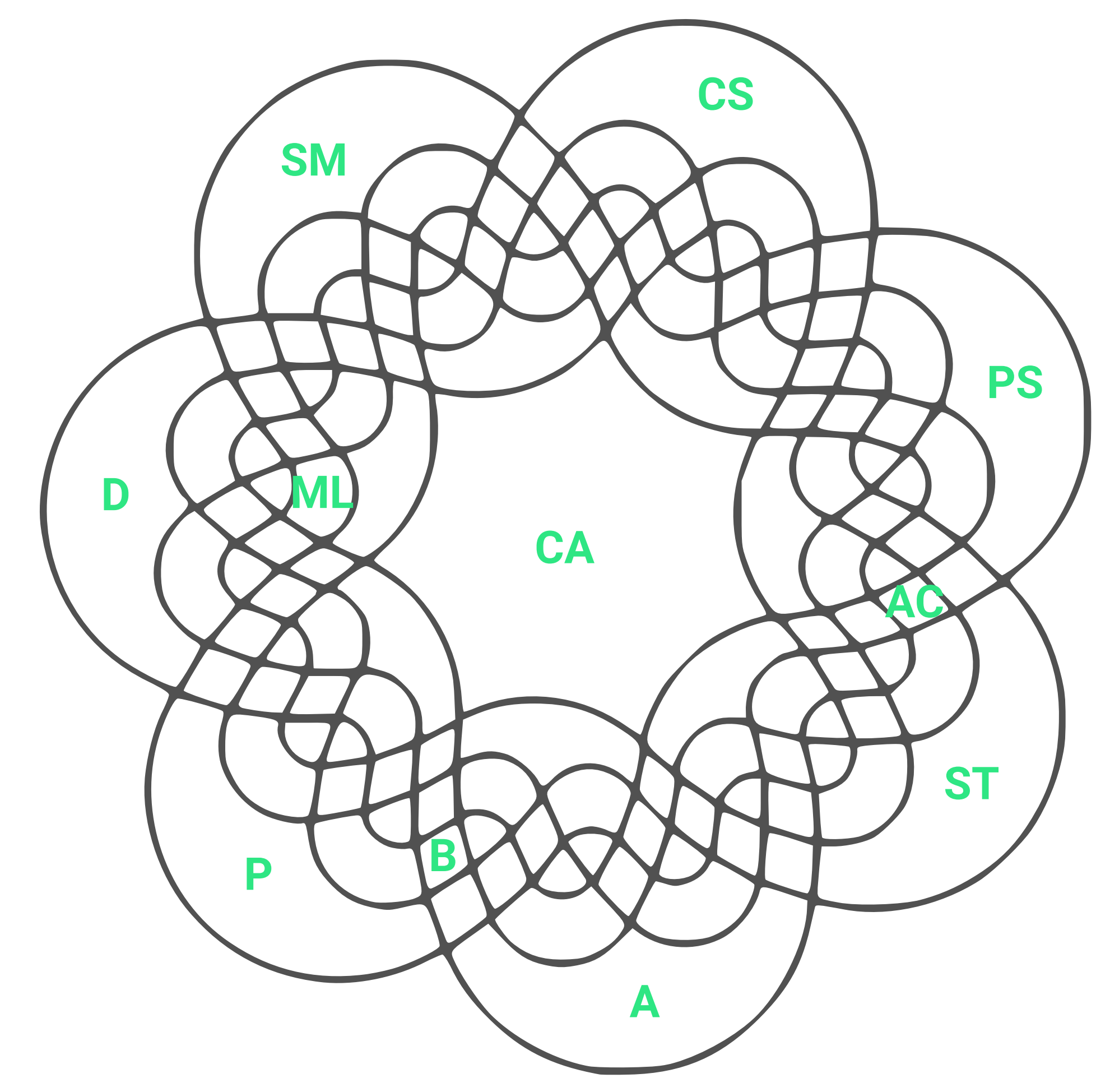
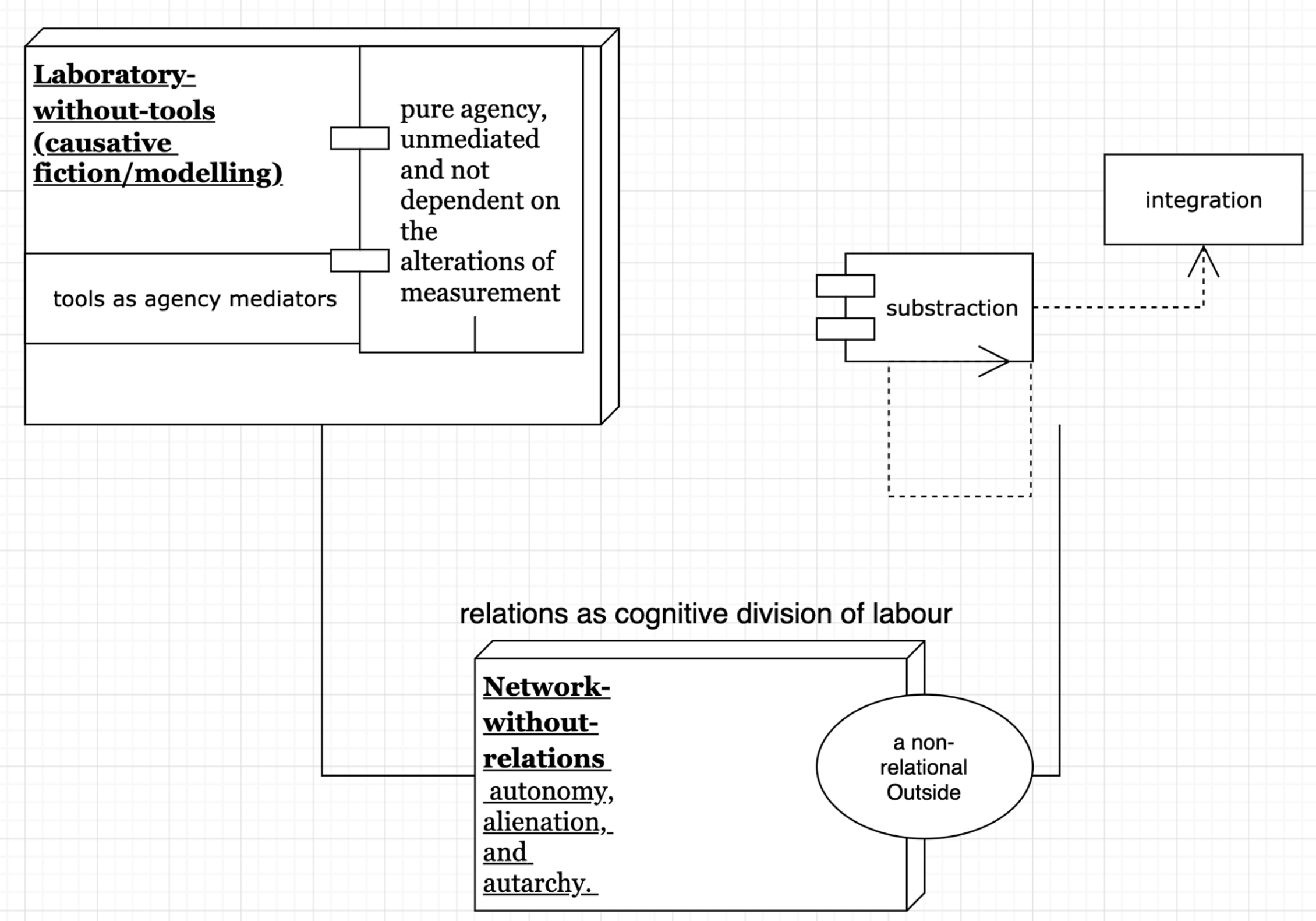
'We are unable to understand certain contemporary objects without excluding something from them, without somehow mutilating the object that we wished to understand. These objects are, at once, acts of aggression and choreographed performances and technological simulations and training exercises.'



Schmid A-F (2012),
On Contemporary Objects



Johnson AJ, Meyerson E, de la Parra J, Savas TL, Miikkulainen R, Harper CB (2019), *Flavor-cyber-agriculture: Optimization of plant metabolites in an open-source control environment through surrogate modeling*, PLoS ONE 14(4): e0213918.



cyber-agriculture = applied_chemistry + botany + machine_learning

applied_chemistry = chemical_substances + problem-solving + scientific_theory

botany = algorithms + plants + scientific_theory

machine_learning = algorithms + datasets + statistical_models + scientific_theory

Gagliano M (2018),
Thus Spoke the Plant,
Berkeley, CA

'[...] the [philantropy] term is applied to plants in the original meaning of the word—derived from the Latin philanthropia, which, in turn, was derived from the ancient Greek philanthropos ("loving humanity" from phil-, "loving" and anthropos, "humanity")—by referring to the sense of caring, nourishing, supporting, and enhancing the human being.'

terra0 is a scalable Ethereum-based framework technological augmentation for ecosystems. Via Decentralised Autonomous Organisation for managing lands, it aims to create a predetermined rules in the economic sphere as agents in their own right.



I like to think of a cybernetic meadow

