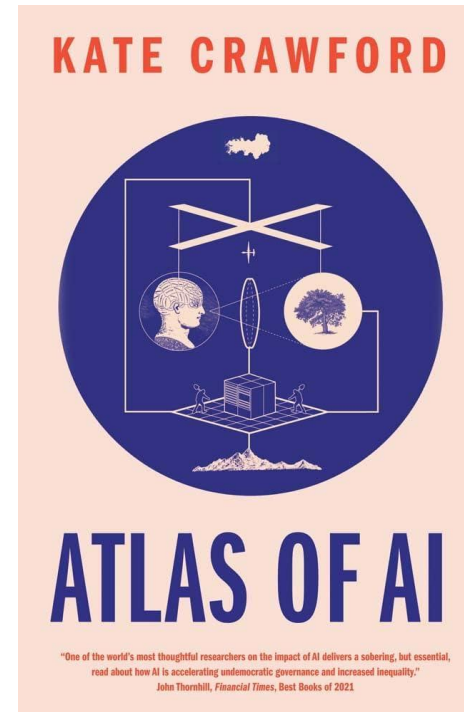# Ghost Work

The unseen labor behind AI

Hyun Cho MAT 200 Dec 2 2025

Kate Crawford

Kate Crawford is a leading scholar of artificial intelligence and its material impacts. She is a Research Professor at the University of Southern California, a Senior Principal Researcher at Microsoft Research New York, and the inaugural visiting chair of AI and Justice at the École Normale Supérieure in Paris.

Crawford leads the interdisciplinary lab Knowing Machines Project, a transatlantic research collaboration of scientists, artists, and legal scholars that investigates how AI systems are trained.

KATE CRAWFORD

ATLAS OF AI

"One of the world's most thoughtful researchers on the impact of AI delivers a sobering, but essential, read about how AI is accelerating undemocratic governance and increased inequality."
John Thornhill, *Financial Times*, Best Books of 2021

Atlas of AI

Anatomy of an AI / Calculating Empires: A Genealogy of Power and Technology
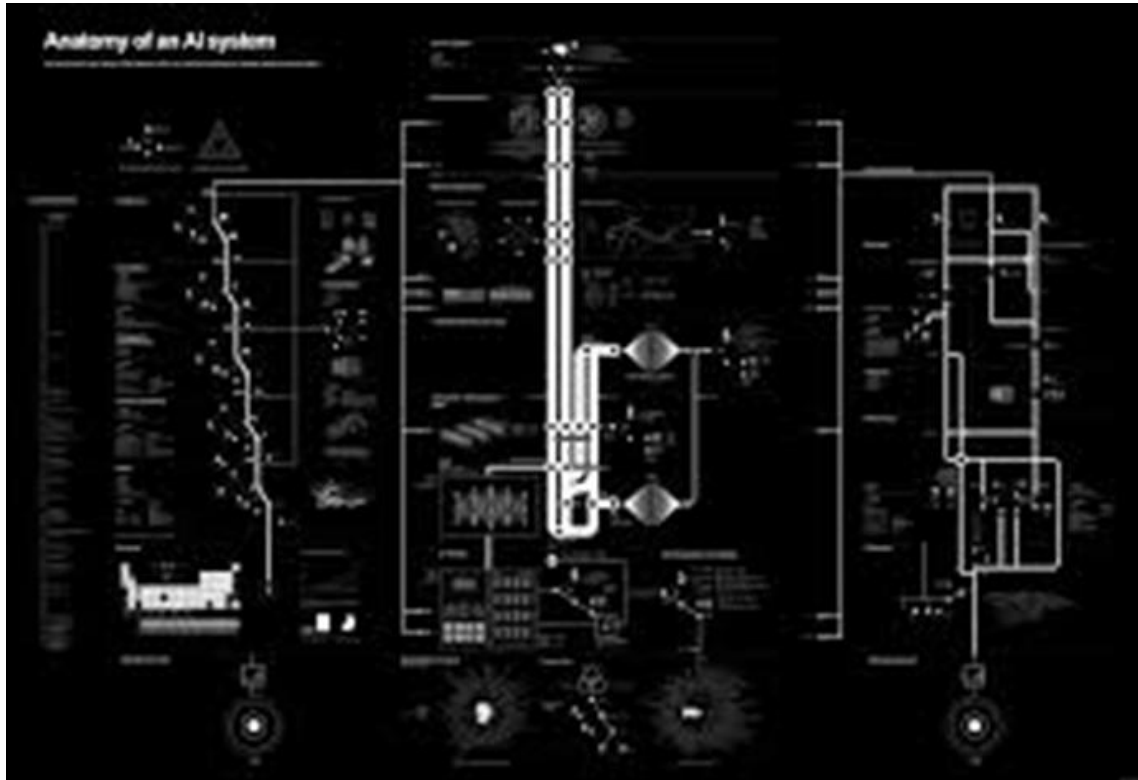
Kate Crawford, Vladan Joler. *Anatomy of an AI System.* 2018

