

# Uncovering discrimination in public fraud detection systems

*Willy Tadema*

*Winterkongress der Digitalen Gesellschaft, 2025*

What if...

Introducing myself:

- **Willy Tadema**
- **AI Governance & AI Ethics Lead** at Dutch National ICT Guild, Ministry of the Interior and Kingdom Relations
- **Standardization expert** in CEN-CENELEC's Joint Technical Committee on AI
- **Member of the Ethics Committee Data & Technology** in my home town Groningen
- **Speaking today in a personal capacity**
- Happy to connect on LinkedIn!





## Dutch scandal serves as a warning for Europe over risks of using algorithms

The Dutch tax authority ruined thousands of lives after using an algorithm to spot suspected benefits fraud — and critics say there is little stopping it from happening again.

MARCH 29, 2022 6:14 PM CET  
BY MELISSA HEIKKILÄ

## NL#TIMES

TUESDAY, 12 NOVEMBER 2024 - 07:00

### Government to refund over 10,000 students over discriminatory DUO fraud checks

In a landmark decision, the Dutch government has pledged to refund over 10,000 students who were unjustly flagged for student finance fraud by an algorithm developed by the Education Executive Agency (DUO).

## Government in Netherlands Resigns After Benefit Scandal

A parliamentary report concluded that tax authorities unfairly targeted poor families over child care benefits. Prime Minister Mark Rutte and his entire cabinet stepped down.

# The Guardian

Artificial intelligence  
(AI)

## Welfare surveillance system violates human rights, Dutch court rules

Government told to halt use of AI to detect fraud in decision hailed by privacy campaigners

BY MATT BURGESS, EVALINE SCHOT, AND GABRIEL GEIGER SECURITY MAR 6, 2023 7:00 AM

## This Algorithm Could Ruin Your Life

A system used by the Dutch city of Rotterdam attempted to rank people based on their risk of fraud. The results were troubling.

Lighthouse Reports @LHreports

Serious impact in Sweden where the welfare agency has been called before parliament to answer questions over discriminatory algorithms used to profile benefits recipients

Post vertalen



Efter SvD:s granskning – MP kräver AI-garantier

Van svd.se

9:38 a.m. · 30 nov. 2024 · 986 Weergaven

The Guardian

The innocent have paid a high price for the Post Office scandal. The guilty have not

Marina Hyde



It was the word of hundreds of Post Office workers against a faulty computer system. Guess who was believed?



November 12, 2024

## Denmark: AI-powered welfare system fuels mass surveillance and risks discriminating against marginalized groups – report

voxeurop  
English

## Serbia, a laboratory for algorithmic discrimination

The use of algorithms to optimise the allocation of social benefits is commonplace in Europe. In Serbia, data collected from the population is used to target certain groups, including the Roma. But voices are emerging in civil society to denounce this system.

Published on 15 February 2023 at 15:54

Federico Caruso - Osservatorio Balcani e Caucaso Transeuropa (Trento)

WIRED

MORGAN MEAKER

BUSINESS OCT 16, 2024 9:37 AM

## Algorithms Policed Welfare Systems For Years. Now They're Under Fire for Bias

Human rights groups have launched a new legal challenge against the use of algorithms to detect error and fraud in France's welfare system, amid claims that single mothers are disproportionately affected.

BBC

## Robodebt: Illegal Australian welfare hunt drove people to despair

7 July 2023

Frances Mao  
BBC News





Recurrent patterns:

- Political push for a hardline approach
- Emphasis on cost efficiency
- Key decisions made by tech teams or consultants
- Lack of stakeholder engagement
- Ethical, design, and implementation blind spots
- AI mystification blocking critical reflection
- Affected individuals lacking information and recourse



