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

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.

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).

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?

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.

AMNESTY INTERNATIONAL

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)

BBC

Robodebt: Illegal Australian welfare hunt drove people to despair

7 July 2023

Frances Mao
BBC News

- Political push for harde aanpak
- Focus op kostenefficientie
- Framing als technisch project
- Geen aandacht voor bredere socio-technische context
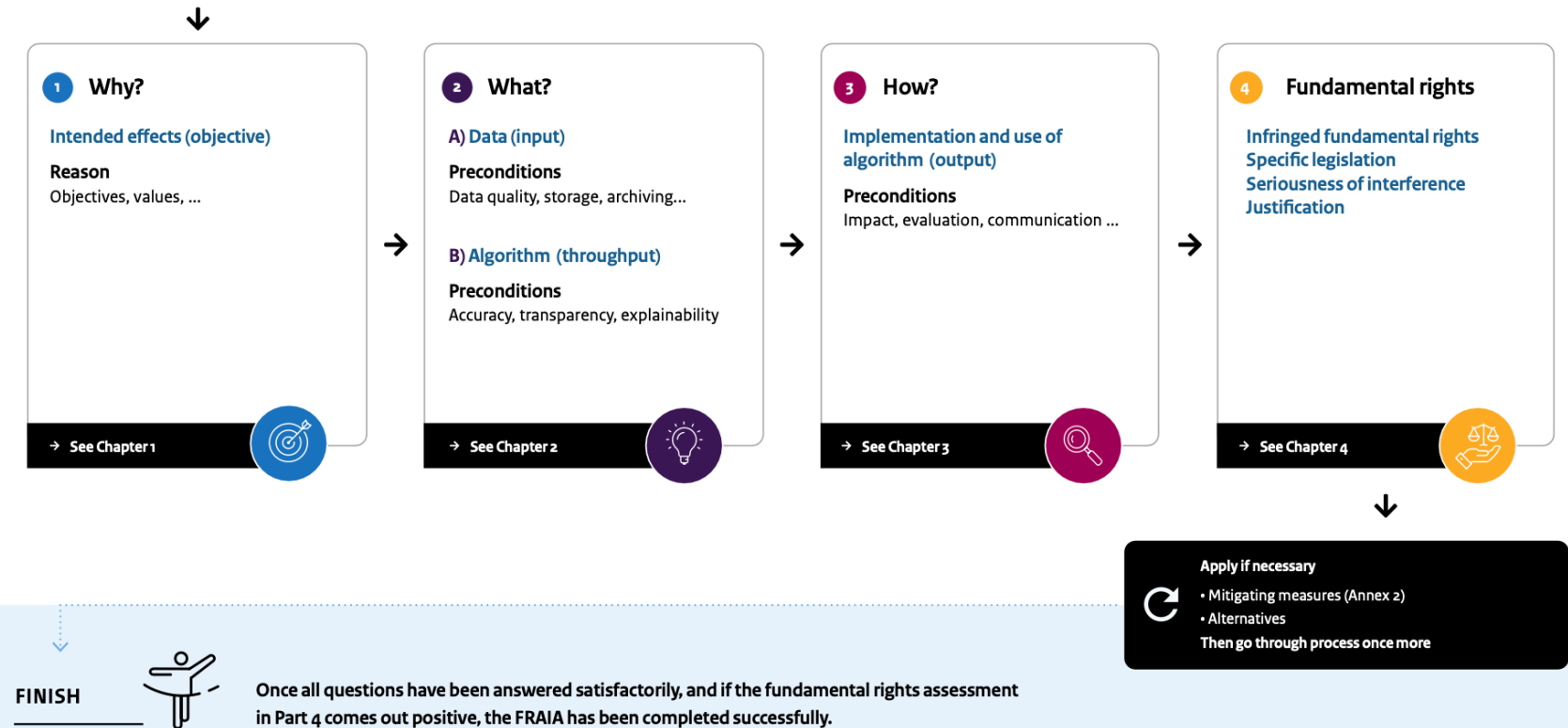- AI mystificatie

- Geen goede weg voor bezwaar maken

Impact Assessment
Fundamental rights and algorithms

FRAIA flow chart

START

↓

1 Why?

Intended effects (objective)

Reason
Objectives, values, ...

