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# Contestable AI: Designing for Human Autonomy

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UX Meetup Amsterdam  
21 February 2024

Kars Alfrink  
TU Delft  
[contestable.ai](https://contestable.ai)

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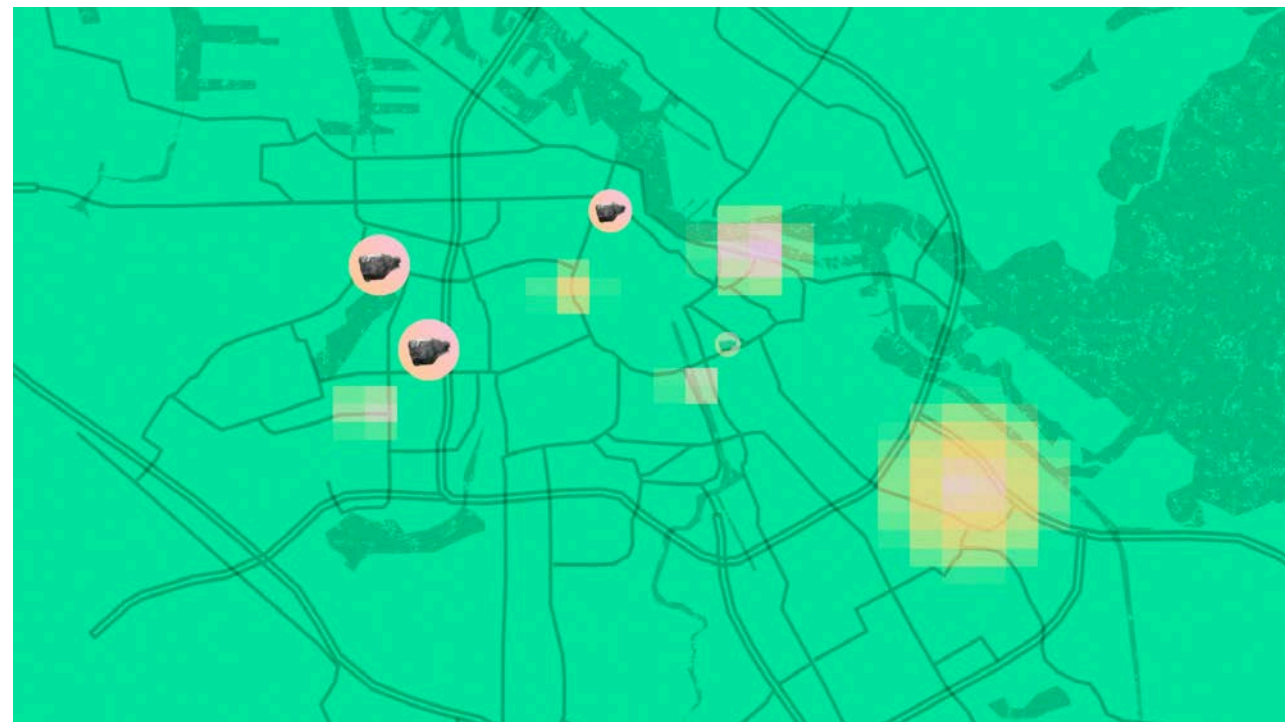
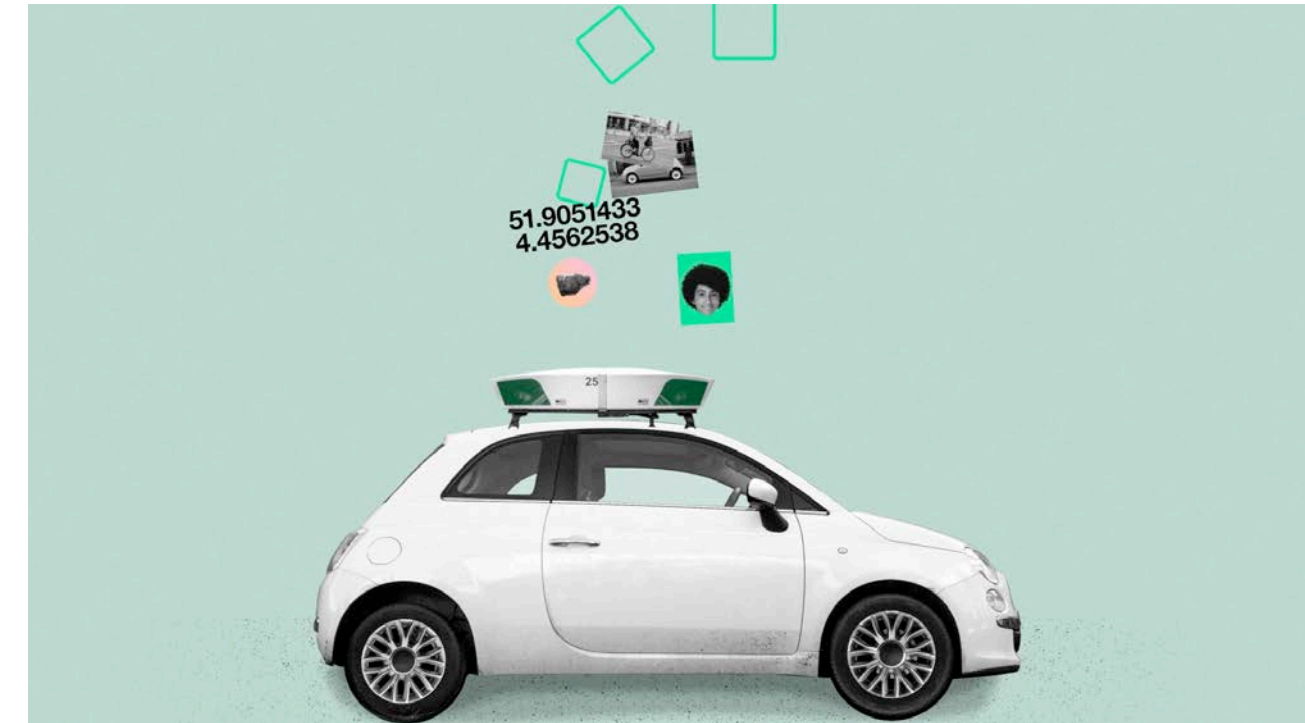
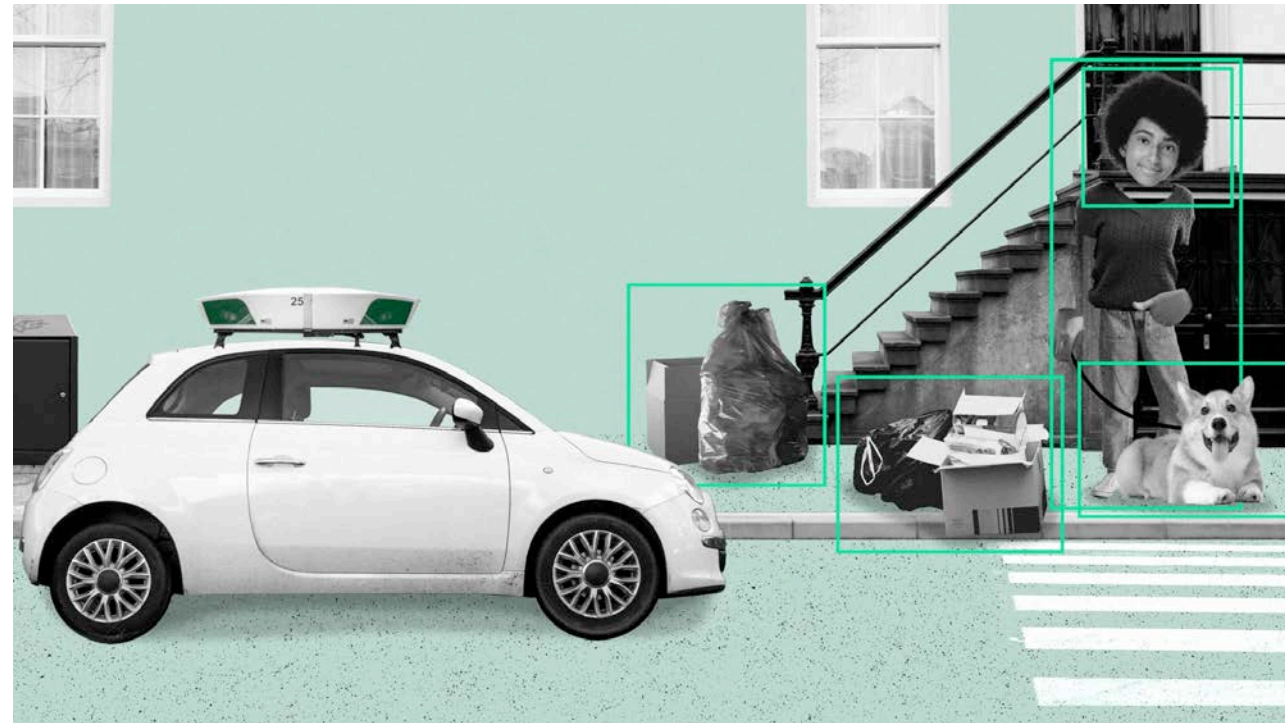
Ross Andru & Mike Esposito

