

# HUMAN OVERS[A]IGHT: THE OPS ROOM

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## Abstract

HUMAN OVERS[A]IGHT: THE OPS ROOM is a real-time generative, interactive audio-visual installation developed as a human oversight department for high-risk AI systems. It is established according to the European Artificial Intelligence Act [EU AI Act], as described in Article 14, which suggests that in high-risk AI systems a human-machine interface such as a “stop button” is needed, to bring the system to a halt. Can the system be stopped by a button, and why not? We investigate how humans can oversee and evaluate these processes, by visualizing the internal operations of an automated system. We invite visitors to take upon a central role in human oversight of high-risk AI systems and encourage them to engage with a human-machine interface to oversee the systems’ operations. We provide possibilities for action for people to claim back their political agency to stop or affect the system [5].

## CCS Concepts

• **Computer systems organization** → Real-time systems; Real-time operating systems; • **Applied computing** → Law, social and behavioral sciences; Law; • **Social and professional topics** → Computing / technology policy; Government technology policy.

## Keywords

artificial intelligence, human oversight, EU AI Act, human-machine interface tools

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“Human oversight”

1. High-risk AI systems shall be designed and developed in such a way, including with appropriate **human-machine interface tools**, that they can be effectively overseen by natural persons during the

period in which they are in use. (Art. 14, EU Artificial Intelligence Act, our emphasis)

Amidst dystopian and utopian imaginaries on AI taking over the command of the world, the legislator introduced a human oversight mechanism of AI operations. Article 14 of the EU AI Act, states that high-risk AI systems shall be designed and developed with **human-machine interface tools** that allow the system operations to be *overseen in real-time by a natural person*. This legal requirement opens many questions we address in this artwork, such as how to visualize the operations of an AI systems, so to be controlled by a human? [6]

## \_PROJECT DESCRIPTION

HUMAN OVERS[A]IGHT: THE OPS ROOM is a four-channel video and audio installation with real-time computer vision application consisting of custom-made models for object detection and video inpainting, and a physical interface – a custom-made object with thirty-four buttons as modalities of interaction (Figure 1).

The real-time video processing runs on a curated dataset of more than hundred hours of video footage. The footage are publicly available video recordings of police enforcement, military operations, reports of civil disobedience, protests, mass gatherings and cityscapes. The footage is shown in a monochromatic colour scale, while the computer vision operations performed on them are highlighted dominantly in red tones, such as red frames or gradient saturated overlays.

## \_VISION

The references for the concept and the aesthetics of video installation come from the analysis of the *operational image* [2, 3] as well as the concept of invisibility [1], and the artwork series *Eye Machine* by Harun Farocki, and previous computer vision-based works of Tica [4], problematising the notion machinic vision against the human eye, the computational pattern discrimination by statistical correlation against human’s contexts of representation, and of the causality of relations.

## \_SOFTWARE

The computer vision model is trained on the selection of high-risk or life-threatening operations in real life, detecting armed policemen, demonstrations, military vehicles, and weapons, and attacked civil areas, demolitions, and environmental catastrophes such as wildfires. The model has been iteratively improved and fine-tuned, and the training objects and the arrays of labels are expected to grow throughout a longer research period.

Currently, there are three applications (Figure 2) performing based on (1) object detection algorithms and object masking, (2) blurring out suspected subjects from the custom-trained model and



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**Figure 1: Authors. 2025. HUMAN OVERS[A]IGHT: THE OPS ROOM at the Ars Electronica Festival 2025, Linz, Austria (<https://humanoversight.cargo.site/>).**



**Figure 2: Authors. 2025. Computer Vision operations for HUMAN OVERS[A]IGHT: THE OPS ROOM.**



**Figure 3: Authors. 2025. Stop buttons interface in HUMAN OVERS[A]IGHT: THE OPS ROOM.**

overlaying the detected area with heatmaps [saliency maps]; and (3) video inpainting that fills in areas of objects detected in the video.

#### INTERACTION

While interacting, the participants are directly affecting the algorithm, changing the content on the screen in real-time. By pressing the buttons, different layers of AI operations become visible to the visitor, modifying and conditioning what is overseen.

The video installation display is screened on a composition of thirty-three square LED modules, distributed and arranged into a semi-arc formation of five self-standing pillars, up to three meters high, in an area of eight square meters, with the button-object as the centrepiece (Figure 3). The videos are manipulated in terms of speed [slowed down] and zoomed-in areas, triggering adjustments in the visitor's perception. On one hand, the glowing and blinking red buttons that are attached onto a 1,5m wide and 1,2m

tall metal structure invite for a fast reaction, their multitude as well as gamified sound triggers create a level of playfulness in the interaction, while the videos have a contrasting atmosphere, they are slow, demanding patience in anticipation and observation.

The goal of this project is rather to create alarms to open a space for self-evaluation and embodiment of a human-machinic process of negotiation, providing feedback interactions that have decision-making processes as its consequences. The purpose is to give to the human who performs the oversight just enough space to feel unsure about what is the scope of a risk, concern, or to try to understand what or who is set to be a 'target' by the algorithmic evaluation. The artwork establishes an open end, leaving the space for the visitor to develop their point of self-reflection, to make sense of what AI operations and patterns are at work.

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