

Nordic AI Meet 2026

O5. AI in Culture & Creativity (Thu 11:15-12:15)

4. Greening Data: Plants, AI and the Design of Ecological Sensing

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Abstract: Our relation to the living environment is increasingly mediated by AI architectures: technical infrastructures of sensors, datasets, algorithms, and platforms that shape how living systems are perceived, measured, and governed. Nowhere is this more visible than in Precision Horticulture greenhouses, where plants are continuously monitored through imaging systems and environmental sensors, cared for by smart robots, and governed by AI decision-making infrastructures. These tools are presented as neutral instruments for optimisation, but operate as an epistemic apparatus, reducing vegetal life to quantifiable signals while relying on energy-intensive, extractive data regimes that extend beyond the greenhouse, embedding plant-care practices within planetary systems of extraction, energy consumption, and waste.

This paper starts with a careful microphenomenology of the design of sensing and AI-driven algorithmic architectures for Precision Horticulture. Rather than approaching them as abstract systems, I examine specific digital devices and operations that reconfigure perceptions and carry implicit ecologies beyond the greenhouse: capturing light spectra, translating growth into data streams, modelling plant behaviour in latent spaces, using computer vision to select and separate. Here, sensing is not simply measuring, it is also framing what life counts as valuable. The algorithmic architecture of AI plant sensing is both tool and medium: it produces a "Medianature," where vegetal ontologies are transformed into legible, optimisable, and governable data.

In a second part, I study a series of design, artistic and experimental media projects that reappropriate and rescale the same plant-sensing and AI technologies. Rather than scaling up data extraction, these works design small scale, situated dispositifs in which the dominant hierarchy between humans, plants, and technical elements is challenged. Through critical gestures such as hand-built datasets, biofeedback systems, or plant-driven interfaces, they shift the narrative of AI and sensing technologies from instruments of remote observation to prostheses for embodied encounters rehearsing new modes of ecological attention. AI and algorithmic technologies are not abandoned, but reoriented: they become critical or relational interfaces, rather than an extractive apparatus.

Such practices suggest an alternative trajectory for designing AI-mediated interactions with the environment. Instead of pursuing totalising models of environmental control through AI, could we cultivate modest, local, heterogeneous machine intelligence infrastructures attentive to the cultural, material and ecological conditions of their production and use? By focusing on micro-scale interactions between bodies, tools, materials, and AI-driven media, I open a space for reorienting the design of AI technologies, not in a paradigm of optimisation, but of relation.