→ See Chapter 1

→

2 What?

A) Data (input)

Preconditions
Data quality, storage, archiving...

B) Algorithm (throughput)

Preconditions
Accuracy, transparency, explainability

→ See Chapter 2

→

3 How?

Implementation and use of algorithm (output)

Preconditions
Impact, evaluation, communication ...

→ See Chapter 3

→

4 Fundamental rights

Infringed fundamental rights
Specific legislation
Seriousness of interference
Justification

→ See Chapter 4

↓

Apply if necessary
• Mitigating measures (Annex 2)
• Alternatives
Then go through process once more

FINISH

Once all questions have been answered satisfactorily, and if the fundamental rights assessment in Part 4 comes out positive, the FRAIA has been completed successfully.

The Algorithm Register of the Dutch government

Find one of the 773 algorithms

Search by word, theme or organisation

Search 🔍

Choose a organisation type

Municipality	516
Organizational unit	52
Agency	45
Independent administrative body	43
Province	31
Ministry	28
Regional cooperation body	24

Show more ⌄

Choose a publicationcategory

Other algorithms	376
Impactful algorithms	370
High-Risk AI-system	27

Choose a impact assessment

Geen	545
Data Protection Impact Assessment (DPIA)	172
Overig	95
Impact Assessment Mensenrechten en Algoritmes (IAMA)	18

773 results found

◄ **1** 2 3 4 ... 78 ►

Download all algorithms ⌄

Energy label generator (EP-Online)
Ministry of Housing and Planning

Tool within EP-Online to generate the copy of the energy label for buildings

Read more

Publication category
Impactful algorithms

Impact assessment
DPIA, ...

Status
In use

Last change on 18th of February 2025, at 9:18 (CET) | Publication Standard 1.0

Slow traffic monitoring system Amsterdam
Municipality of Amsterdam

The various algorithms and calculation rules within LVMA work together so that information from video images can be converted to interpretable census data as decision-supporting information for public space steering and policy.

Read more

Publication category
Other algorithms

Impact assessment
Field not filled in.

Status
In use

Last change on 17th of February 2025, at 16:10 (CET) | Publication Standard 1.0

The 5 ★ model for transparant 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