Kate Crawford, Vladan Joler.
Calculating Empires: A Genealogy of Power and Technology, 1500-2025
2024

Contemporary forms of artificial intelligence are neither artificial nor intelligent.

- Kate Crawford

Ghost Work

Ghost work is work performed by a human, but believed by a customer to be performed by an automated process.

The term was coined by anthropologist Mary L. Gray and computer scientist Siddharth Suri in their 2019 book, *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass.*
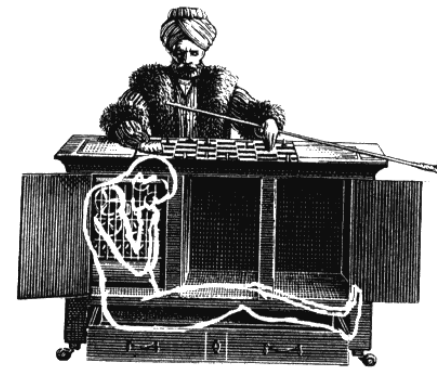

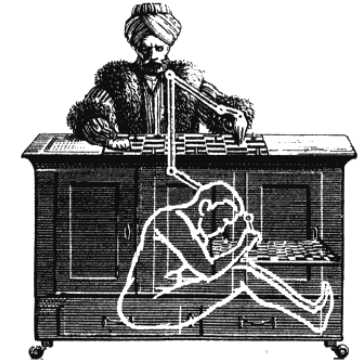Mechanical Turk

"Instead of asking whether robots will replace humans, I'm interested in how humans are increasingly treated like robots and what this means for the role of labor."
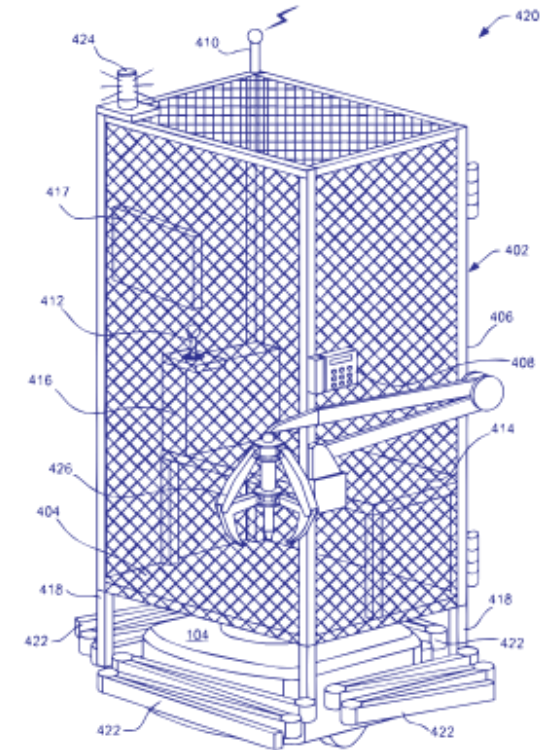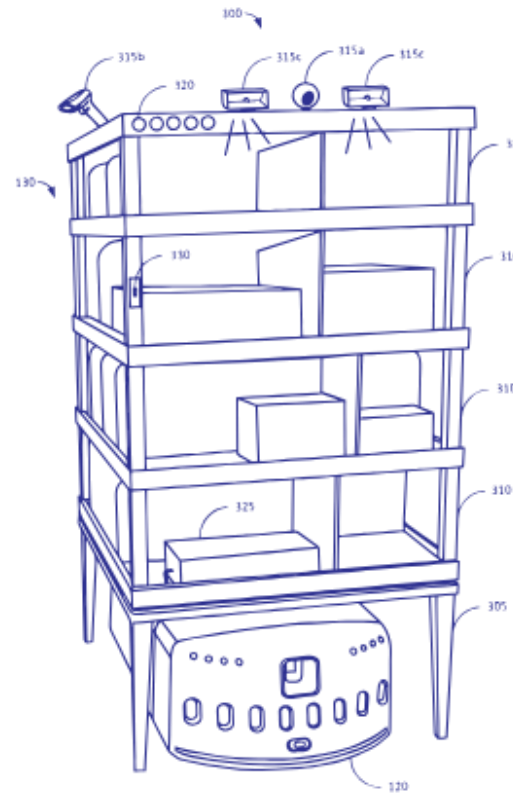
- Kate Crawford

Harun Farocki
Workers Leaving the Factory 1995

Algorithmically Managed Labor

Surveillance

Algorithmic assessment

Modulation of time

Raffaello D'Andrea
Kava Systems 2003

Simon Denny

Amazon worker cage patent drawing as virtual King Island Brown Thornbill cage (US 9,280,157 B2: "System and method for transporting personnel within an active workspace", 2016); 2019; Powder coated metal, plastic, digital print on cardboard, iOS augmented reality interface: 293 ×222 ×253cm.

This sculpture is based on a patent filed by Amazon in 2013 for the construction of a warehouse worker's cage, meant to hold and confine the employee as it is remotely steered by an automated system run by algorithms.

The patent document itself is the subject and medium of Denny's Document Relief works, 3-D prints that model parts of the patent using intricately cut-and-glued layers of printed patent pages. The construction of this worker cage was never pursued, yet it serves as an apt metaphor for the dehumanizing tendencies of surveillance capitalism.
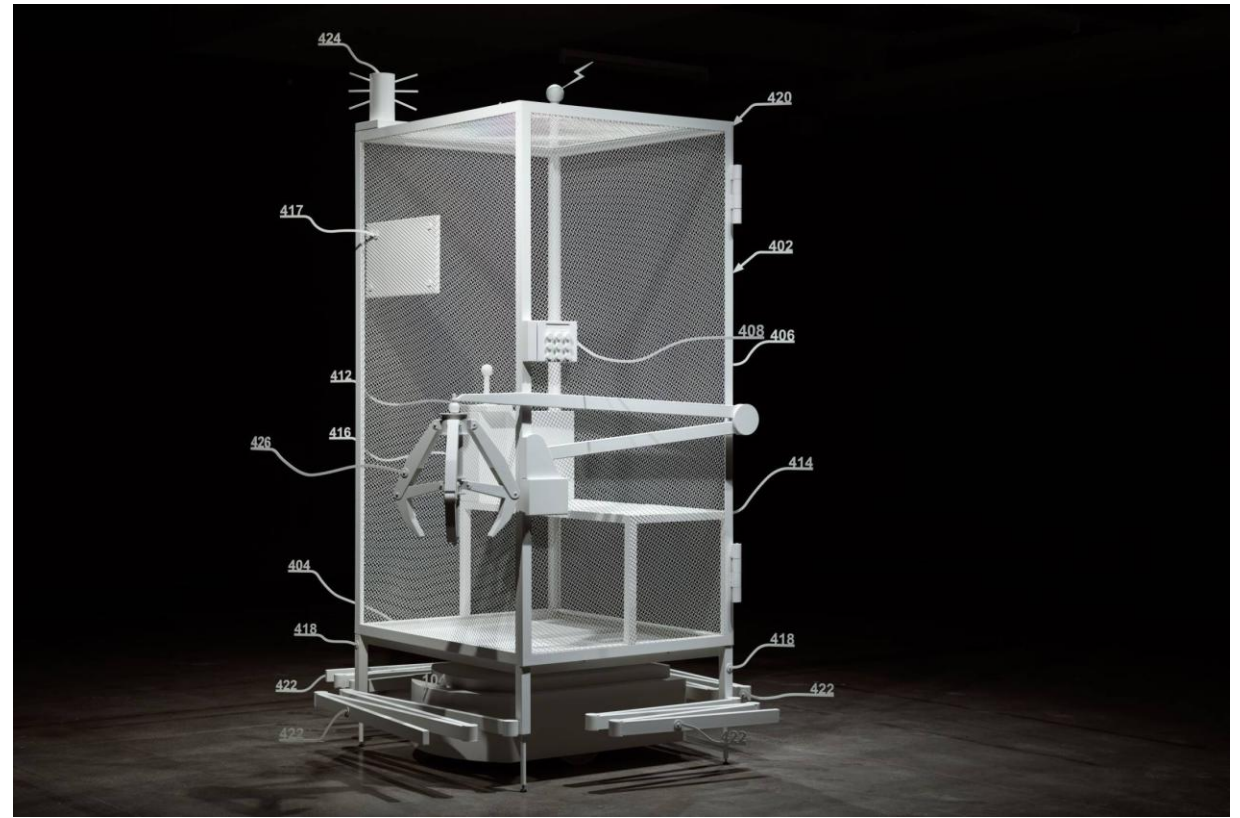
Ayoung Kim

Delivery Dancer Simulation
2022, game simulation, approx. 12 min

In *Delivery Dancer Simulation*, Ayoung Kim designs inhabitable worlds that are rooted in the one we know. As the player, you take on the role of a female delivery driver navigating a fictional, futuristic and labyrinthine version of Seoul.

Through the avatar, you try on life in the gig economy. You are moving to a countdown clock, much like a gig worker.

This videogame simulation models the already gamified nature of the gig economy. Playing the simulation, you may feel closer to the pressures of the Delivery Dancer.
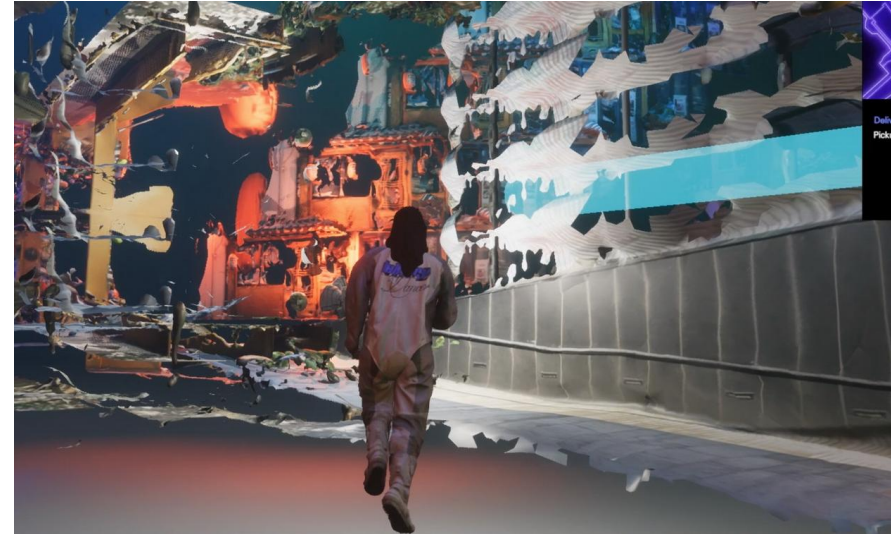
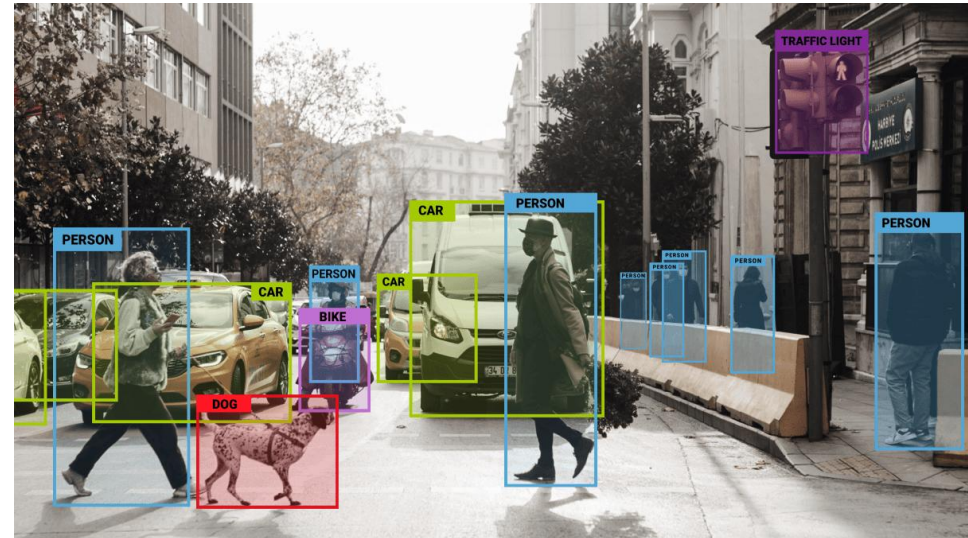# Fauxtomation (Ghost work)

