Uncovering Machine Vision in Videogames

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EXTENDED ABSTRACT

Machine vision – the registration, analysis, and representation of visual information by machines and algorithms (Rettberg 2017) – is currently hiding behind videogames' playful exterior. However, machine vision technologies such as night vision overlays, facial recognition systems, and surveillance cameras have been represented within virtual environments for decades. To bring into the light and acknowledge this technology as an important agent, I build on theorizations of videogames as assemblages of multiple agents (Taylor 2009) and of posthuman interrelated agency (Hayles 2017; Braidotti 2013). This study thus provides an overview of diegetic representations of machine vision in videogames in order to begin an analysis of distributed agency between human and nonhuman agents.

Machine vision has a longstanding history in videogames. In the 1980s, players could control an unmanned ground vehicle (UGV) equipped with a camera and infrared vision. This specific example is *Hacker* (Activision 1985), and saving the world is only possible with the aid of the UGV's vision. In part due to technological limitations, a common feature of older machine vision videogames is having the player experience the virtual environment through surveillance cameras. This means that the developers can limit the videogame to a fixed view, most notably seen in full motion videogames such as *Night Trap* (Digital Pictures 1992). Catching the videogame's vampiric Augers with traps is a matter of switching between home surveillance cameras (containing already filmed real world content) and clicking at the correct time to activate the trap. Contemporary videogames often feature several machine vision technologies in one videogame. For instance, *Death Stranding* (Kojima Productions 2019) presents holograms, biometrics, and the "Odradek"; a portable scanner that analyzes terrain and reveals the feared creatures known as the "BTs". Furthermore, machine vision technologies in contemporary videogames often cooperate with each other. Sometimes this cooperation has limited or no human input in the diegetic representation, as in *Observation* (No Code 2019). Here, the player is a space station's artificial intelligence system with access to surveillance cameras, drones, and webcams, all equipped with object recognition.

This study aims to map the manifold representations of machine vision technologies in videogames' virtual environments. The data is currently based on 47 titles featuring visualizations of one or more of the following technologies: motion tracking, surveillance cameras, augmented reality, virtual reality, unmanned aerial or ground vehicles (drones), non-visible spectrum, biometrics, filters, webcams, holograms, object recognition, camcorders, body scanners, optical/ocular implants, emotion/facial recognition, and artificial intelligence. I gather information on the visual representation of machine vision (both design features and the context in which it is found), on the

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positioning of agents such as the player character and other characters in relation to machine vision, and on the actions all agents perform in a given situation in relation to each other.

A preliminary understanding indicates that machine vision in videogames historically tends to be portrayed as an objective lens through which something else is experienced or in which an objective truth is discovered. Seldom are players and player characters given reasons to doubt this technically enhanced vision. The previously mentioned surveillance cameras in *Night Trap* and holograms in *Death Stranding* present the world "as is", even if the vision provided is a transformation of perception by machines. Moreover, when players enact agency upon or through a machine vision technology, it usually presents as a helpful tool, whereas the sentiment takes a negative turn when player characters are subjected to the gaze of the machine. Several representations of machine vision in videogames then thematically fall into the understanding of the human as "autonomous and unambiguously distinct from its world", which leads to conceptualizing the relationship between human and nonhumans as an "either/or relationship" (Keogh 2014, 240). Only a small sample of the current corpus explicitly challenges the idea of technically enhanced vision as an objective tool, by showing how human and nonhuman actors are inextricably connected in complex assemblages (as seen in *Observation*).

In short, this study asks what we might find when we consider machine vision technologies as agents. By acknowledging the interwoven and dynamic relationships between all agents, we are forced to rethink the binaries with which we operate. We can thus begin to uncover the effects of the "nonhuman member tagging along" (Taylor 2009, 335); the "hiding-in-plain-sight" technology of this large body of videogames.

Keywords

Machine Vision, Technology, Assemblage, Posthumanism, Hacker, Night Trap, Death Stranding, Observation

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