Public standard
profiling algorithms

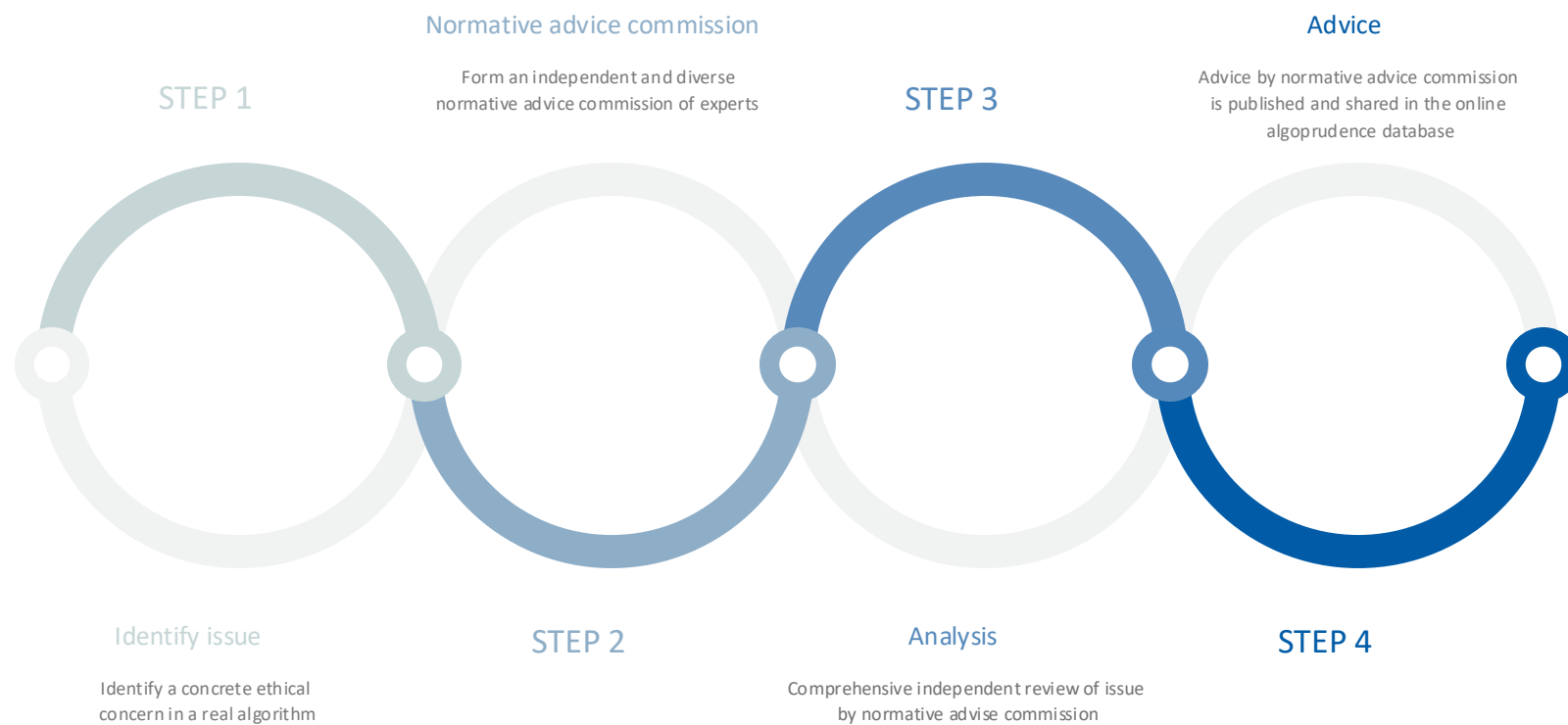# Public standard profiling algorithms

Responsible profiling algorithms through

- **quantitative safe guards**,

- **qualitative safe guards** and

- **organizational control measures**

based on Dutch government use cases.

Algorithm Audit

Algoprudence: Jurisprudence for algorithms

Normative advice commission

Form an independent and diverse
normative advice commission of experts

Advice

Advice by normative advice commission
is published and shared in the online
algoprudence database