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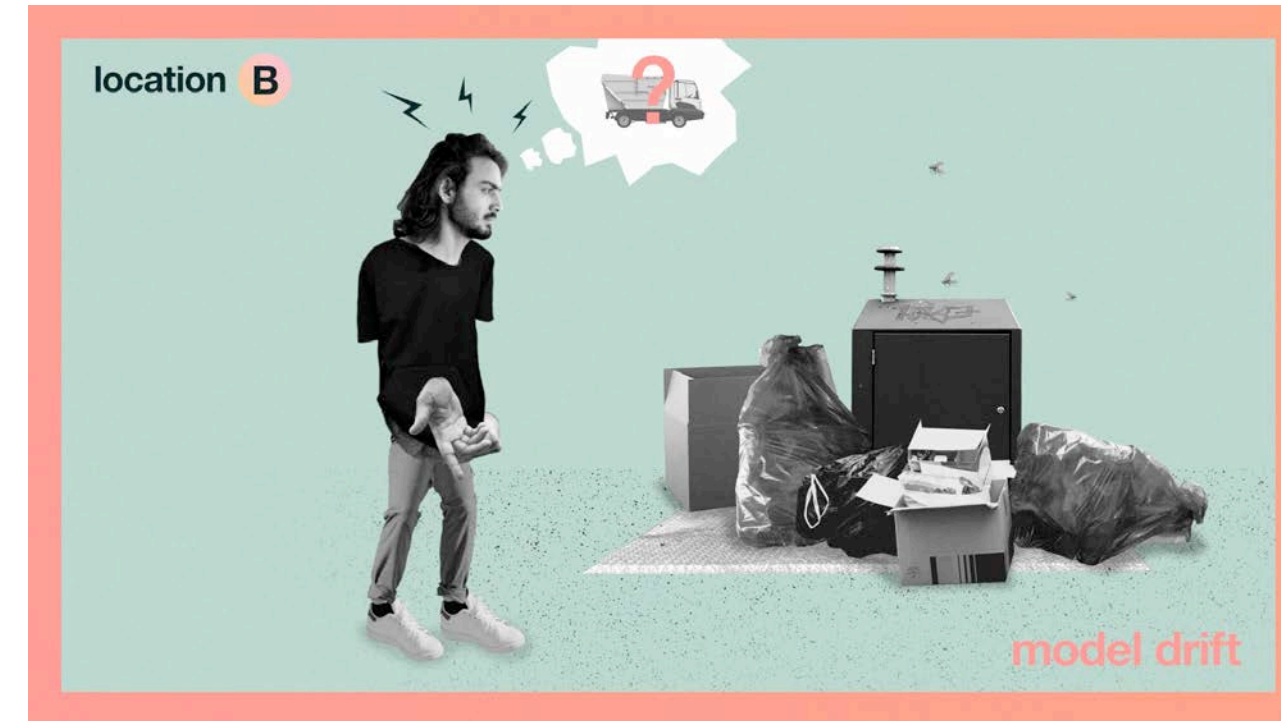
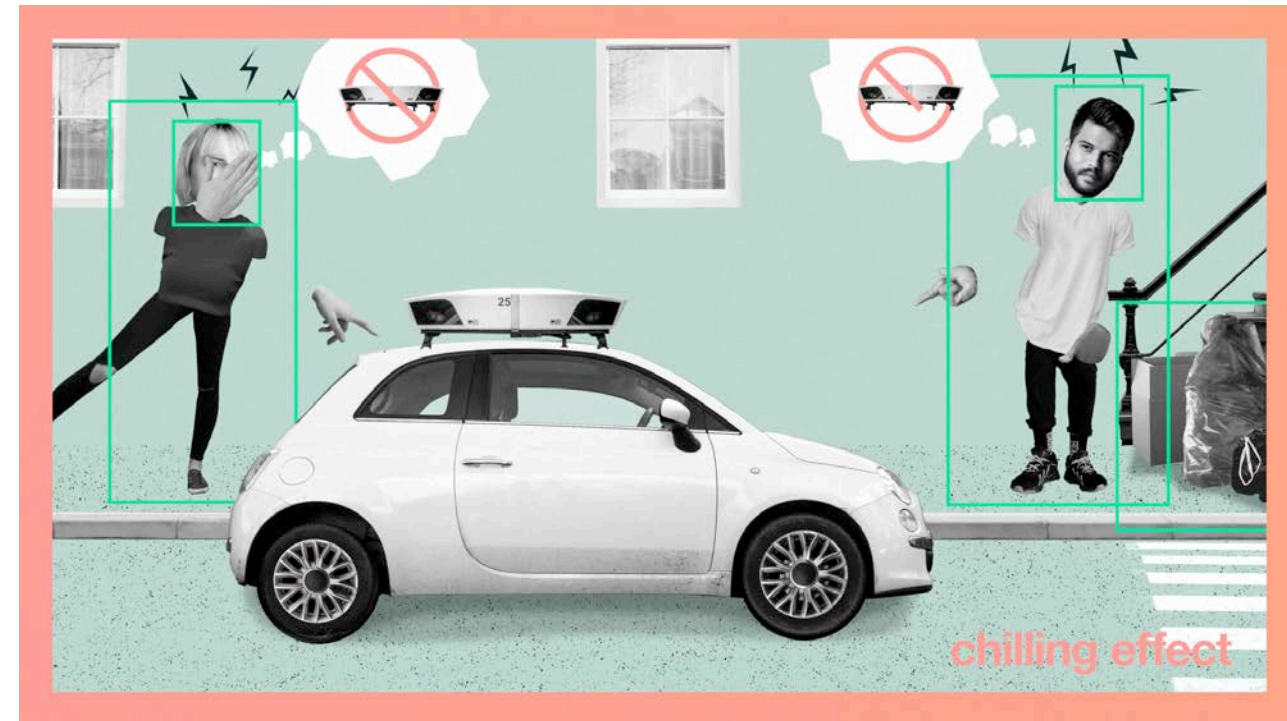
contestable camera cars

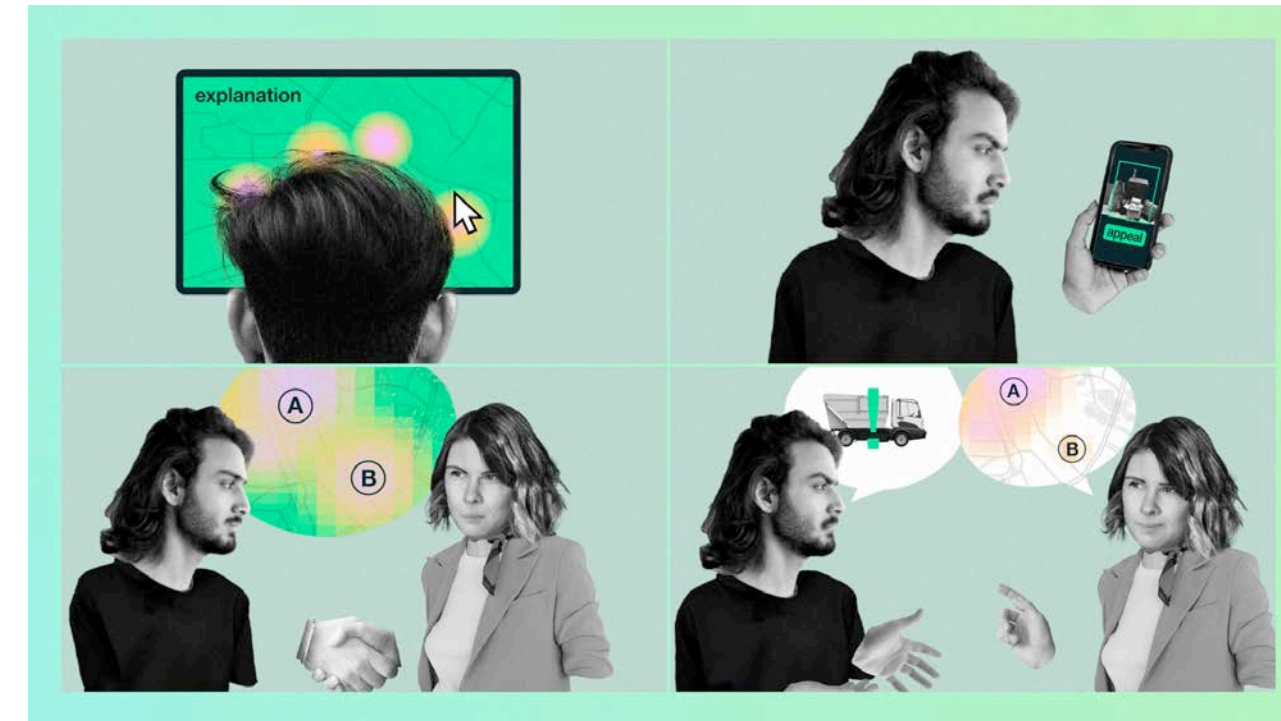
[edu.nl/g4bx8](https://doi.org/10.1145/3588888.3588888)

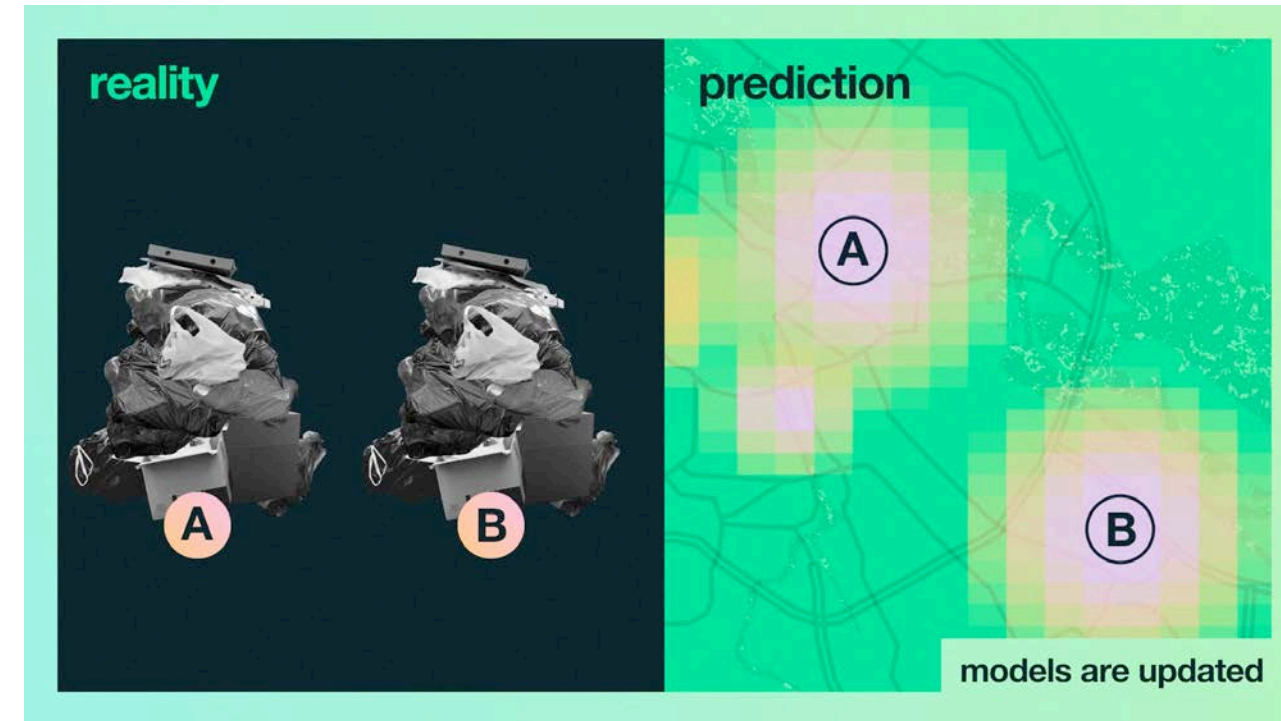
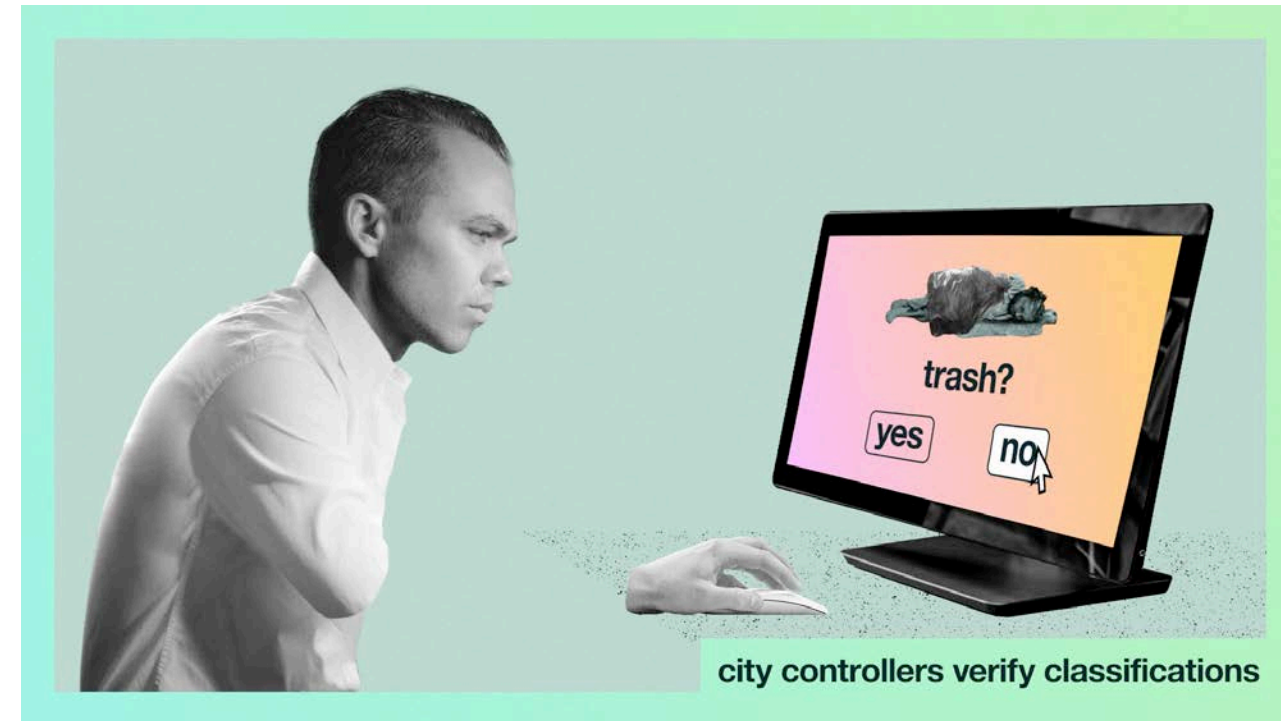
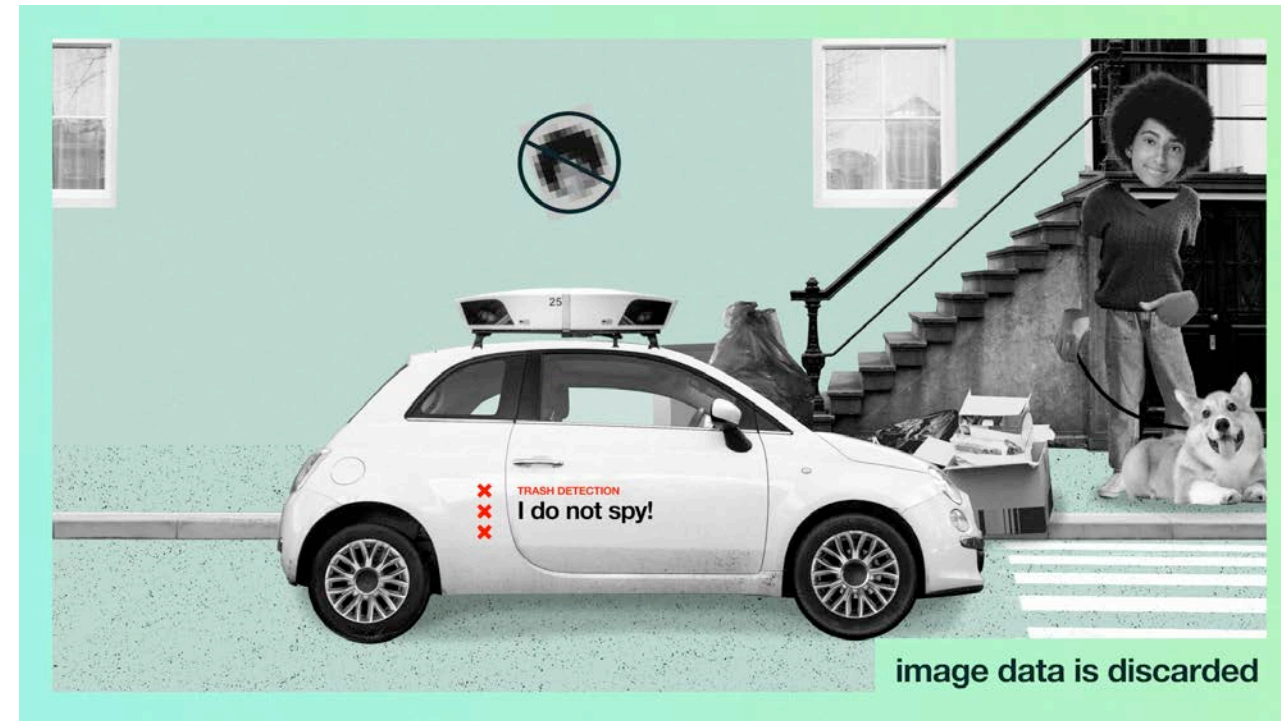