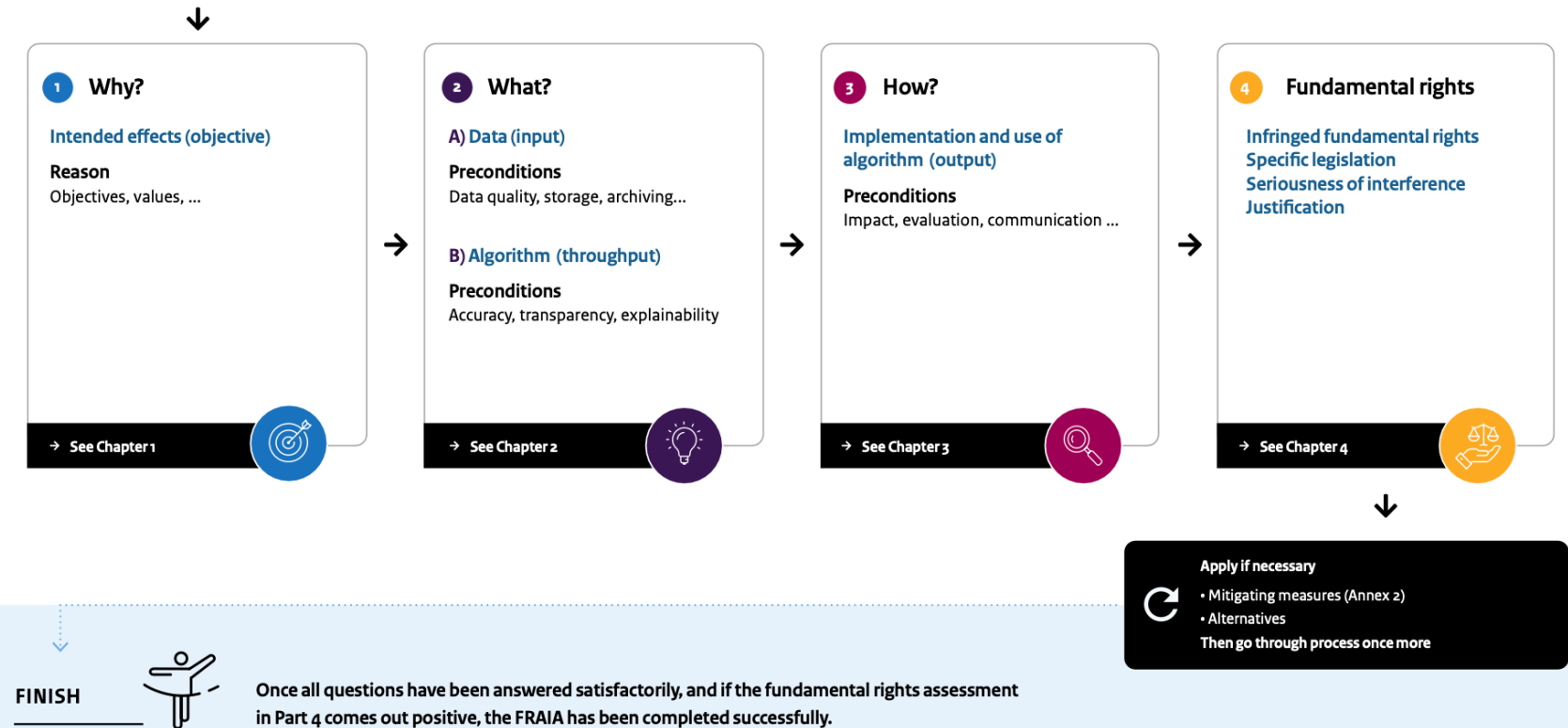


## Impact Assessment Fundamental rights and algorithms



### FRAIA flow chart

START



# The Algorithm Register of the Dutch government

Find one of the 773 algorithms

Search by word, theme or organisation

Search

### Choose a organisation type

<a href="#">Municipality</a>	517
<a href="#">Organizational unit</a>	52
<a href="#">Agency</a>	46
<a href="#">Independent administrative body</a>	43
<a href="#">Province</a>	31
<a href="#">Ministry</a>	28
<a href="#">Regional cooperation body</a>	24

Show more

### Choose a publicationcategory

<a href="#">Other algorithms</a>	378
<a href="#">Impactful algorithms</a>	370
<a href="#">High-Risk AI-system</a>	27

### Choose a impact assessment

<a href="#">Geen</a>	545
<a href="#">Data Protection Impact Assessment (DPIA)</a>	174
<a href="#">Overig</a>	95
<a href="#">Impact Assessment Mensenrechten Algoritmes (IAMA)</a>	18

775 results found

< 1 2 3 4 ... 78 >

Download all algorithms

#### Anonymise

##### Municipality of Veenendaal

This algorithm helps employees of the Municipality of Veenendaal identify and anonymise privacy-sensitive information in documents.