STEP 1

STEP 3

Identify issue

Identify a concrete ethical
concern in a real algorithm

STEP 2

Analysis

Comprehensive independent review of issue
by normative advise commission

STEP 4

Example of **algoprudence**

Case: risk profiling for social welfare re-examination

Eligible criteria

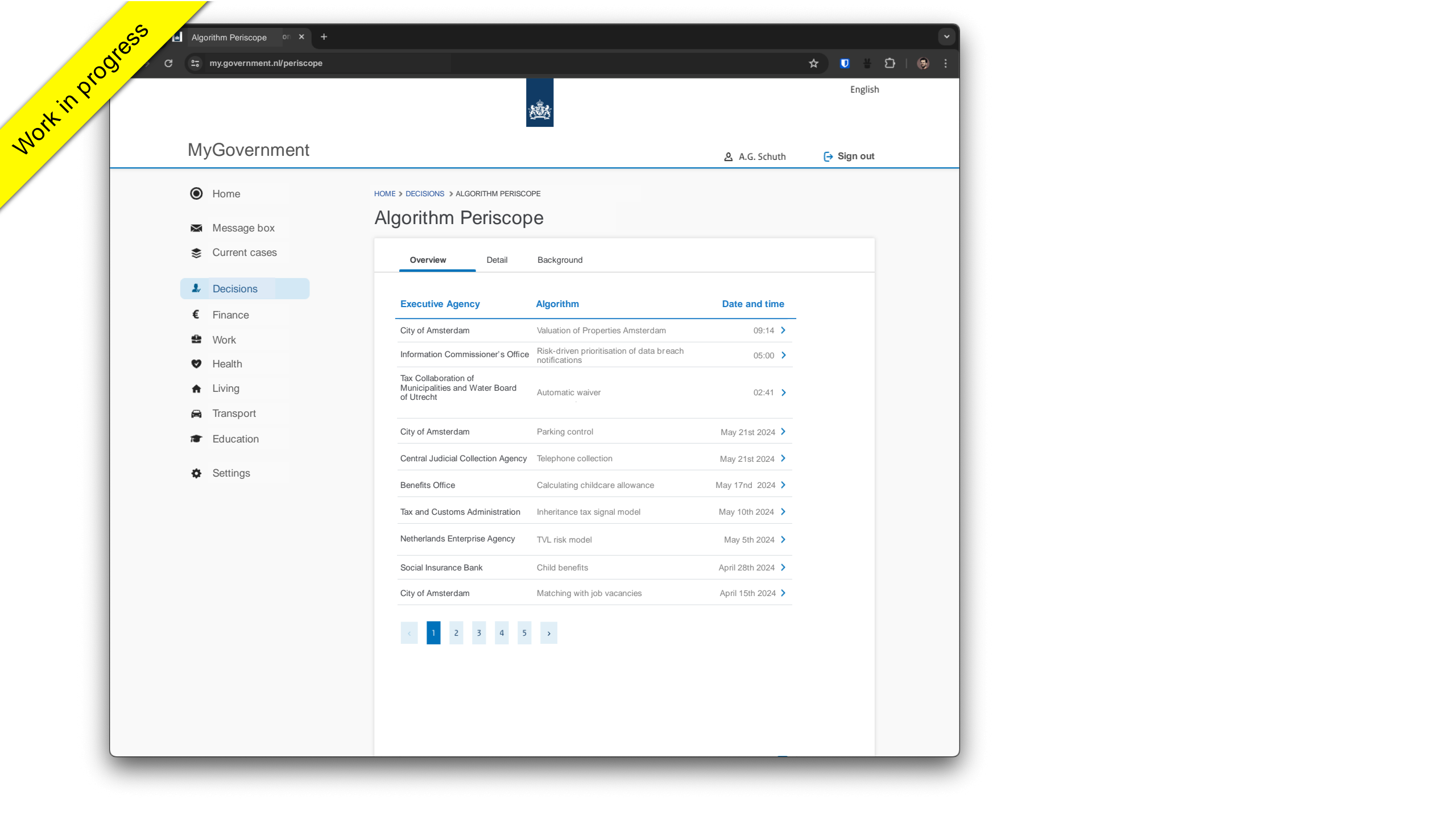| Criterion	
Age	🛞
No show at appointment with municipality	🔗 🛞
Reminders for providing information	🔗 🛞
Participation in trajectory to work (training, workplace, social duty)	🔗 🛞 ❓
Type of living (cohabitation, living together)	🔗 🛞
Cost sharing	🔗 🛞

Ineligible criteria

Criterion	
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	🔢

Legend

Symbol	Meaning	Symbol	Meaning
⛔	Unlawful	↔	Subject to change
⚡	Proxy discrimination	🔢	Subjective
🔗	Connection with aim pursued	❓	Unclear defintion
🔗	No connection with aim pursued	🛞	Manageable risks

