

Gaitless: An Interactive Dance Space for Outweirding the Machine



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Gaitless is a participatory dance performance and interactive installation that explores anti-surveillance and anti-AI tactics through choreography. The project was inspired by a news story in which bank robbers allegedly bypassed AI-powered security cameras by rolling instead of walking, confusing systems trained to recognize human gait. In this case, evasion became a creative act. Instead of trying to outsmart artificial intelligence, *Gaitless* proposes a different approach: *out-weirding* the machine. Participants enter a shared movement space equipped with an Azure Kinect sensor. Rolling, crawling, and unstable erratic movements form the basic material of what seems to become a dance; a choreography that emerges from evading the machine's gaze. Through this constraint, the piece exposes the narrow ideas of "the human" embedded in machine vision; at the same time, it highlights human strangeness, weirdness, improvisation, and play. Drawing on traditions of aesthetic evasion, camouflage, and tactical art, *Gaitless* treats choreography as an embodied critique of algorithmic surveillance. This paper reflects on the project as an artistic research practice and considers participatory choreography as a way of practicing deliberate unreadability within contemporary regimes of algorithmic vision.

Keywords: Participatory Performance,
Choreography, Anti-Surveillance, Artificial
Intelligence, Gait Recognition, Embodied
Interaction, Tactical Aesthetics.

Fig. 1. *Gaitless* performance at the CNDB in Bucharest, Romania. Photo: CNDB.



Moving Against the Algorithm

The entertainment industry is, in any conceivable sense of the word, an abuse of army equipment. (Kittler 1986)

A few years ago, we came across a peculiar news story. A group of bank robbers robbed a bank by fooling surveillance cameras powered by artificial intelligence. These cameras were programmed to recognize human motions, human movements, human gaits. But the robbers did not walk like humans. Robbers rolled, robbers crawled, robbers moved strangely, and outwitted the AI. They didn't outsmart the AI, they *out-weirded* it.

This story became the beginning point for *Gaitless*, our participatory dance performance and interactive installation that treats evasion as a choreographic principle. The performance unfolds in a shared theatrical space where dancers and visitors take turns moving in front of an AI-based tracking system. Their movements are constantly evaluated, and the system's classifications appear as a simple interactive game projected onto the floor.

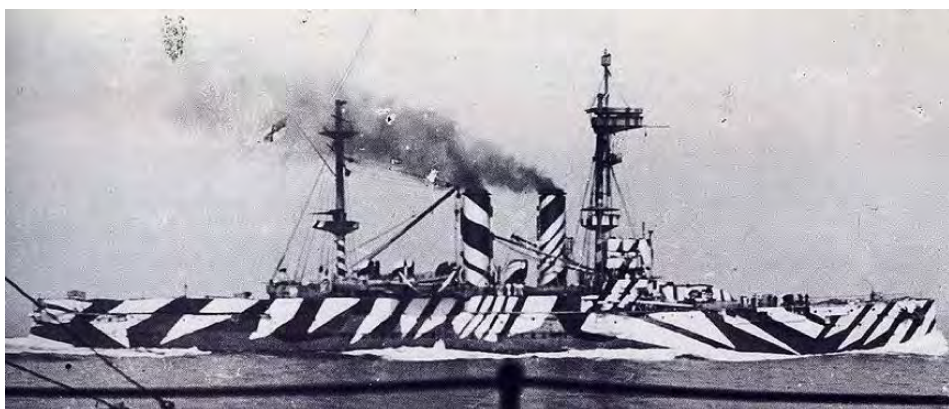
Gaitless asks the following question: what happens when movement deliberately departs from algorithmic models of the human? Does it create a novel form of dance? In this case, unreadability is not a failure but a goal; it is, in other words, a *feature*, not a bug. Movement thus becomes a site of friction and resistance, where participants explore how small shifts in posture and rhythm can unsettle and bewilder machine perception (Fig.1).

Tactical Aesthetics and Embodied Resistance

There is an interesting historical precedent for aesthetics that emerge from tactics. An example comes from early twentieth-century military

technology. During the First World War, British and U.S. naval forces began painting ships in high-contrast zebra-like patterns of black and white (Fig. 2). These geometric surfaces were meant to confuse enemy perception, especially from German torpedo-equipped U-Boats. Known as *Dazzle camouflage*, the technique aimed to make it difficult for submarine crews to estimate a ship's speed, direction, and distance (Barton 2017). Function followed strategy, but the result was strangely visual and expressive. When Pablo Picasso reportedly encountered Dazzle-painted ships, he said the idea is an example of Cubist aesthetics. Whether apocryphal or not, this anecdote shows that tactical necessity often gives rise to new aesthetic forms.

Fig. 2. HMS London. An example of a Dazzle ship. 1918. Photo: The Public Domain Review.



A century later, similar principles reappeared in relation to AI, machine vision, and digital art. In 2010, artist and technologist Adam Harvey initiated *CV Dazzle*, a project that proposes fashion and styling strategies designed to disrupt face recognition algorithms (Harvey 2010). Unlike traditional camouflage, which wants to make human observers invisible, *CV Dazzle* remains completely visible to humans. Bold makeup and asymmetrical hairstyles break the patterns expected by computer vision systems. As with Dazzle ships, style emerges directly from technical resistance.

Our previous project *Tactical Poetics* applied similar logic to language. Developed with artist and researcher Darija Medić, the project explored writing as a counter-surveillance technique, focusing on systems for sentiment analysis and emotion recognition (Medić and Krčadinac 2020). By composing texts that algorithms struggled to classify, but humans could easily interpret, the work exposed the statistical simplifications embedded in natural language processing. Metaphors and allegories have always been, at least in part, a form of strategic encryption of meaning; what makes this novel is the computational aspect of contemporary machine-mediated power. *Tactical Emotion* is, in other words, writing against the machine, recontextualized as poetry. *Gaitless* extends this line of inquiry from makeup and language to the moving body.

In a wider context, *Gaitless* addresses automated surveillance. Recent advances in machine perception show that surveillance no longer operates only through images or language, but increasingly through bodily movement. Research by Preis et al. (2012) demonstrates how depth sensors like the Kinect can identify individuals based solely on how they

walk. Movement becomes a biometric signal translated into abstract data structures. Related artistic works such as Tomo Kihara's *How (not) to get hit by a self-driving car* likewise expose the blind spots and exclusions embedded in AI-based detection systems (Kihara 2023). This expansion of AI into bodily behaviour is inseparable from what Shoshana Zuboff describes as *Surveillance Capitalism* (Zuboff 2019), in which human experience is treated as raw material for prediction and control. Bodily movement becomes another source of behavioural surplus, collected not for the benefit of those who produce it, but to optimize systems of control and profit accumulation.

Gaitless positions itself against this logic by fostering movement that resists classification, turning anti-AI movement into dance. Choreography has long been understood as a way of organizing bodies in space, shaping perception, and producing social meaning. As Susan Leigh Foster writes, movement carries political and relational dimensions beyond formal aesthetics (Foster 2011). In Michel de Certeau's terms (de Certeau 1984), *Gaitless* treats algorithmic vision as a strategic field and develops bodily tactics that inhabit and subvert its logic. Strategies, for de Certeau, belong to institutions that command a proper place—states, planners, corporate platforms—and codify how space, movement, and visibility should be organized, whereas tactics are “arts of the weak” that must “make do” within these imposed structures, seizing occasions and reusing them in unexpected ways.

In *Gaitless*, participants do not step outside machine gaze; they move inside it, exploiting its training on normative human gait by moving in unstable, inefficient ways so that unreadable movement becomes an artistic strategy. These movements tactically escape legibility, using the system's feedback as material for improvisation; movement becomes embodied refusal, and evasion turns into choreographic invention rather than avoidance.

There is a paradox at the core of *Gaitless*. Participants try to appear non-human to an AI system by disrupting their gait; yet in doing so, they show precisely those qualities that make humans different from machines: improvisation, intuition, embodied creativity. To fail recognition is to affirm humanity: to be *human* is to be a *non-human*. The project's informal Serbian slogan captures this dialectic: “ko je čovek, nije čovek, a ko nije, čovek je” (“who is human is not human, and who is not is human”). In this sense, *Gaitless* operates like a choreographic kōan. Gaitless gait. Gateless gate. The attempt to escape classification becomes a way to unexpectedly meet oneself through movement.

Gaitless: System Setup and Technical Development

The live performance unfolds in a shared dance space monitored by an Azure Kinect sensor connected to a computer. Participants' movements are tracked and classified in real time as either *human* or *non-human*. Each participant is given a limited time to perform in front of the system. The goal is simple: to be recognized as non-human.

Success is measured by a threshold. If participants remain unreadable to the system for most of the allotted time, they win. The rewards range from printed artworks to small amounts of cash. The setup is deliberately gamified: the dance space borrows its logic from betting terminals and game interfaces. Time limits and rewards are assigned at random, which turns movement into a playful negotiation with the machine.

Fig. 3 and Fig. 4. *Gaitless* live performance in CNDB, Bucharest, Romania, 2025. Photo: CNDB.



The software for *Gaitless* was developed in TouchDesigner and built around an Azure Kinect Sensor.