[Read more](#)

Last change on 24th of February 2025, at 13:57 (CET) | Publication Standard 1.0

#### Publication category

Other algorithms

#### Impact assessment

DPIA

#### Status

In use

#### Virtual municipality assistant Gem

##### Municipality of West Betuwe

The virtual assistant Gem is a digital help on West Betuwe's website for answering civic and business questions. Using the chat button on our websites, you can talk to Gem.

[Read more](#)

Last change on 20th of February 2025, at 13:29 (CET) | Publication Standard 1.0

#### Publication category

Other algorithms

#### Impact assessment

Field not filled in.

#### Status

Out of use

# The 5 ★ model for transparent algorithms

★ **Published** Publish online what the algorithm should do

★ ★ **Explained** Describe what has been done to ensure that the algorithm does what it is supposed to do

★ ★ ★ **Verified** Share results showing that the algorithm does what it is supposed to do

★ ★ ★ ★ **Testable** Make it possible to test the algorithm

★ ★ ★ ★ ★ **Open** Open up the algorithm completely

Intermezzo





Public standard  
profiling algorithms

# Public standard profiling algorithms

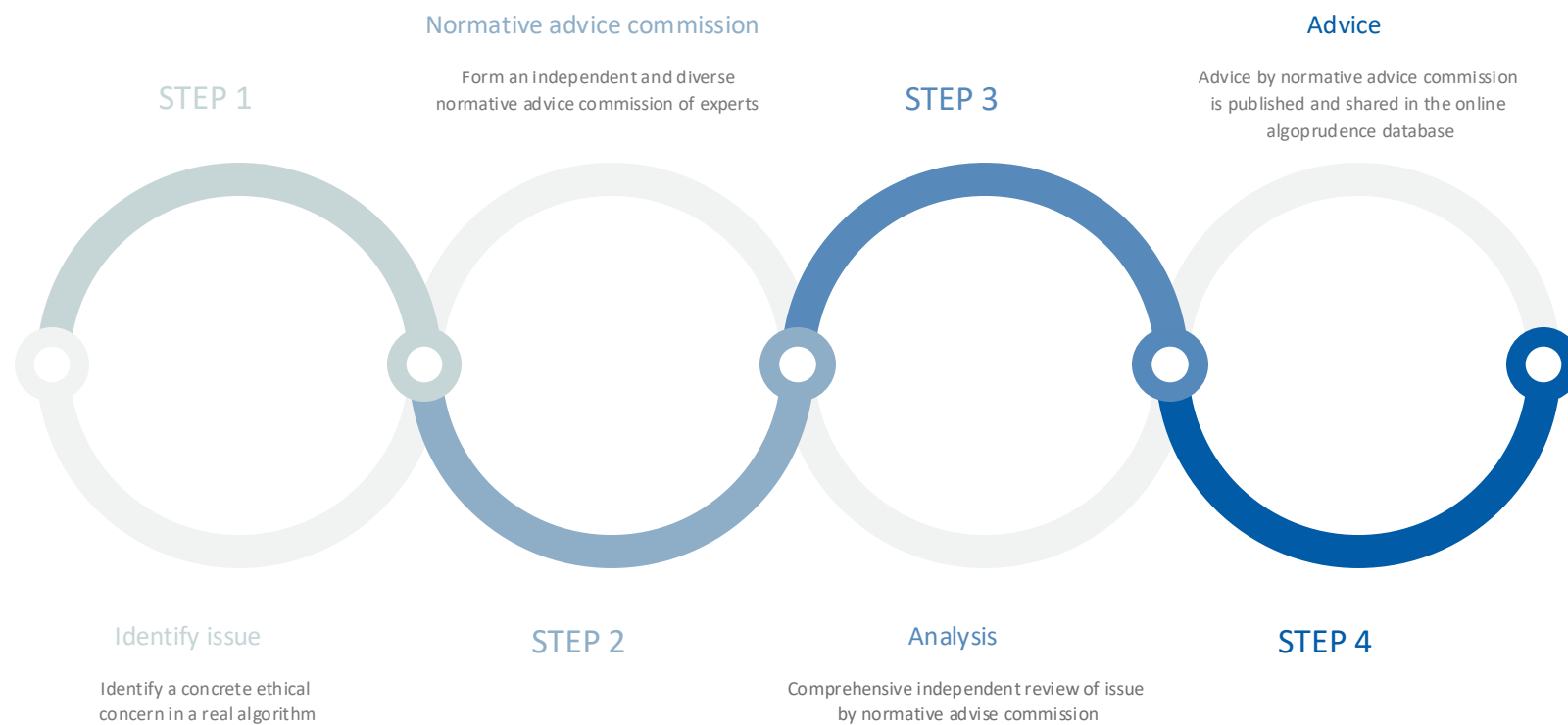
Responsible profiling algorithms through