Data Labeling

Content Moderation

Data Labeling

"Crowdworkers report persistent low compensation, often falling below local minimum-wage standards despite increasing educational levels among workers."

— Köchling et al., 2025

Agnieszka Kurant

Aggregated Ghost, 2020

The term "ghost workers" is often used to refer to the millions of clickworkers scattered across the world, mostly in the Global South, whose outsourced labor is required for the training of AI systems and for the moderation of AI-generated contents. For *Aggregated Ghost*, Agnieszka Kurant asked ten thousand online workers on the

Amazon Mechanical Turk crowdsourcing platform to each send her a self-portrait. Using neural networks, she then fused these images into a "composite self-portrait". Taking one line of pixels from each image, she produced what can be seen as a collective, crowdsourced image of this new working class. She paid the participants for their images and redistributes the profits to them whenever a copy of the artwork is sold.

Anna Ridler

Myriad (Tulips), 2018

Myriad (Tulips) is an installation of thousands of hand-labeled photographs of tulips. By choosing to make the dataset an artwork it draws attention to the skill, labour and time that goes into constructing it, whilst also helping to expose the human element in machine learning, usually hidden by algorithmic processes.

By choosing to create a physical installation of the dataset as *Myriad (Tulips)*, aspects about the data can be comprehended in a way that they might not be otherwise. The installation of all of the photographs is over 50 square meters, giving an overwhelming sense of the time, money and effort that goes into constructing a dataset. Each photograph is carefully affixed one by one with magnets to a specially painted black wall in a laborious process to form a seemingly precise grid. Up close, however, slants and errors come into view, evoking the imperfect and arduous human labor behind machine learning and also its imperfection.

Trevor Paglen

From 'Apple' to 'Anomaly' (Pictures and Labels)

Paglen took a close look at the most widely-used "training set" used in AI – ImageNet, a database of over 14 million images organized into more than twenty-thousand categories.

The installation was made out of approximately 30,000 individually printed photographs, showing the precarious relationships between images and labels in a kind of extended homage to Magritte's "Treachery of Images" for the age of machine learning.
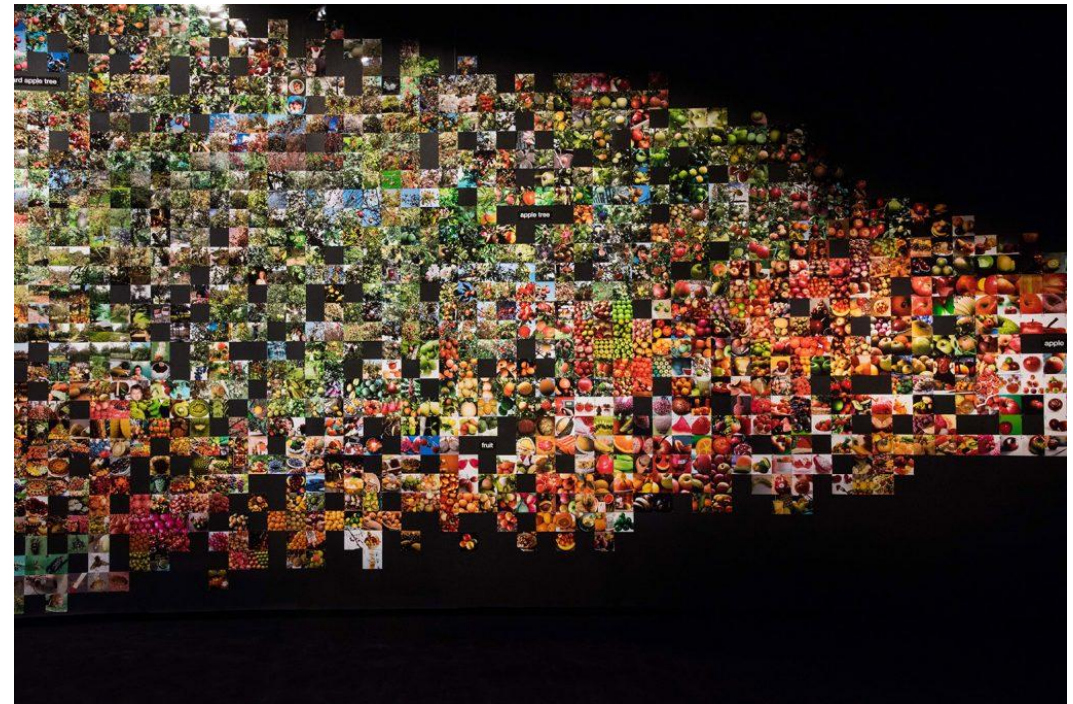
Content Moderation

"Moderation work — reviewing violent videos, hate speech, and other forms of online cruelty for deletion — is often outsourced and poorly paid, despite its psychological toll."

— Sarah Roberts & Tarleton Gillespie

Eva & Franco Mattes

The bots, 2018

We know everything we post to social media is screened and surveilled, reportable and deletable. The bots are not bots, they are human beings in offices applying rules handed down from outside.

Artists Eva & Franco Mattes have embarked on a video project along with writer Adrian Chen to talk to the not-bots, the Facebook content moderators forbidden from speaking to the press or to anyone, really, warned there might be "spies" in their midst. To tell their stories Mattes have taken up a political form innovated by activists like Feroza Aziz on TikTok, who use commonplace and enchanting social media vernaculars like makeup tutorials to sneak in education.

Speaking to their smartphones from their apartments, actors perform anonymized versions of the interviews conducted with Facebook content moderators, combining the mundane levity of dressing up for one's followers with the equally mundane horror of online hate.

Day in and out, content moderators are forced to skim the worst social media has to offer and to process it "unemotionally." They're delivered updated rules and guidelines that often seem arbitrary or conflictual.

Forensic Architecture

Model Zoo, 2020

Computer vision increasingly depends on machine learning classifiers that must be trained on thousands of images of a specific object.

For many objects, however, there are not enough images available, and collecting and annotating them is highly labor-intensive.

Since 2018, Forensic Architecture has addressed this problem by using "synthetic images"—photorealistic digital renderings of 3D models—to train classifiers to recognize various types of munitions.

Their "Model Zoo" is a growing database of 3D weapon models and the classifiers trained to identify them, effectively cataloging many of the dangerous weapons used in contemporary conflict.

One key focus is the 37–40mm tear gas canister, widely deployed against protesters in places such as Hong Kong, Chile, the United States, Venezuela, and Sudan. To automate the identification of these projectiles in the massive volume of videos uploaded online, Forensic Architecture created thousands of synthetic variations of the canisters—showing different deformations, scratches, burn marks, and labels—and used these rendered images as training data for machine learning system
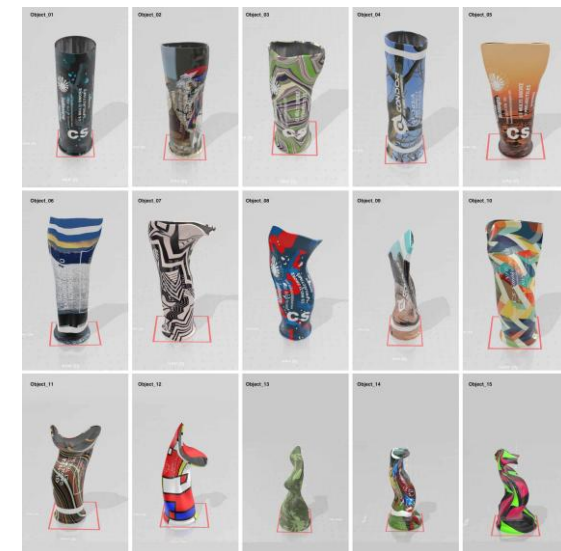
Lauren McCarthy

SOMEONE, 2020

SOMEONE imagines a human version of Amazon Alexa, a smart home intelligence for people in their own homes. For a two month period in 2019, four participants' homes around the United States were installed with custom-designed smart devices, including cameras, microphones, lights, and other appliances. 205 Hudson Gallery in NYC housed a command center where visitors could peek into the four homes via laptops, watch over them, and remotely control their networked devices. Visitors would hear smart home occupants call out for "Someone"—prompting the visitors to step in as their home automation assistant and respond to their needs. This video installation presents documentation from the initial performance on four screens throughout the space

Conclusion

"Automation is not the elimination of human labor, but the concealment of it."

- Kate Crawford

Conclusion

To understand how AI is fundamentally political, we need to go beyond neural nets and statistical pattern recognition to instead ask what is being optimized and, for whom and who gets to decide

- Kate Crawford

References

- Crawford, K. (2021). *Atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press.

- Paglen, T., & Crawford, K. (2023). *The world through AI: Poems, pictures & code*. JBE Books.

- Shanken, E. A. (2009). *Art and electronic media*. Phaidon Press.

- Zylinska, J. (2020). *Beyond the uncanny valley: Being human in the age of AI*. MIT Press.

- Denny, S. (n.d.). *Mine*. Retrieved from https://simondenny.net/mine-main-project/

- Kim, A. (2022). *Delivery Dancer Simulation*. Retrieved from http://ayoungkim.com/wp/3col/delivery-dancer-simulation-2022?ckattempt=1

- Crawford, K. (n.d.). *Kate Crawford — Research*. Retrieved from https://katecrawford.net/

- Crawford, K., & Joler, V. (2023). *Calculating Empires*. Ars Electronica. Retrieved from https://ars.electronica.art/starts-prize/de/calculating-empires/

- MIT Technology Review. (2019, October 22). *Ghost work and the future of employment*. Retrieved from https://www.technologyreview.com/

- McCarthy, L. (n.d.). *Someone*. Retrieved from https://get-lauren.net/SOMEONE

- Ridler, A. (n.d.). *Myriad (Tulips)*. Retrieved from https://annaridler.com/myriad-tulips

- Farocki, H. (1995). *Workers Leaving the Factory*. M+. Retrieved from https://www.mplus.org.hk/en/collection/objects/workers-leaving-the-factory-2020344/

- Mattes, E. & Mattes, F. (n.d.). *The Bots*. Retrieved from https://0100101110101101.org/the-bots/

- Paglen, T. (2020). *From "Apple" to "Anomaly": Pictures and Labels*. Retrieved from https://paglen.studio/2020/04/09/from-apple-to-anomaly-pictures-and-labels-selections-from-the-imagenet-dataset-for-object-recognition/

- Köchling, A., et al. (2025). Algorithmic control and work frustration in crowdwork. *Information & Management*. https://doi.org/10.1016/j.im.2025.104132

Thank you