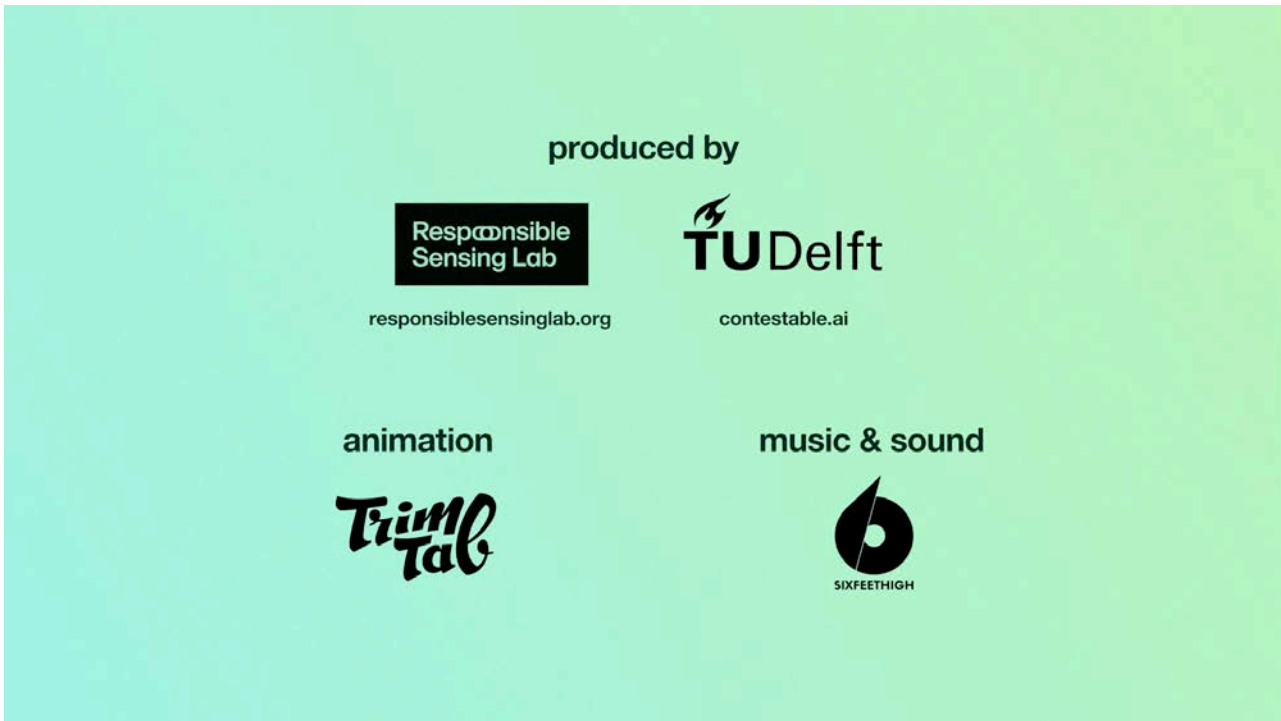
vehicle	destination
truck 03	→ location a
truck 12	→ location b
truck 17	...
truck 09	...
truck 02	...











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# Public AI

The use of feedback-adjusted **data analysis** and **processing** to augment, support or automate **policy execution** in the **public sector**.



Vattenfall



AMS Institute



Robin Utrecht/ANP



# Problem

**Algorithmic decision-making can harm people's basic human right to **autonomy**.**

## Rechtbank: overheid moet stoppen met fraudesysteem

**SyRI** Het computersysteem dat de overheid gebruikt om fraude te ontdekken, schendt de privacy. De rechtbank verbiedt het.

Camil Driessen • 5 februari 2020 • Leestijd 2 min

## Privacywaakhond laat zien hoe diep de problemen bij de Belastingdienst zijn

**Etnisch profileren** De werkwijze van de Belastingdienst was onrechtmatig, discriminerend en onbehoorlijk, oordeelt de Nederlandse privacywaakhond.

Lamyae Aharouay • 17 november 2021 • Leestijd 2 min

## Rotterdam schond privacy burgers met camera-auto's

**Autoriteit Persoonsgegevens** Rotterdam filmde met camera-auto's om te zien of burgers afstand hielden. Volgens privacywaakhond AP is dit onrechtmatig.

Andreas Kouwenhoven, Martin Kuiper • 17 november 2021 • Leestijd 2 min

'Pas op met deze visumaanvraag', waarschuwt het algoritme dat discriminatie in de hand werkt. Het ministerie negeert kritiek

**Visumbeleid** De papiermolen rond visumaanvragen detacheert Buitenlandse Zaken zo veel mogelijk naar buitenlandse bedrijven. Maar het risico op ongelijke behandeling door profilering van aanvragers blijft bestaan. Kritiek daarover van de interne privacy-toezichthouder, werd door het ministerie in de wind geslagen.

Ul • 23 april 2023 • Leestijd 8 minuten

## DUO stopt met omstreden algoritme dat vooral studenten met migratie-achtergrond als fraudeur bestempelde

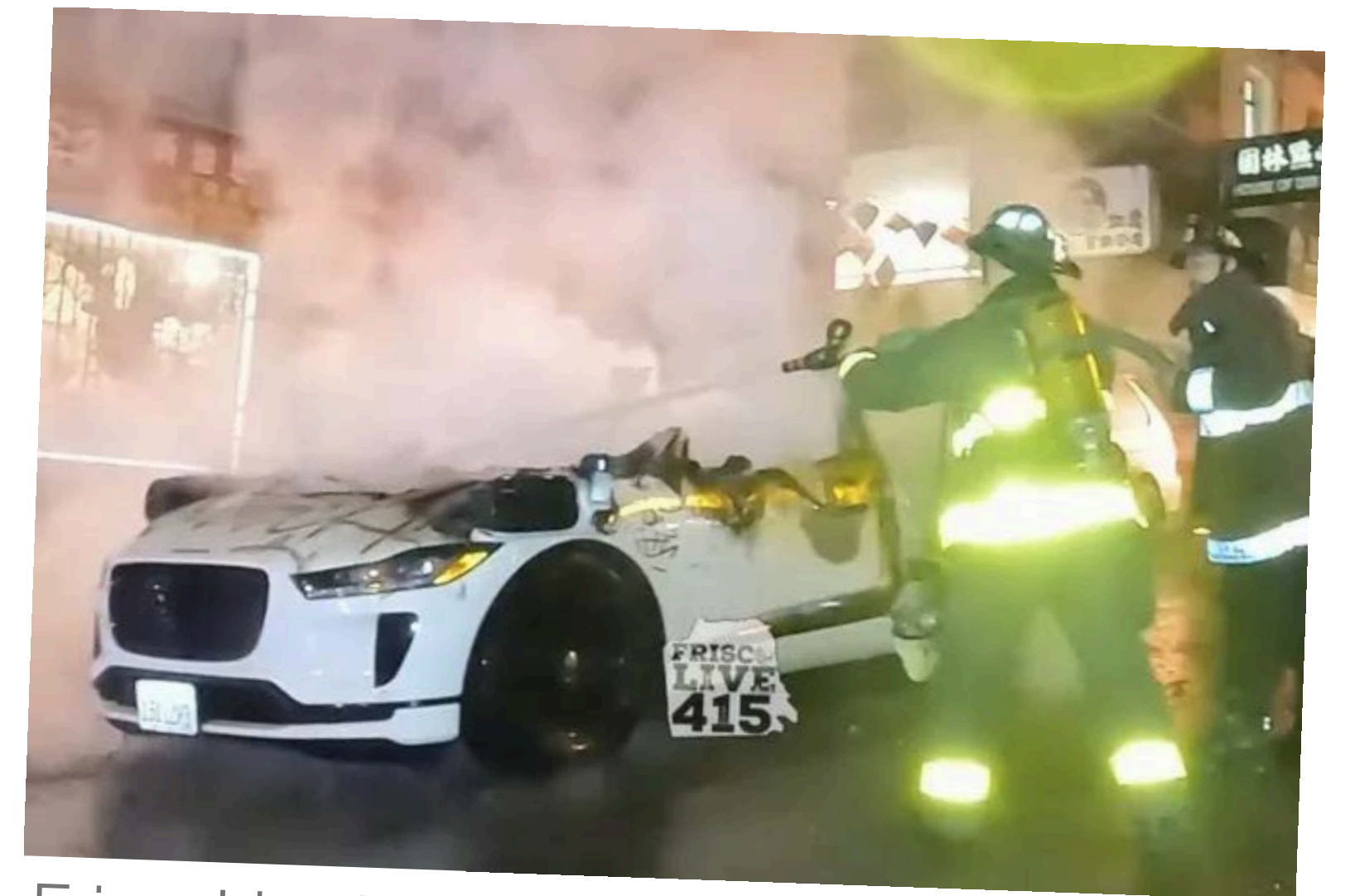
**Fraude** Onderwijsminister Robbert Dijkgraaf roept op tot een grondig onderzoek naar de fraudecontrole van DUO. In plaats van het algoritme moet er tijdelijk gebruik worden gemaakt van een willekeurige steekproef.

# Contestation

1. Opposing an action
  2. Competing for power
- Contested versus contestable.



Chris Mcgrath/Getty Images



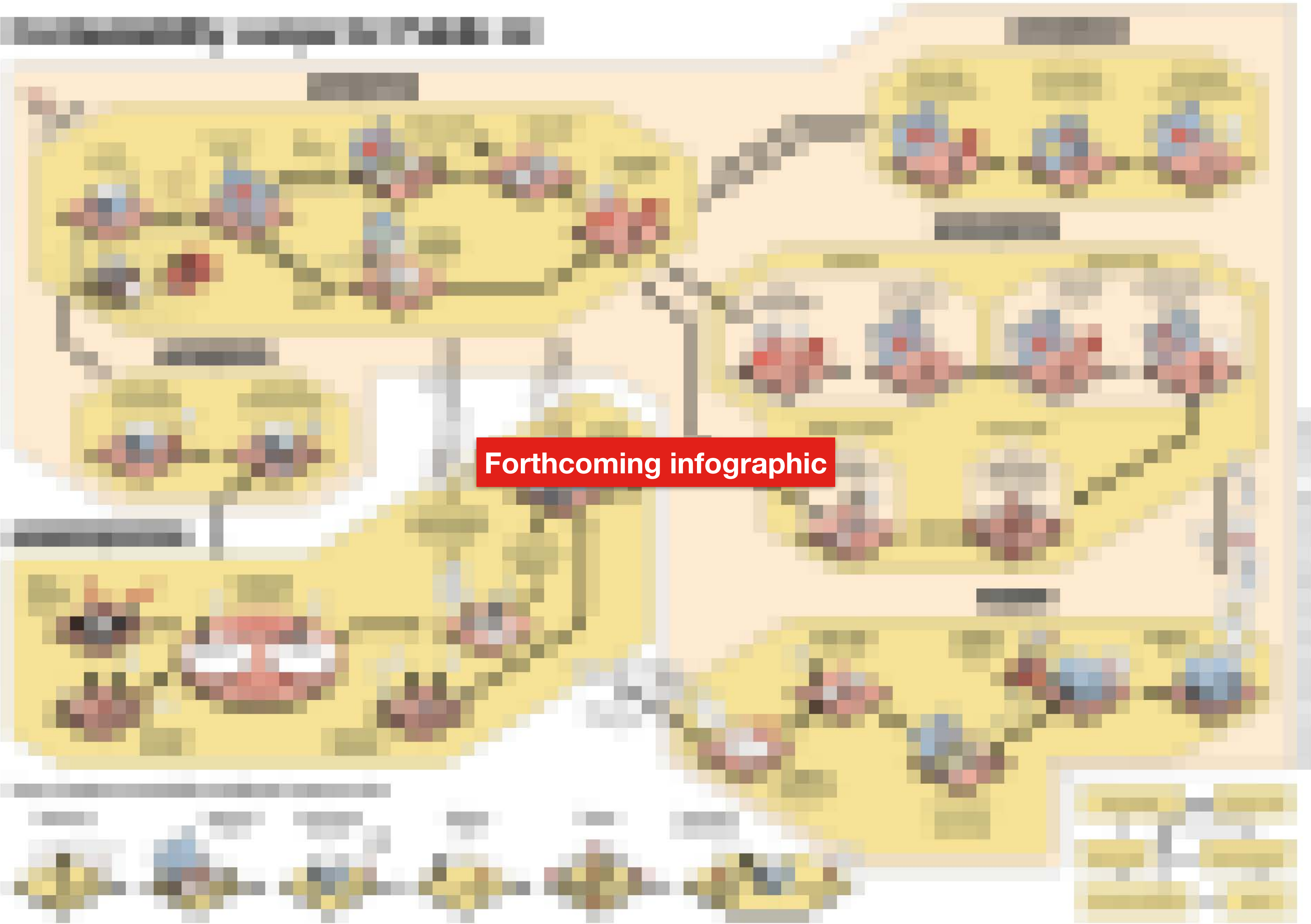
FriscoLive415

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# Contestable AI

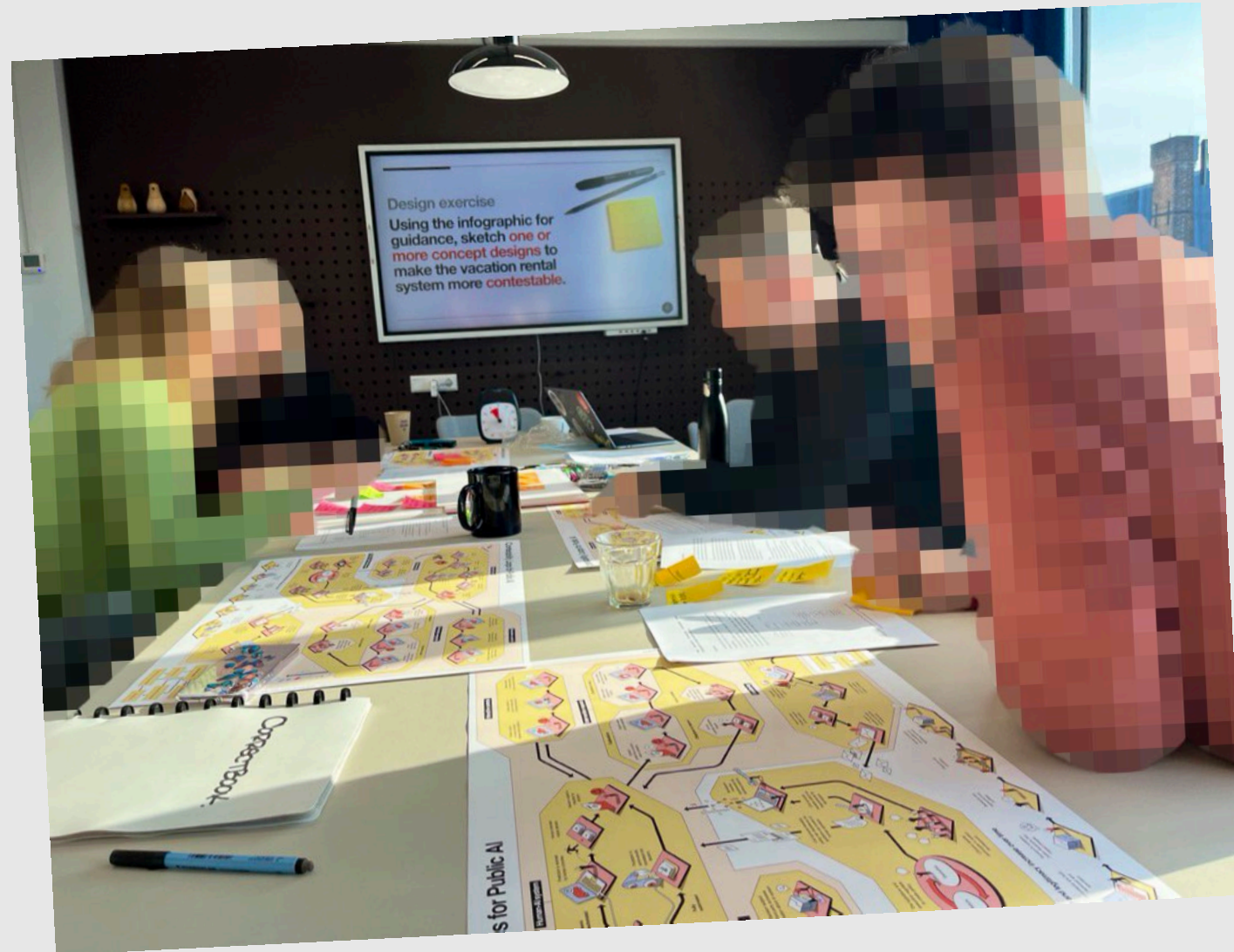
AI that is open and responsive to **dispute**, throughout the **system lifecycle**, establishing a **dialogical relationship** between decision subjects and system operators.



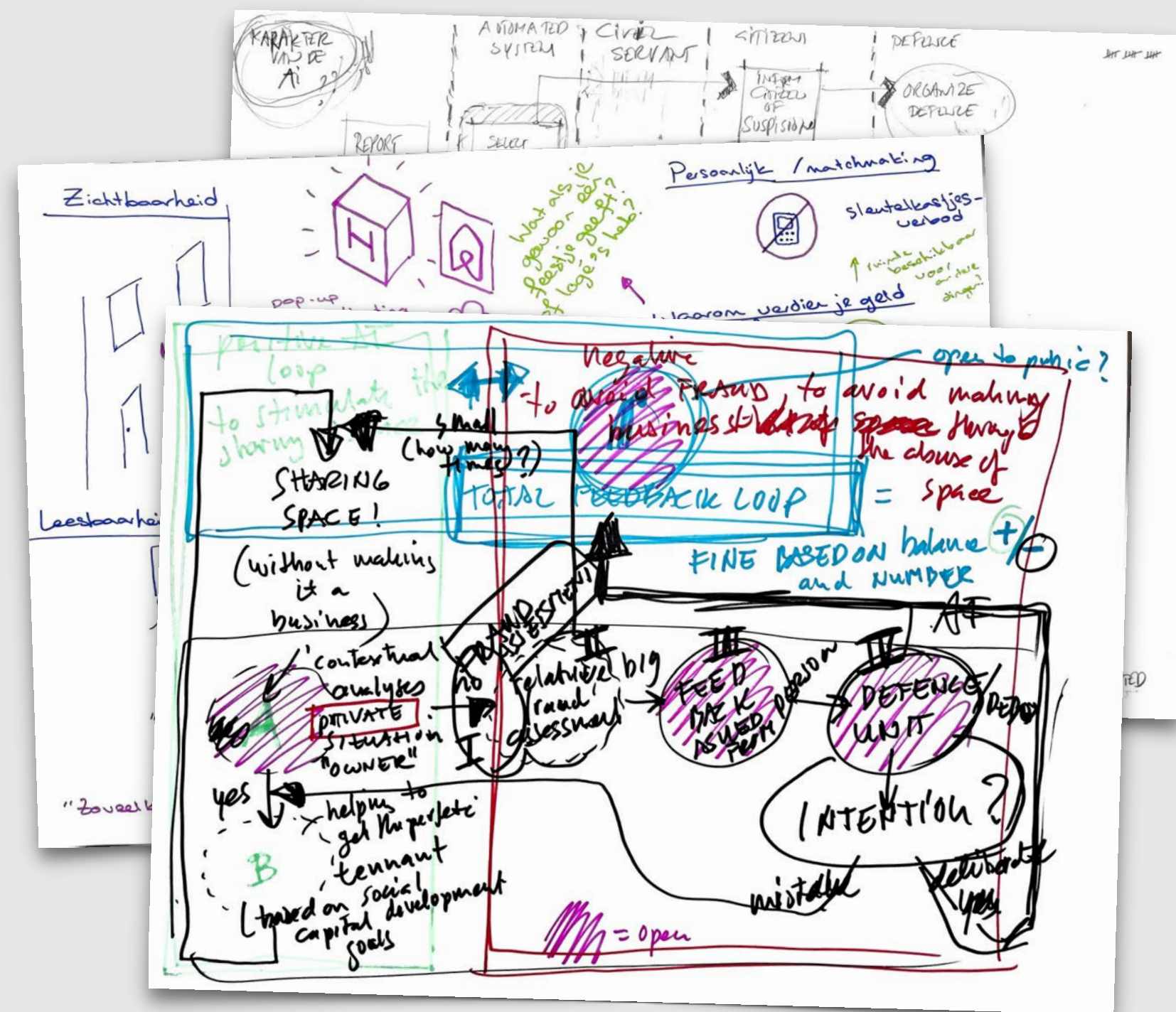


Forthcoming infographic

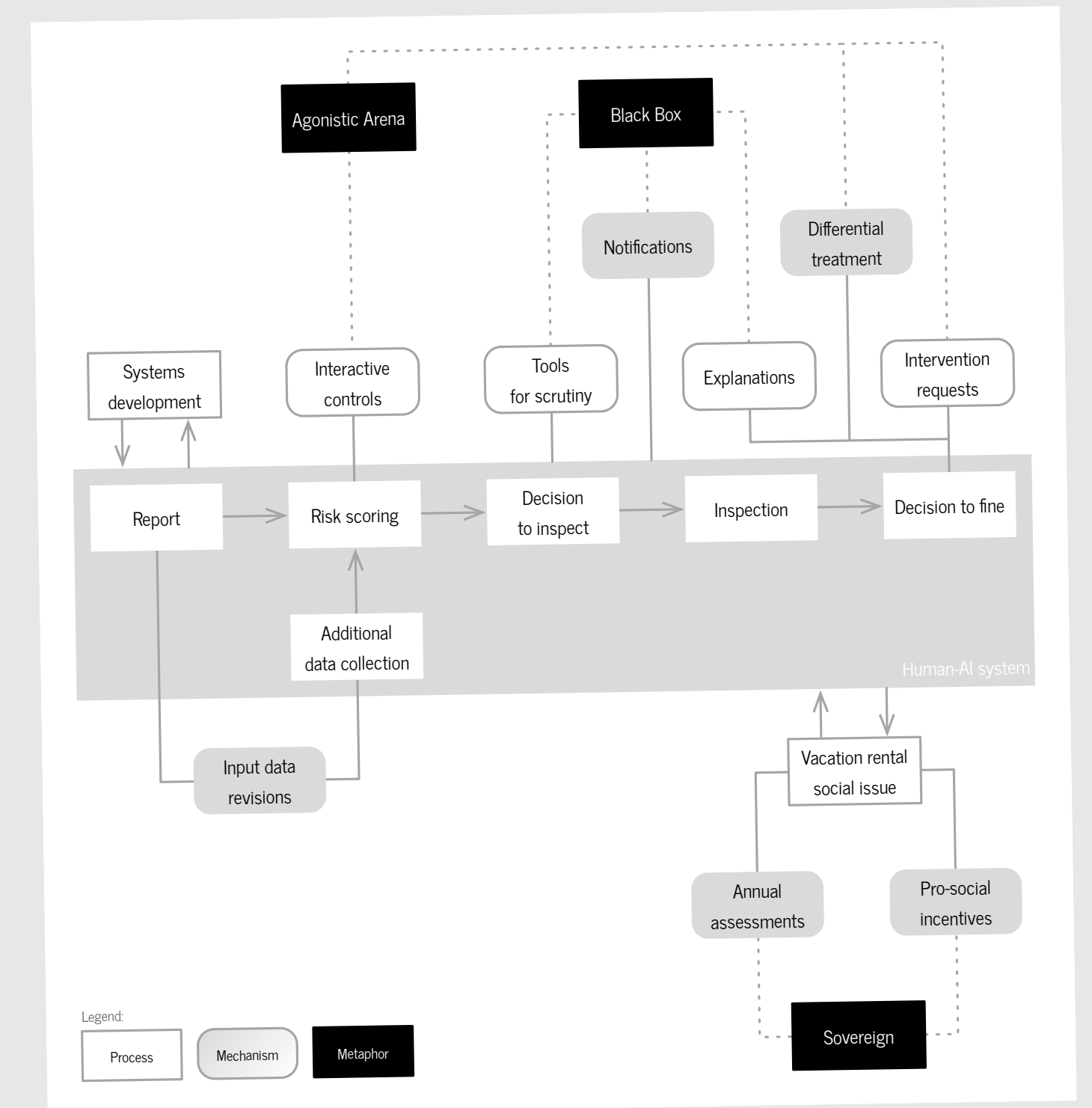
# Evaluating the Arena metaphor



Data Generation: Design Workshops

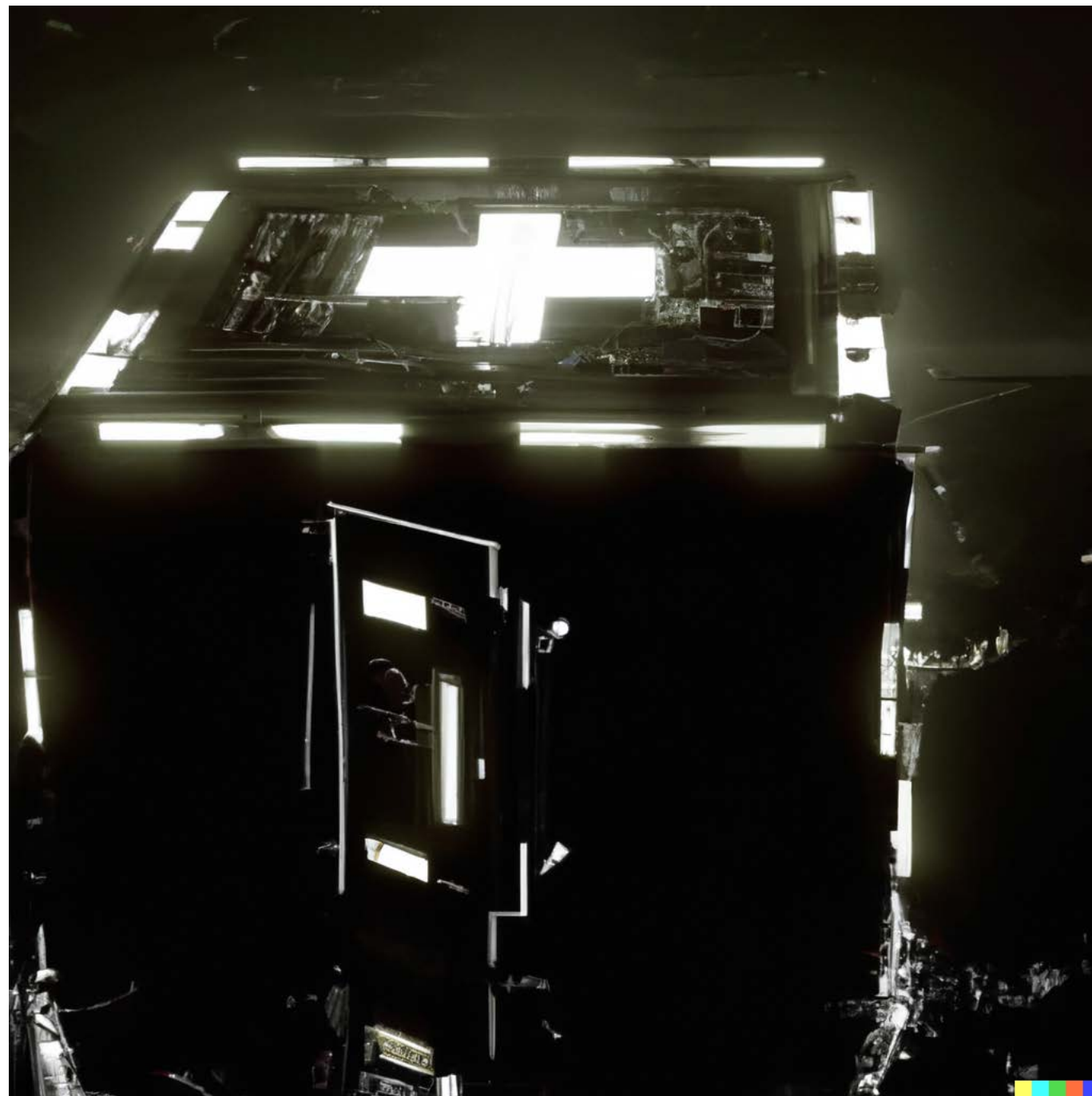


Data: Concept Design Sketches

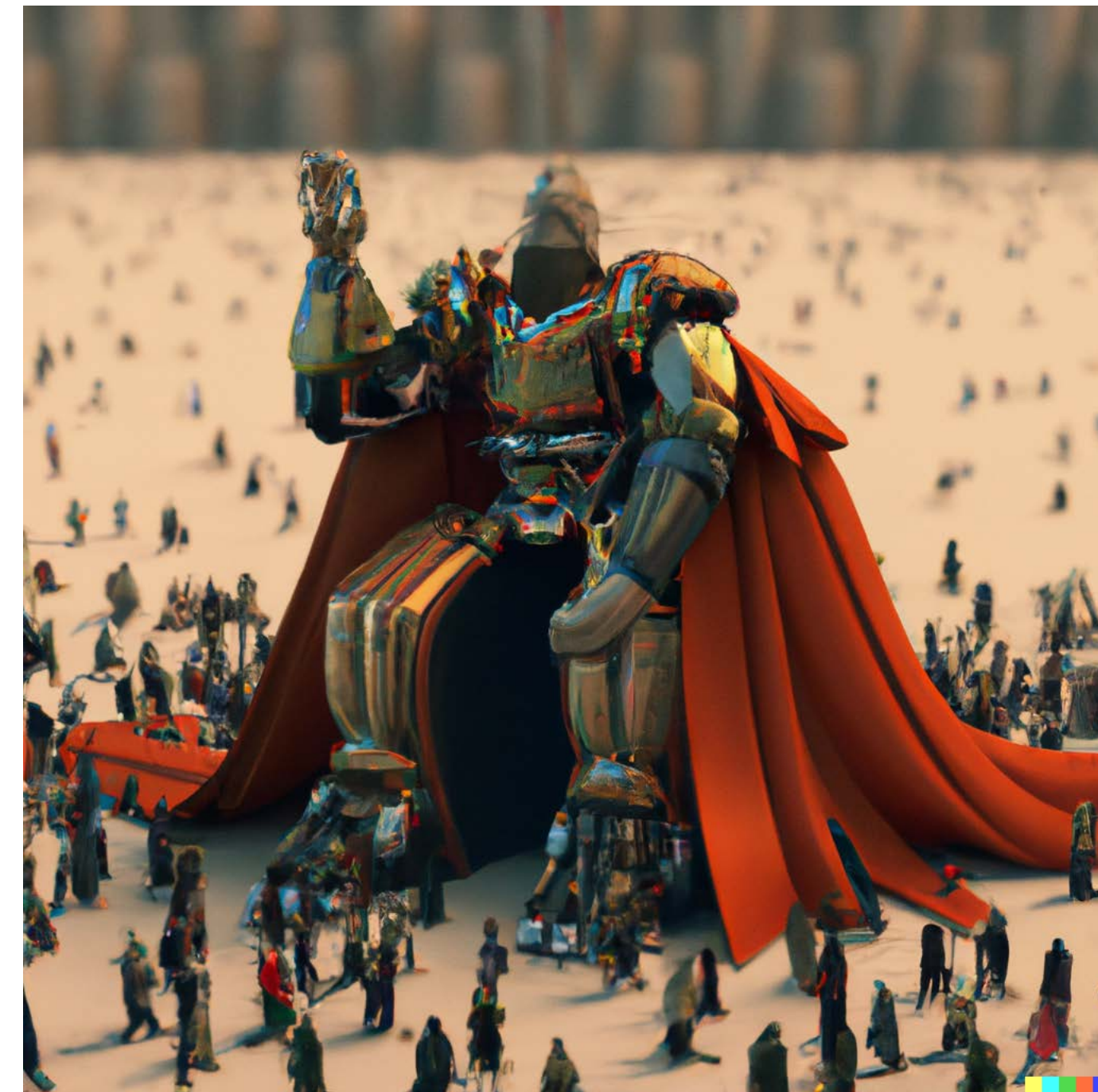


Analysis: Mechanisms & Metaphors

# Competing metaphors



AI as Black BOX (DALL-E 2)



AI as Sovereign (DALL-E 2)

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# Takeaways

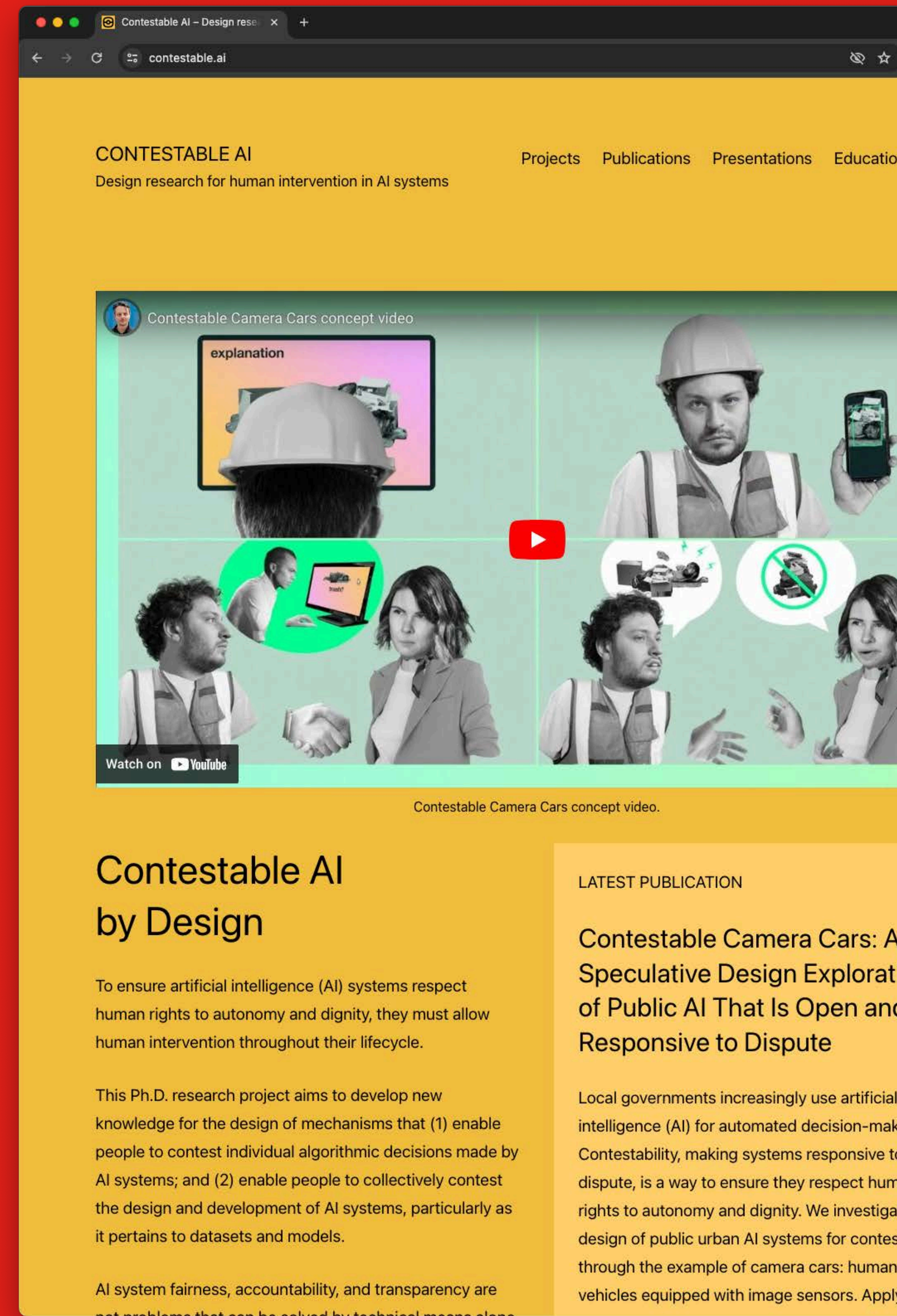
- 1. Contestability is a quality that ensures AI respects **autonomy**.**
- 2. Design for contestability means creating **human control** loops.**
- 3. The Arena metaphor prioritizes **debate, fallibility, and revisability**.**

# Thank you! Questions?

**Contestable AI: Designing for Human Autonomy**

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contestable.ai**



The screenshot shows a web browser displaying the website [contestable.ai](https://contestable.ai). The page has a yellow background and a navigation menu with links for "Projects", "Publications", "Presentations", and "Education". The main content area features a video player for "Contestable Camera Cars concept video". The video player includes a play button, a "Watch on YouTube" button, and a video thumbnail showing a person in a hard hat and a person in a suit. Below the video player, there is a section titled "Contestable AI by Design" with a sub-section "LATEST PUBLICATION" containing the text "Contestable Camera Cars: A Speculative Design Exploration of Public AI That Is Open and Responsive to Dispute".

Contestable AI  
Design research for human intervention in AI systems

Projects Publications Presentations Education

Contestable Camera Cars concept video

explanation

Watch on YouTube

Contestable Camera Cars concept video.

## Contestable AI by Design

To ensure artificial intelligence (AI) systems respect human rights to autonomy and dignity, they must allow human intervention throughout their lifecycle.

This Ph.D. research project aims to develop new knowledge for the design of mechanisms that (1) enable people to contest individual algorithmic decisions made by AI systems; and (2) enable people to collectively contest the design and development of AI systems, particularly as it pertains to datasets and models.

AI system fairness, accountability, and transparency are not problems that can be solved by technical means alone.

### LATEST PUBLICATION

Contestable Camera Cars: A Speculative Design Exploration of Public AI That Is Open and Responsive to Dispute

Local governments increasingly use artificial intelligence (AI) for automated decision-making. Contestability, making systems responsive to dispute, is a way to ensure they respect human rights to autonomy and dignity. We investigate the design of public urban AI systems for contestability through the example of camera cars: human vehicles equipped with image sensors. Apply