- **quantitative safe guards**,
- **qualitative safe guards** and
- **organizational control measures**

based on Dutch government use cases.



Algo prudence: Jurisprudence for algorithms



# Example of **algotprudence**

Case: risk profiling for social welfare re-examination

## Eligible criteria

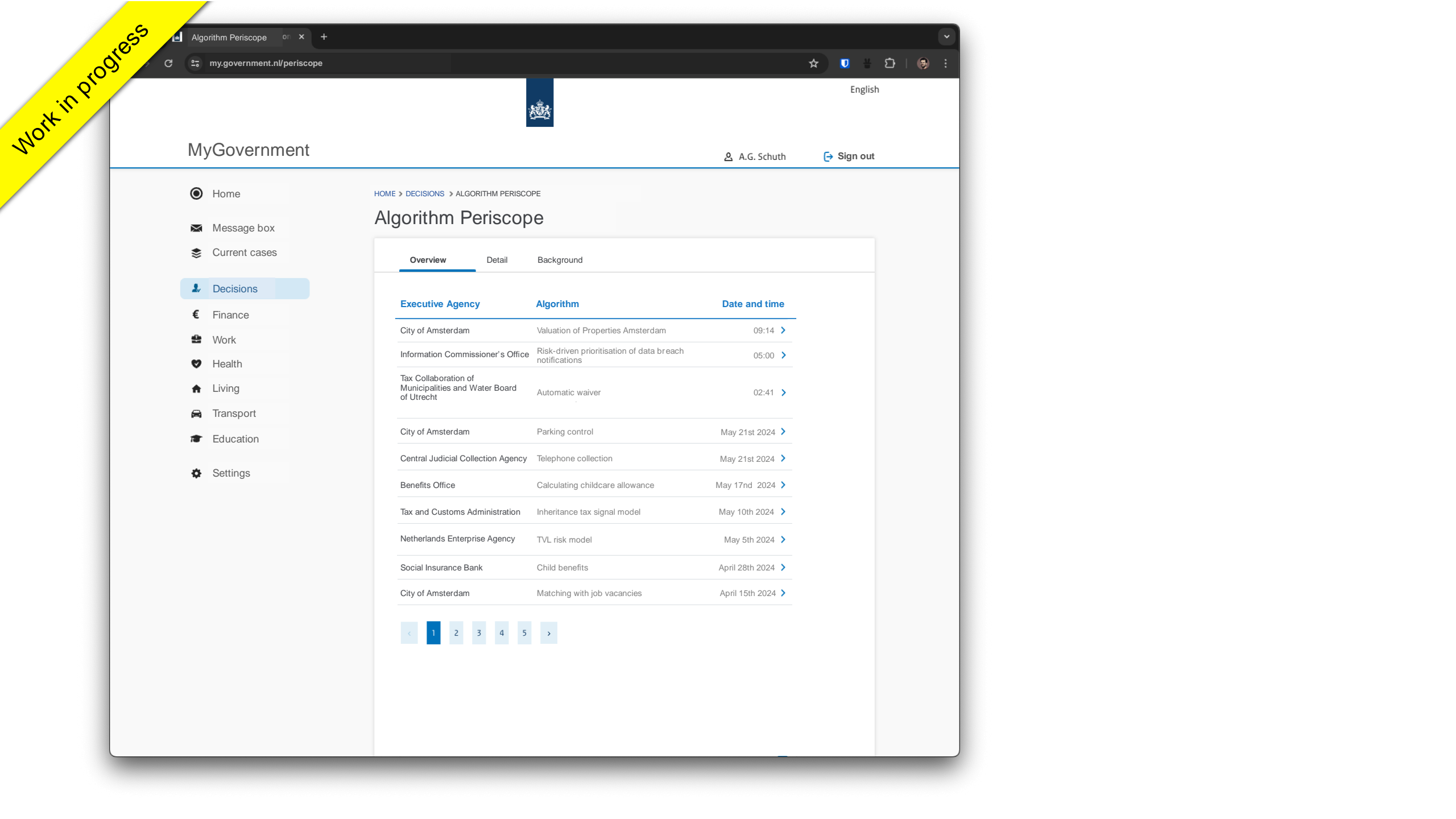
Age		
No show at appointment with municipality		
Reminders for providing information		
Participation in trajectory to work (training, workplace, social duty)		 
Type of living (cohabitation, living together)		
Cost sharing		