English

MyGovernment

A.G. Schuth   Sign out

Home

Message box

Current cases

Decisions

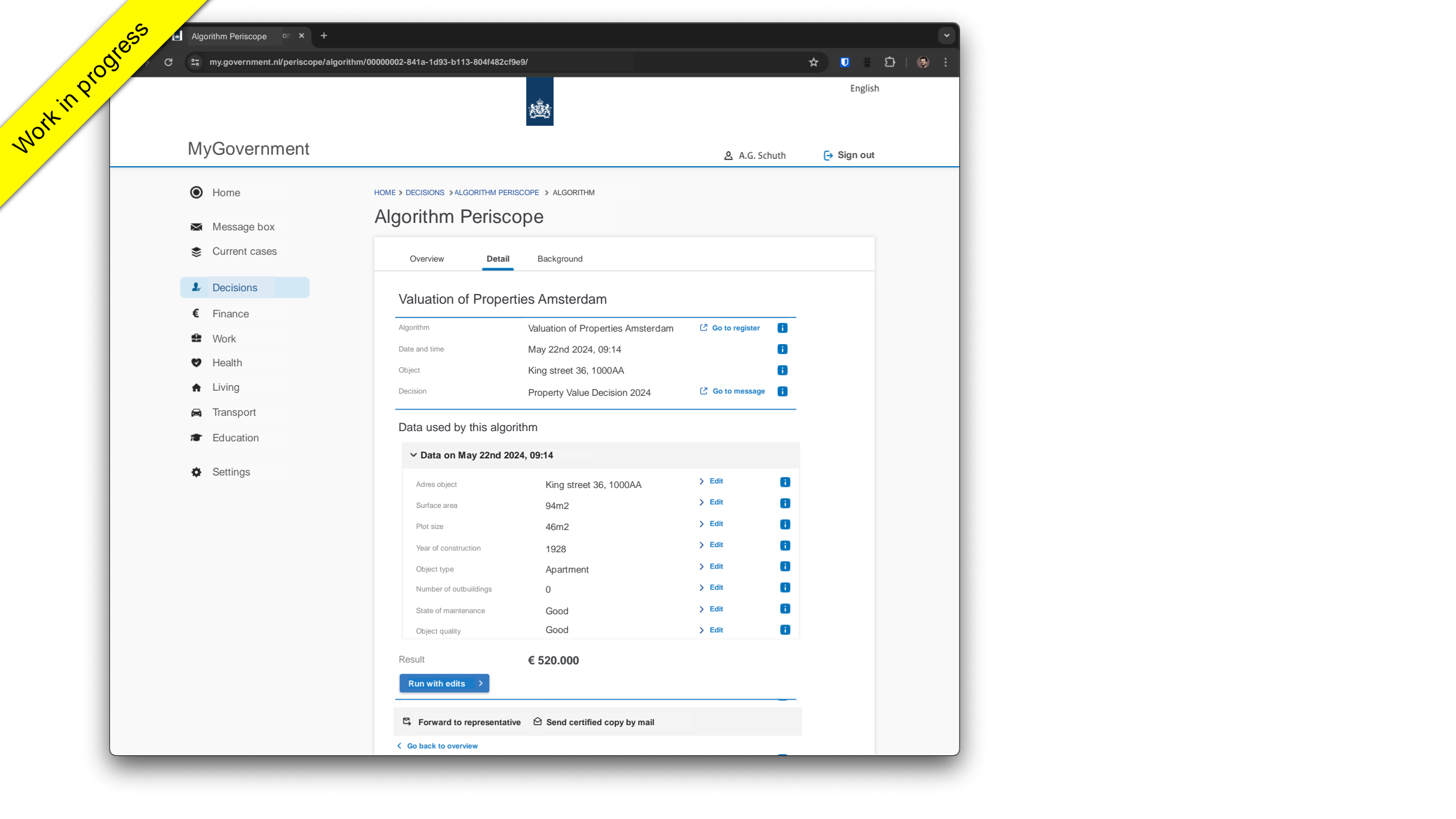Finance

Work

Health

Living

Transport

Education

Settings

Algorithm Periscope

Overview   Detail   Background

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 >

‹ 1 2 3 4 5 ›

English

MyGovernment

A.G. Schuth   Sign out

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Algorithm Periscope

| Overview | **Detail** | Background |

Valuation of Properties Amsterdam

Algorithm	Valuation of Properties Amsterdam	Go to register
Date and time	May 22nd 2024, 09:14	
Object	King street 36, 1000AA	
Decision	Property Value Decision 2024	Go to message

Data used by this algorithm

⌄ Data on May 22nd 2024, 09:14

Adres object	King street 36, 1000AA	> Edit
Surface area	94m2	> Edit
Plot size	46m2	> Edit
Year of construction	1928	> Edit
Object type	Apartment	> Edit
Number of outbuildings	0	> Edit
State of maintenance	Good	> Edit
Object quality	Good	> Edit

Result	€ 520.000

Run with edits >

🖹 Forward to representative   ✉ Send certified copy by mail

< Go back to overview

- 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.

You can download my slides on GitHub.

Happy to connect on LinkedIn!