The sensor offers real-time skeletal tracking via machine vision and AI. It extracts positional data from key points of the body and creates a skeletal pose if a person is recognized in the current frame. Additionally, a *JointConfidenceLevel* is given for each joint. Our system then evaluates whether a person is recognized or not, based on the current skeletal pose and confidence level. This is determined by the movement veloc-

ity of selected joints, combined with a predefined threshold specifying how many joints must have a high confidence level.

To make the application usable, we could not use the unaltered sensor data, since it often recognized skeletal poses in non-human objects such as a chair, a plant, or a hanging jacket; this would have made consistent operation impossible.

From the perspective of the system, the dancing body is a stream of vectors and confidence values, reduced to measurable patterns that can be classified and evaluated. This technical setup makes visible how contemporary AI systems perceive movement: as abstract data structures.

Fig. 5 and Fig. 6. *Gaitless Bootcamp*, an interactive installation shown at the MODINA exhibition in Düsseldorf, Germany, 2026.



The performance setup includes video projections of the game interface, with a sequence of visual materials, including historical photographs of Dazzle ships. The scenography is further developed through adhesive tape markings on the floor, referencing Dazzle camouflage patterns. These visual elements connect the work to earlier tactical aesthetics and emphasize the political and military genealogy of contemporary AI technologies. Our goal was to create an environment that remains playful and accessible while retaining a clear critical edge. For this reason, each *Gaitless* performance was followed by an open discussion on society and technology.

Alongside the performance, we developed the interactive installation *Gaitless Bootcamp*, which translates the same logic into a self-guided, durational format suited to smaller spaces. After reading a short onboarding text, participants activate the system by pressing a button and entering the space. Once the system starts, the assigned time frame and the possible reward are projected on the floor. Visitors engage directly with the system, rehearsing unreadability through unusual movements. In the latest installation setup (Fig. 5 and 6), the reward consisted of a photograph taken during the participant's movement, as captured by the system's camera. The photograph was printed immediately after the performance time elapsed, provided the participant was not recognized as human (Fig. 7).

Fig. 7. *Gaitless Bootcamp*, participant captured by the system's camera.



From Performance to Installation

Gaitless emerged from a collaboration between a duo from Serbia: digital artist and technologist Uroš Krčadinac, and dancer and choreographer Marko Milić, during their artistic residency in Düsseldorf as part of the MODINA¹ project. The project brought together dancers and media artists to experiment with AI as artistic material (Correia and Primett 2024; 2025). During the residency, the duo worked closely with MIREVI,² a Mixed-Reality and Visualization Lab at the University of Applied Sciences Düsseldorf, and with tanzhaus nrw, both partners in the project. Together with Ivana Družetić-Vogel, Patrick Kruse, and Ben Fischer from MIREVI, the concept of *Gaitless* took shape alongside the development of the software system.

The project premiered as a live performance at tanzhaus nrw in Düsseldorf in April 2025. In autumn 2025, the work toured across Central and Eastern Europe, performing in Budapest (hosted by Trafó), Bucharest (at the Iridescent Festival, hosted by the National Centre for Dance Bucharest) (Fig. 4 and Fig. 5), and Ljubljana (as part of CoFestival at Kino Šiška). *Gaitless Bootcamp*, an interactive installation derived from the performance, was developed for the final MODINA exhibition in Düsseldorf.

1. MODINA: Movement, Digital Intelligence and Interactive Audience. <https://modina.eu/>

2. MIREVI: Mixed Reality and Visualization. <https://mirevi.de/>

After the Gait

To demonstrate that being classified as non-human can make one *more human* is not, ultimately, a critique of the system's imperfection. The threshold can always be recalibrated and pushed toward ever more demanding limits; it is, after all, human made. What matters is making the artificiality of this threshold itself palpable. In *Gaitless*, it functions as a line of demarcation between bodies deemed more or less human. But it could just as easily demarcate any other supposedly measurable division: more or less accountable, more or less admissible, more or less life-worthy.

This small, scrutinized performance field reveals how our field of view and our field of action are always conditioned by how we code them—in technical, social, and cultural senses alike. The paradox the system exposes—that the one who appears fully human becomes fully non-human—is ultimately a paradox of terms. Humans stand on both sides of the divide. Humans design the system, define the threshold, and interpret its results. Humans move, humans view, humans judge.

By approaching AI as a condition encountered through the body, *Gaitless* allows this paradox to be felt rather than resolved. After the gait, what remains is a heightened attention to presence. Perhaps this is where resistance begins—in strange small steps, unstable rhythms, in simple acts of moving otherwise.

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