## Legend

	Unlawful		Subject to change
	Proxy discrimination		Subjective
	Connection with aim pursued		Unclear definition
	No connection with aim pursued		Manageable risks

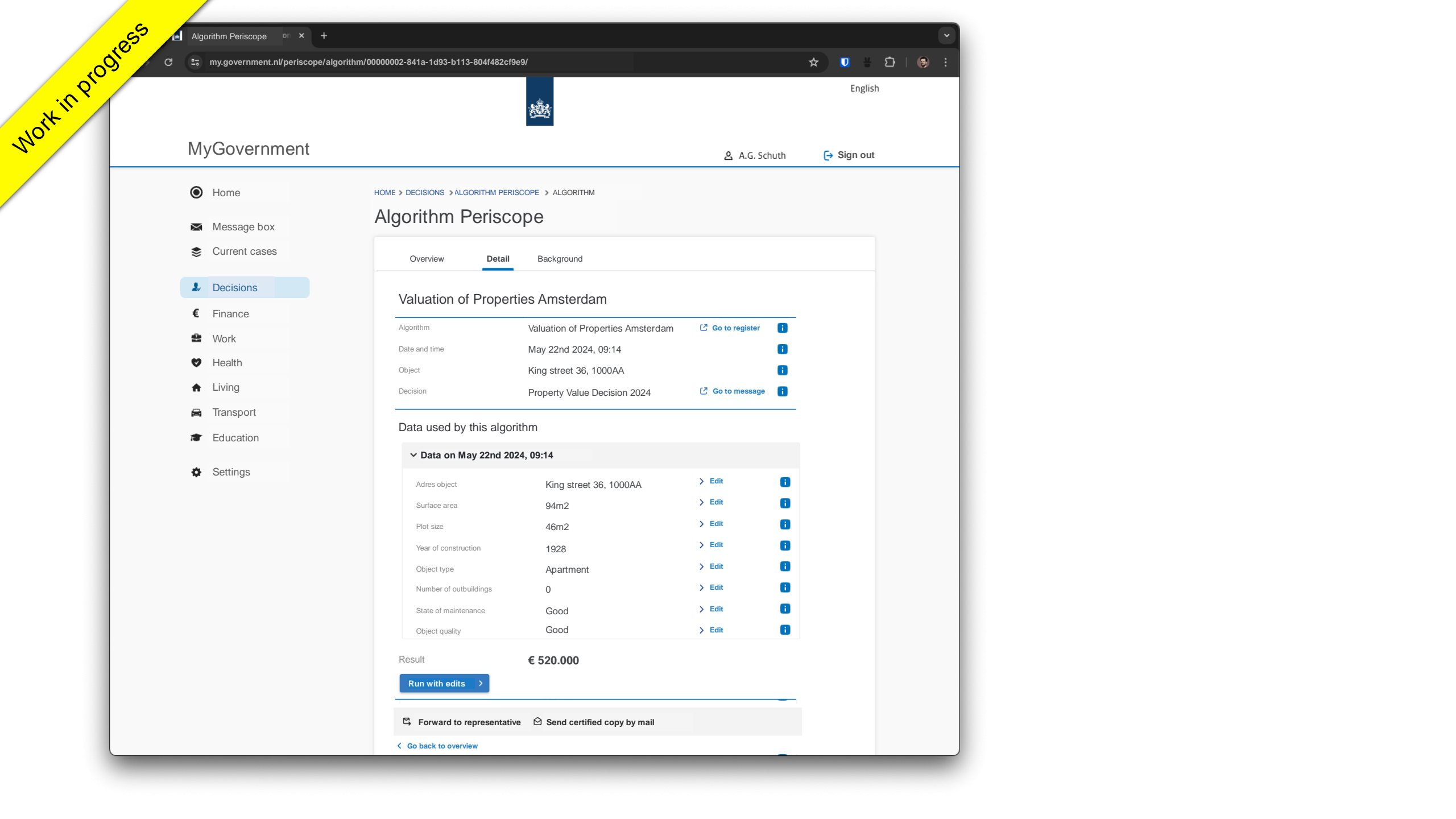
## Ineligible criteria

ZIP code, city district	
Sex, gender	
Reason for appointment with municipality (annual meeting, intake)	
Type of contact (mail, phone, text, post)	
Literacy rate	
ADHD	
Mental health services	
Number of children	
Sectoral (work) experience (hospitality, construction, logistics)	
Assertiveness	 
Professional appearance	



Algorithm Periscope		
Overview		
Executive Agency	Algorithm	Date and time
City of Amsterdam	Valuation of Properties Amsterdam	09:14
Information Commissioner's Office	Risk-driven prioritisation of data breach notifications	05:00
Tax Collaboration of Municipalities and Water Board of Utrecht	Automatic waiver	02:41
City of Amsterdam	Parking control	May 21st 2024
Central Judicial Collection Agency	Telephone collection	May 21st 2024
Benefits Office	Calculating childcare allowance	May 17nd 2024
Tax and Customs Administration	Inheritance tax signal model	May 10th 2024
Netherlands Enterprise Agency	TVL risk model	May 5th 2024
Social Insurance Bank	Child benefits	April 28th 2024
City of Amsterdam	Matching with job vacancies	April 15th 2024





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## Algorithm Periscope

Overview Detail Background

### Valuation of Properties Amsterdam

Algorithm	Valuation of Properties Amsterdam	<a href="#">Go to register</a>	<a href="#">i</a>
Date and time	May 22nd 2024, 09:14		<a href="#">i</a>
Object	King street 36, 1000AA		<a href="#">i</a>
Decision	Property Value Decision 2024	<a href="#">Go to message</a>	<a href="#">i</a>

### Data used by this algorithm

▼ Data on May 22nd 2024, 09:14

Adres object	King street 36, 1000AA	<a href="#">Edit</a>	<a href="#">i</a>
Surface area	94m2	<a href="#">Edit</a>	<a href="#">i</a>
Plot size	46m2	<a href="#">Edit</a>	<a href="#">i</a>
Year of construction	1928	<a href="#">Edit</a>	<a href="#">i</a>
Object type	Apartment	<a href="#">Edit</a>	<a href="#">i</a>
Number of outbuildings	0	<a href="#">Edit</a>	<a href="#">i</a>
State of maintenance	Good	<a href="#">Edit</a>	<a href="#">i</a>
Object quality	Good	<a href="#">Edit</a>	<a href="#">i</a>

Result € 520.000

Run with edits

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- The [Algorithm Register](#) of the Dutch Government
- [Fundamental Rights and Algorithm Impact Assessment](#) (FRAIA)
- The [5-star model](#) for transparent algorithms
- [Public standard profiling algorithms](#)
- [Algoprudence database](#)
- European harmonized AI standards for the AI Act ([happy to tell you all about it!](#))



Thank you for your attention.

Happy to connect! [linkedin.com/in/willytadema](https://www.linkedin.com/in/willytadema)

My slides are available for download:

