



**AI is overal, BG.legal
ziet kansen!**

Jubileum event

BIC Eindhoven, 21 maart 2024



BG.legal
advocaten

Agenda

- **Welkom en introductie**
 - 50 jaar BG.legal
 - BG.legal en AI
- **Keynote spreker Aragorn Meulendijks**
- **AI toepassingen + legal**
 - Dembrane | Bram Delisse
 - VicarVision | Tim den Uyl
- **Afsluiting + borrel!**





Sector
Tech



Bogaerts & Groenen
advocaten

*ziet meer, doet meer,
al meer dan 40 jaar*



**Wij geven al 50 jaar
onze eigen betekenis
aan legal**



Sector
Zorg



Sector
Vastgoed & Omgeving

BG.legal en AI

Kennisplatform legalAIR

Juridische en ethische aspecten van AI

'omarmd' door de Nederlandse AI coalitie

zie > www.legalair.nl



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advocaten



BG.legal en AI

AI compliance assessment

Consortium ontwikkelt een AI compliance check



zie > www.ai-compliance.nl

AI COMPLIANCE CHECK

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BG.legal en AI

EU digitaliseringsregelgeving

Tsunami aan regelgeving:

- Cybersecurity
- Data
- Artificial Intelligence
- Privacy

zie > www.bg.legal/datalawhub/Data+Law+Hub



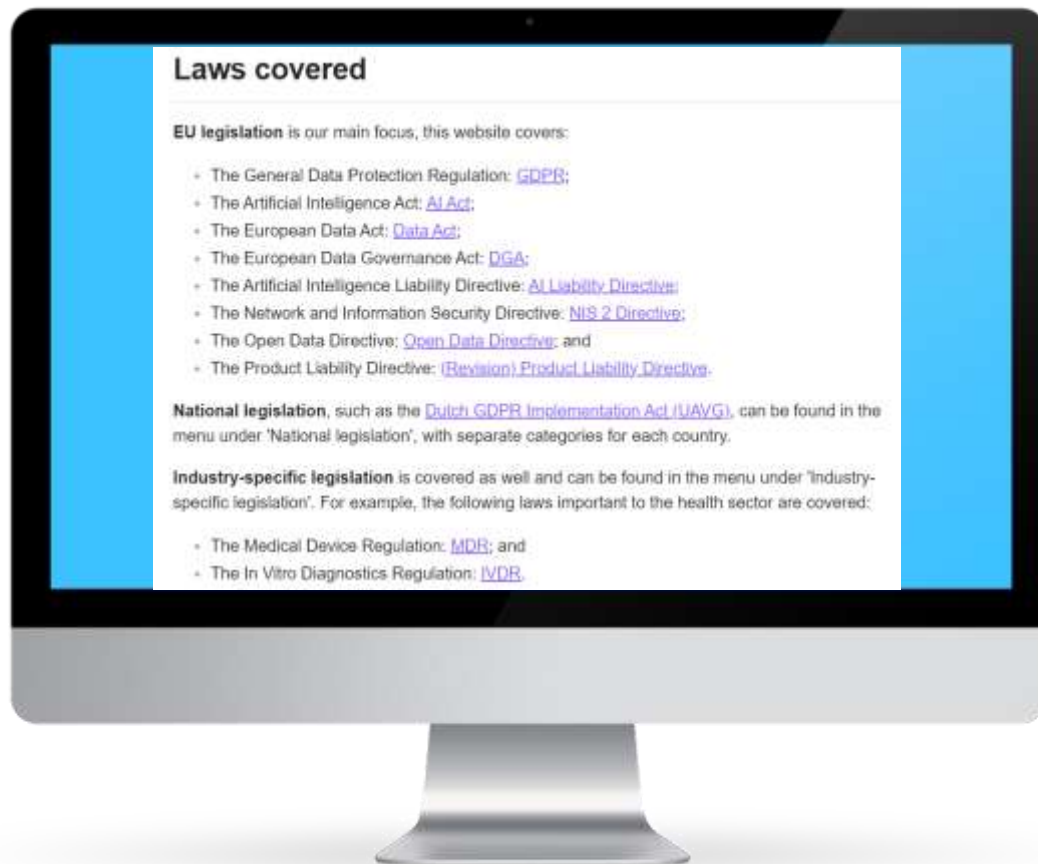
AI is overal, BG.legal ziet kansen!

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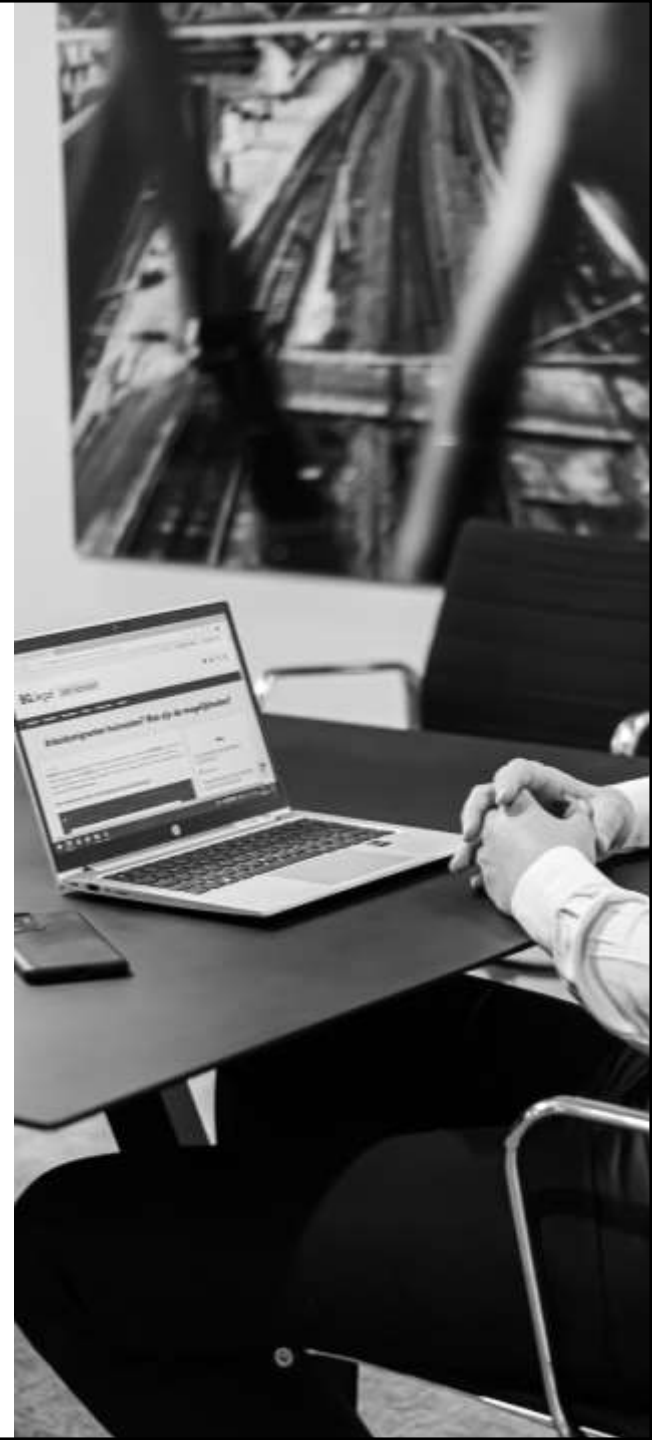


BG.legal en AI

Data Law Hub



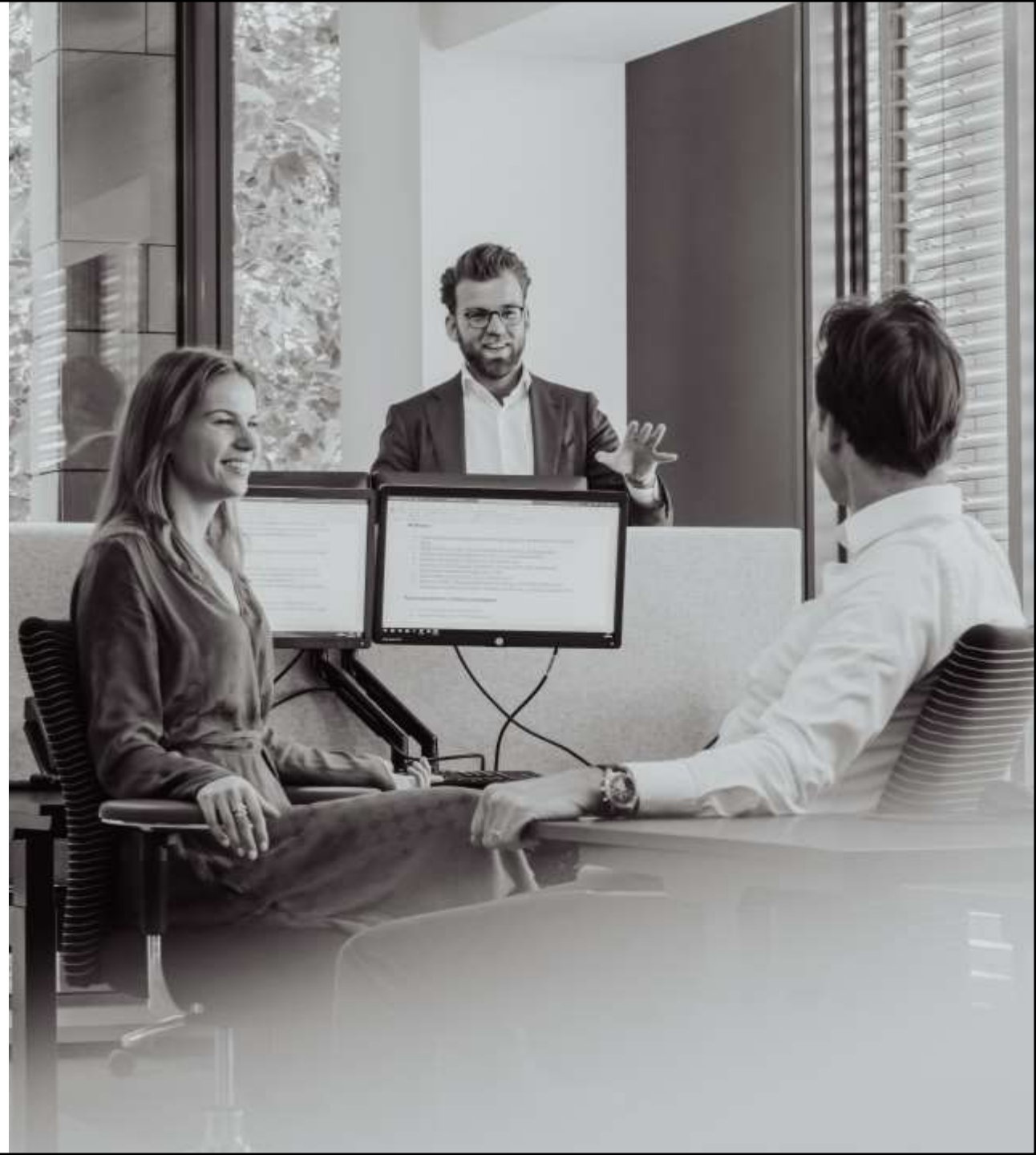
AI is overal, BG.legal ziet kansen!



BG.legal en AI

Fin-X, naar een betekenisvolle uitleg van AI-toepassingen

- Hoe leg je gebruik AI uit
- Financiële sector



BG.legal en AI

AI in Manufacturing, Testing and Experimentation Facilities Network for European industries

- AI compliance assessment voor maakindustrie
- AI regulatory sandbox voor maakindustrie



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BG.legal
advocaten



**Technology is deflationary,
we are entering into an age of deflation unlike any the
world has ever seen.**

– Jeff Booth

Toekomst-historicus, Tech-expert:

Aragorn Meulendijks

BG.legal maakt het inzichtelijk

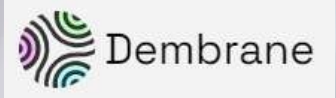


Dembrane | Bram Delisse



AI is overal, BG.legal ziet kansen!

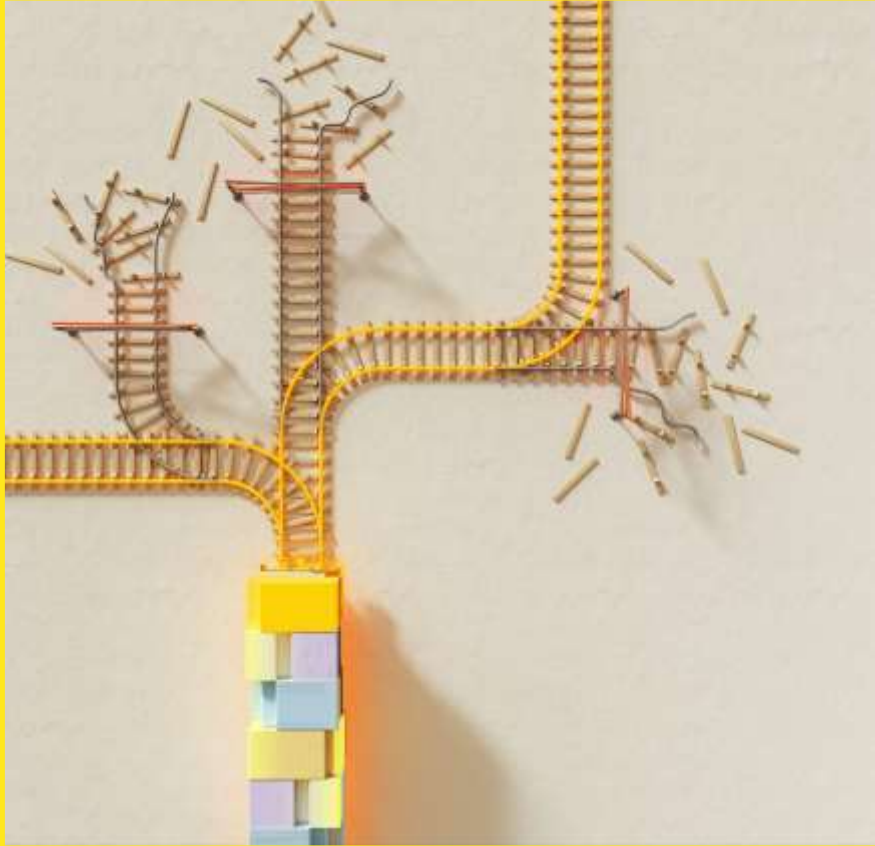
BG.legal
advocaten

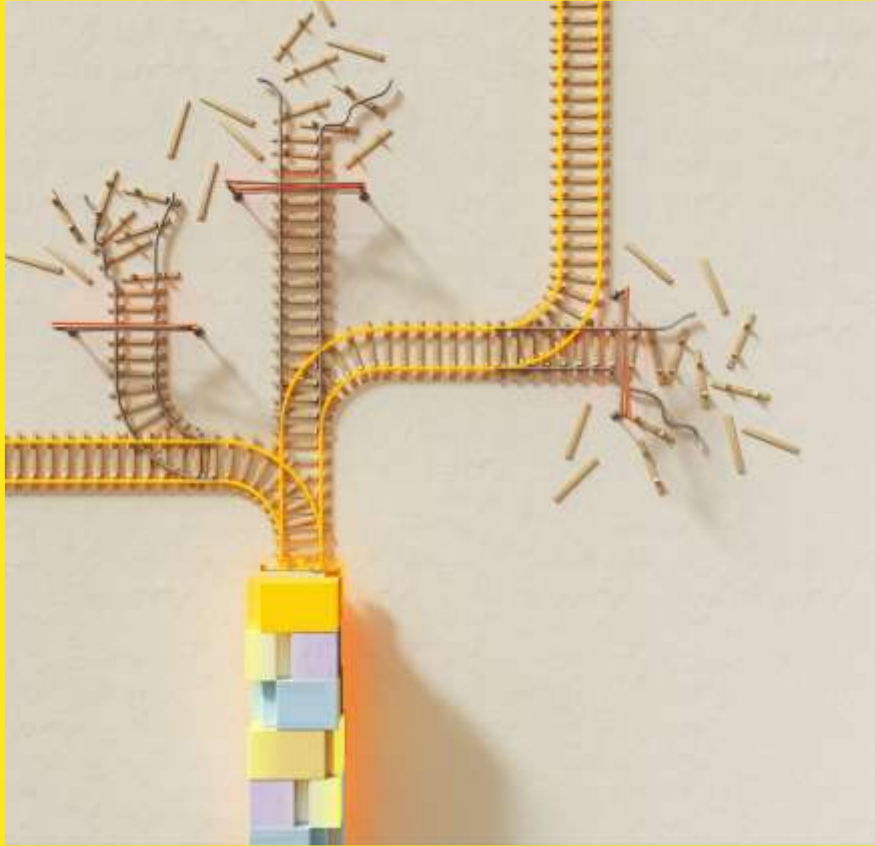




Dembrane

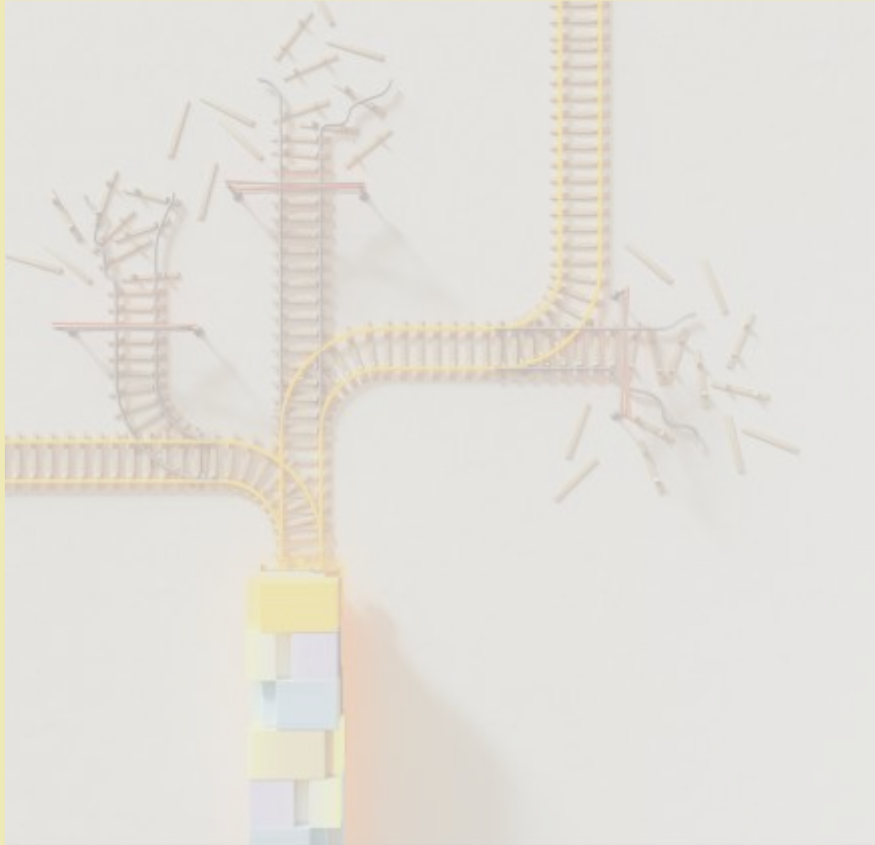
AI & Democratie



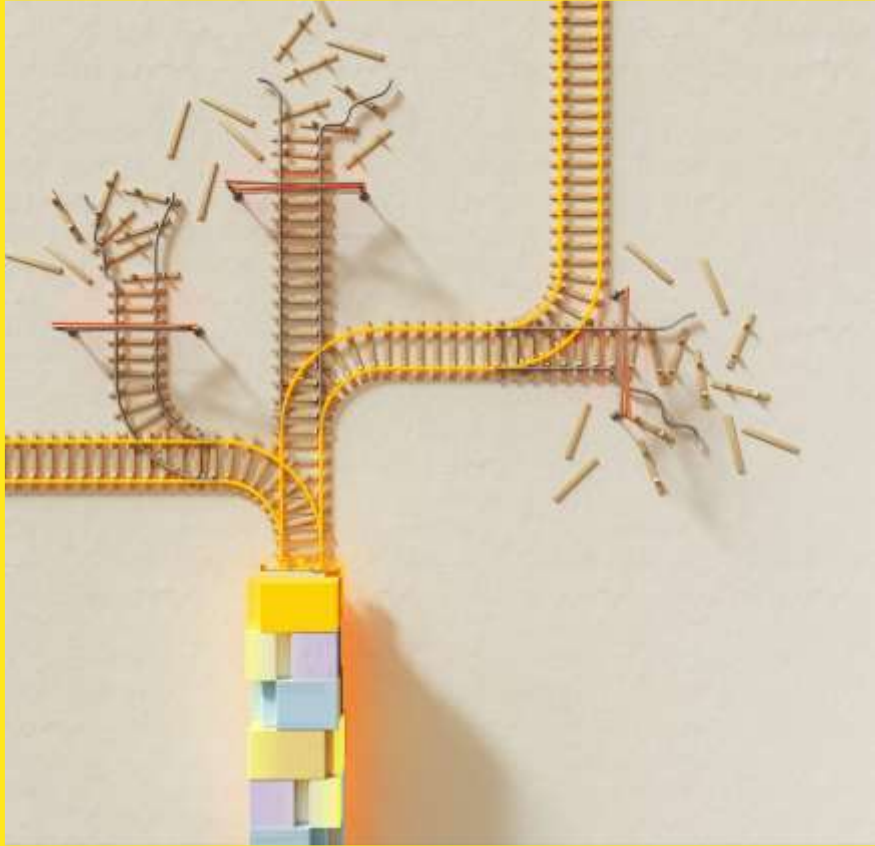


AI





Democratie



Artificiële Intelligentie

Een (digitaal) systeem dat zelfstandig denkstappen zet

Artificiële Intelligentie



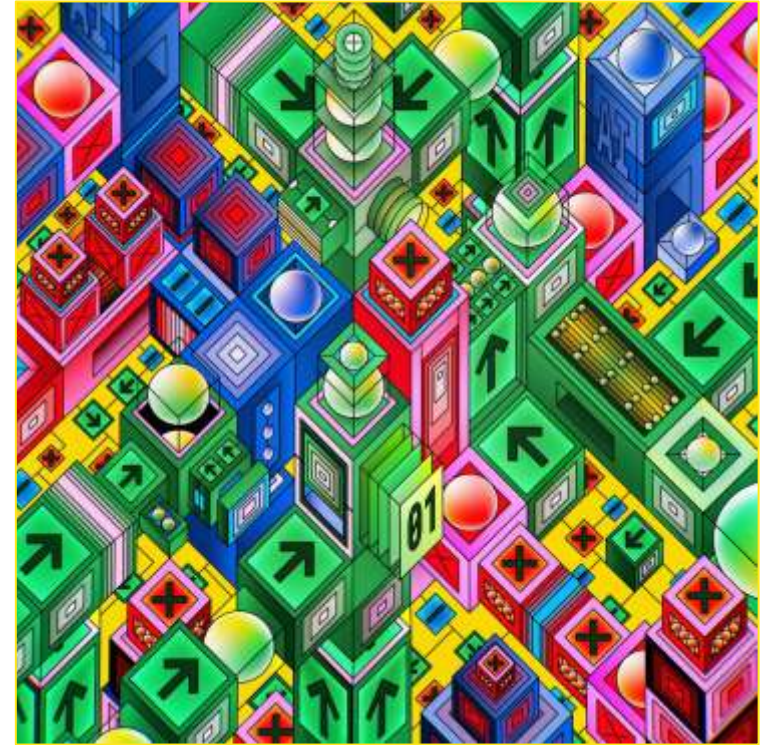
Een (digitaal) systeem dat zelfstandig denkstappen zet

Artificiële Intelligentie



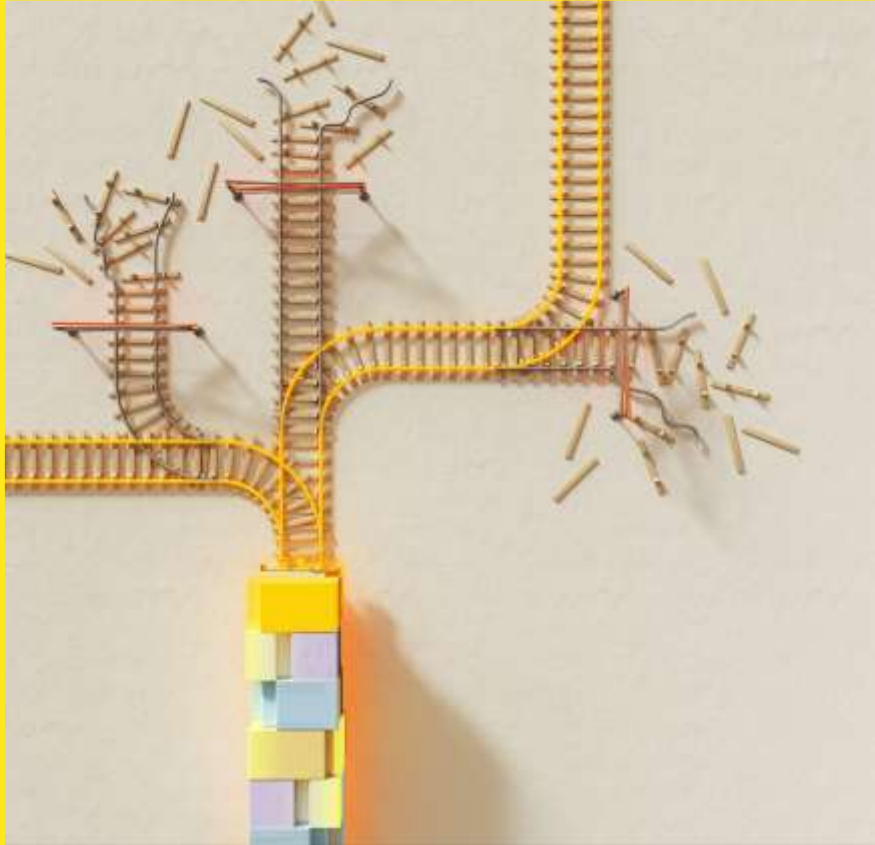
Een (digitaal) systeem dat zelfstandig denkstappen zet

Artificiële Intelligentie



Een (digitaal) systeem dat zelfstandig denkstappen zet

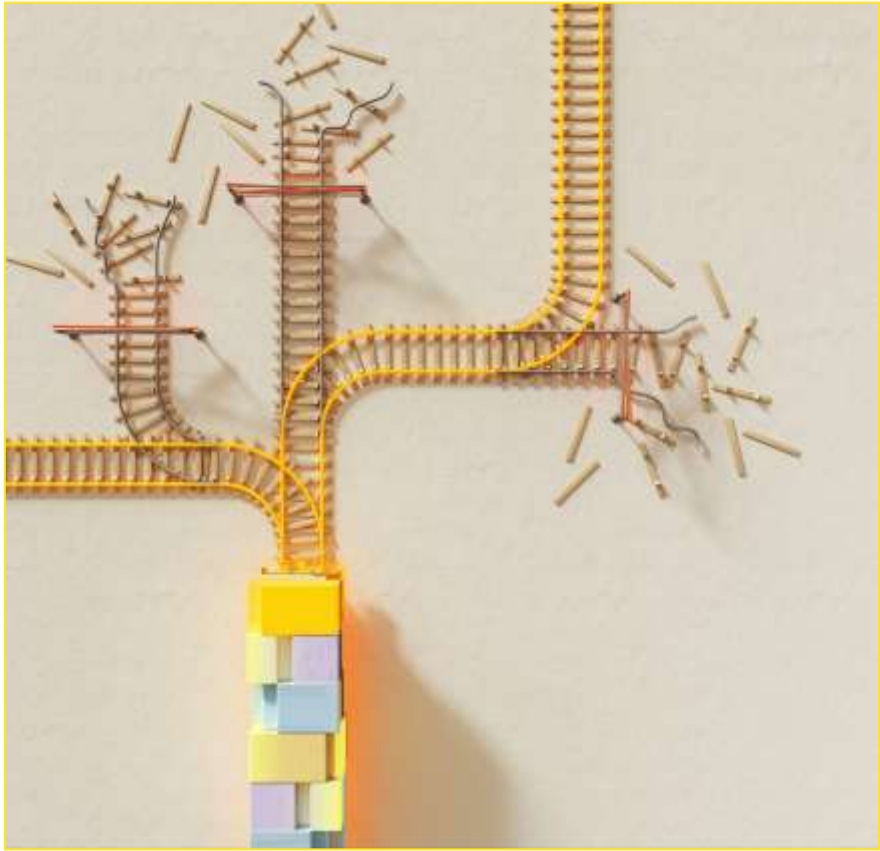
Artificiële Intelligentie

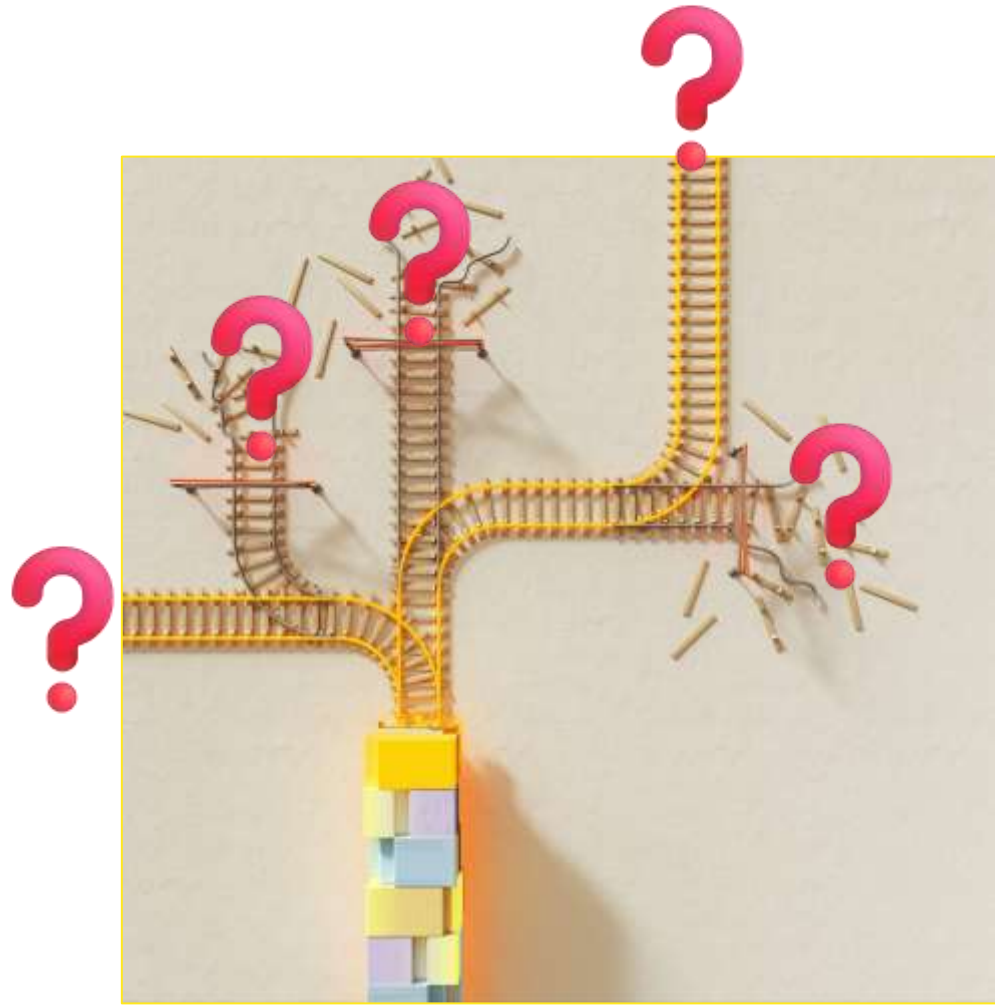


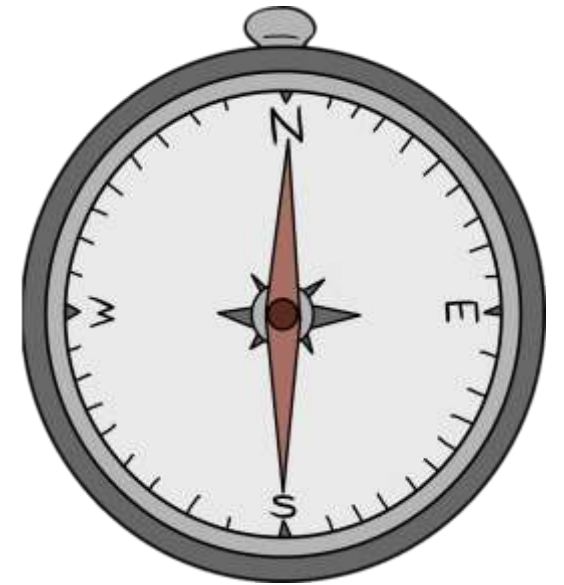
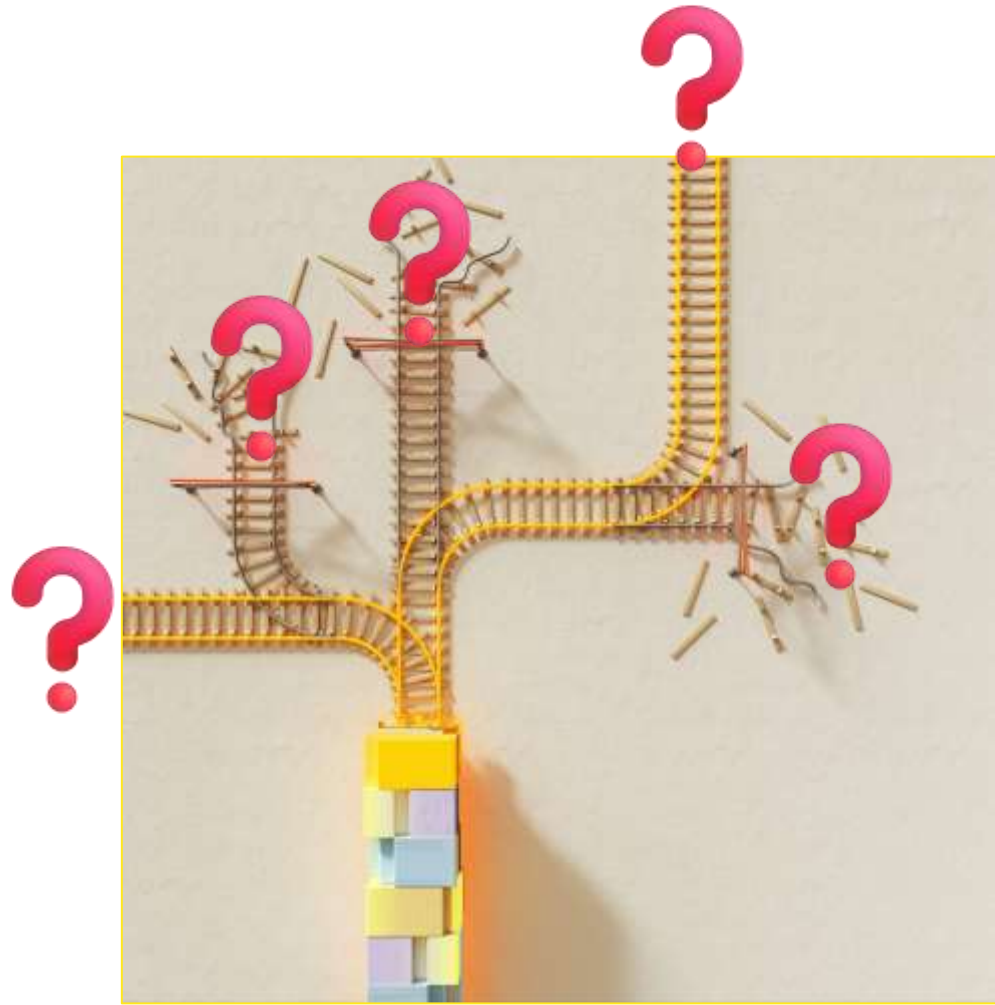
Sturen van AI

Een wereld waar AI democratisch wordt gestuurd



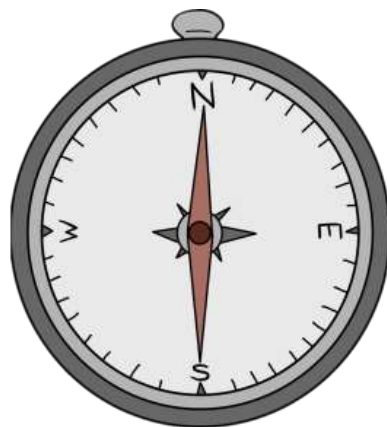


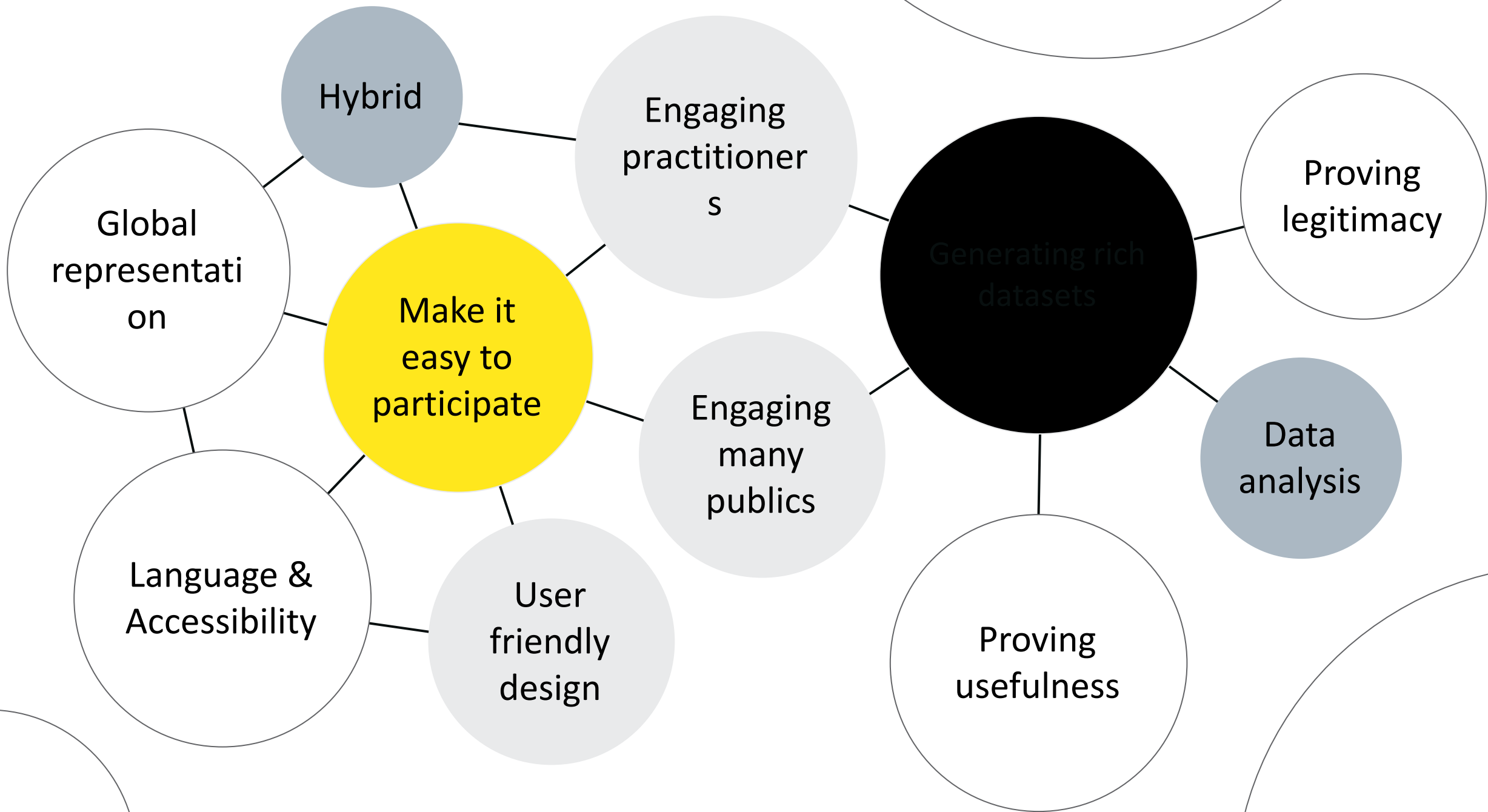






x





Hybrid

Engaging
practitioner
s

Proving
legitimacy

Global
representati
on

Make it
easy to
participate

Generating rich
datasets

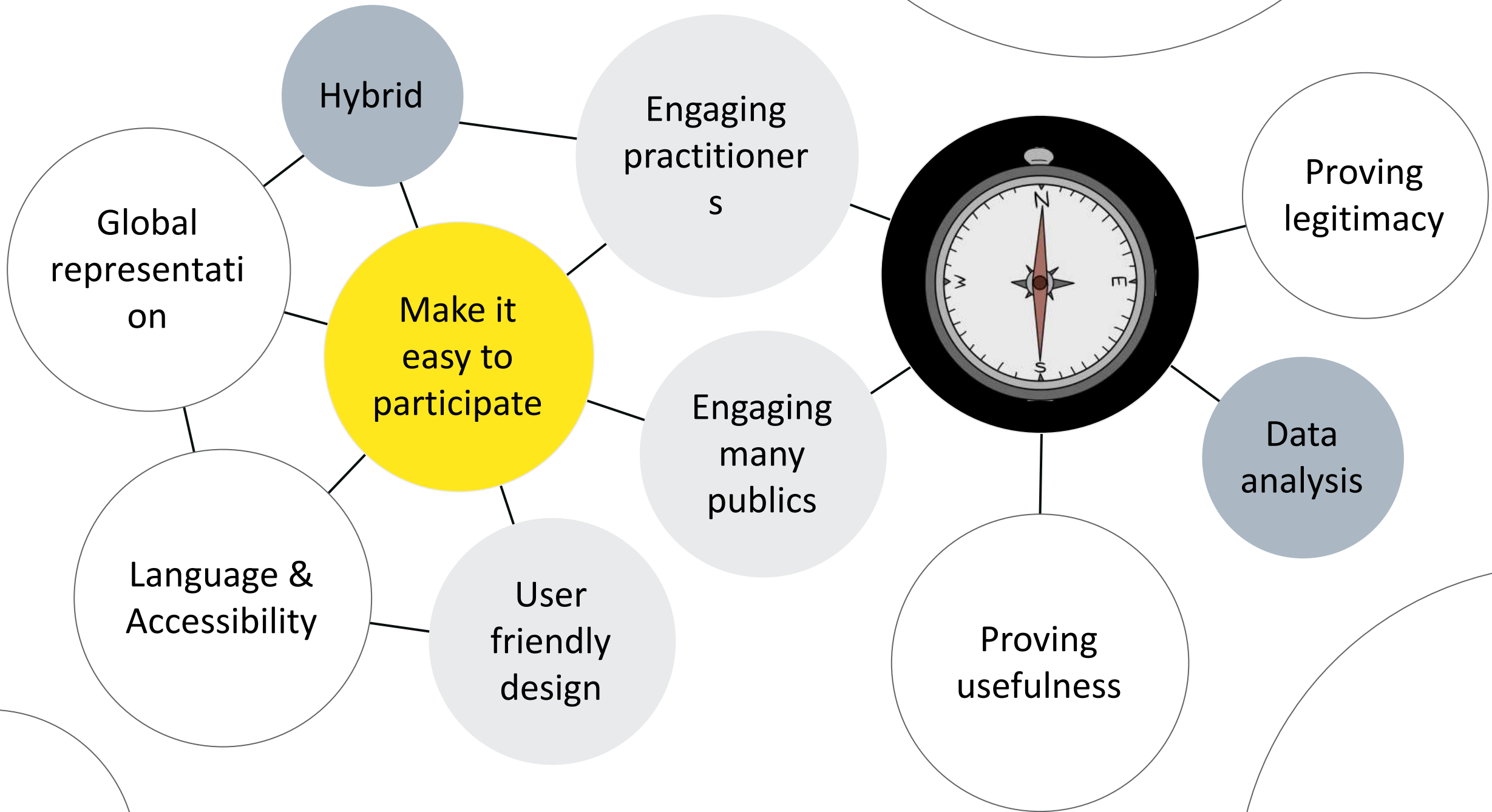
Engaging
many
publics

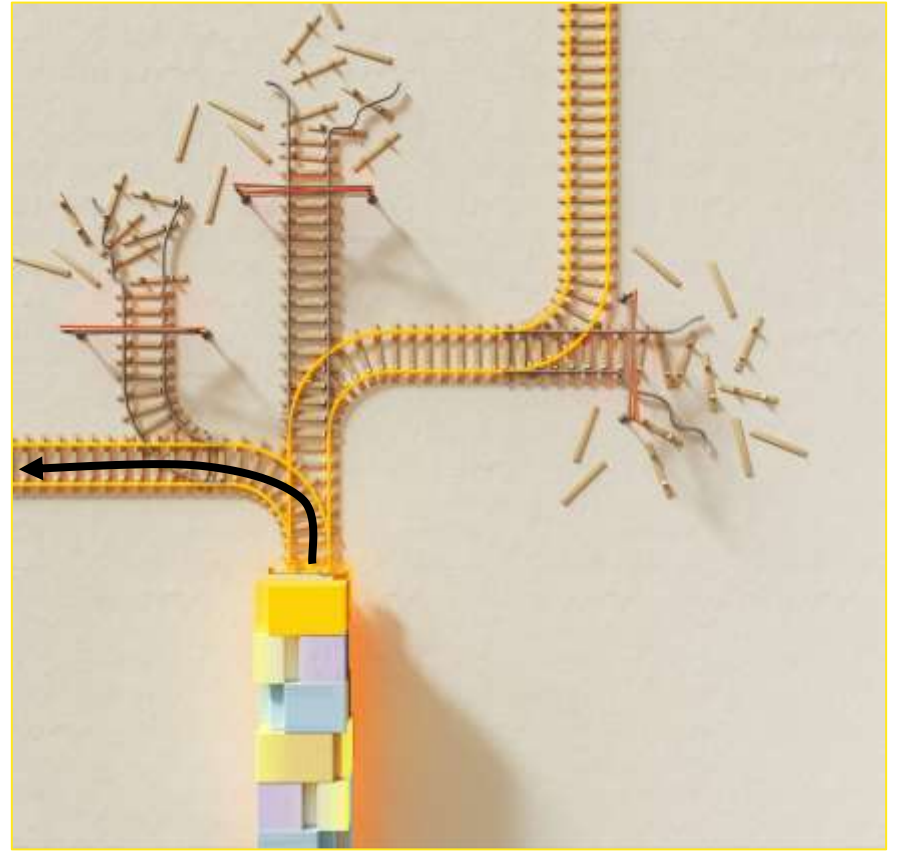
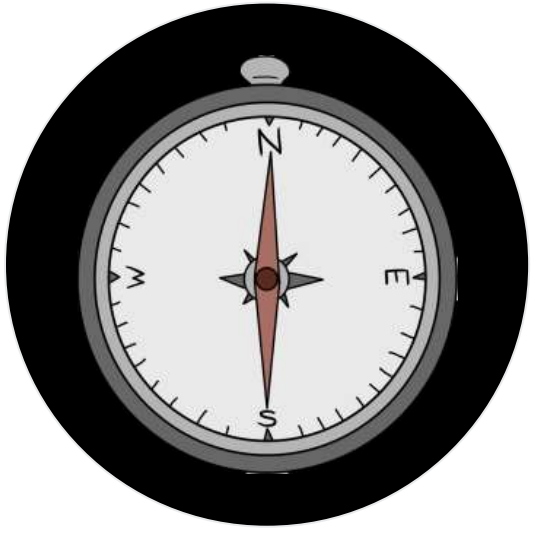
Data
analysis

Language &
Accessibility

User
friendly
design

Proving
usefulness





Nieuwe Democratie

Een wereld waar een
democratische revolutie mogelijk is
door AI

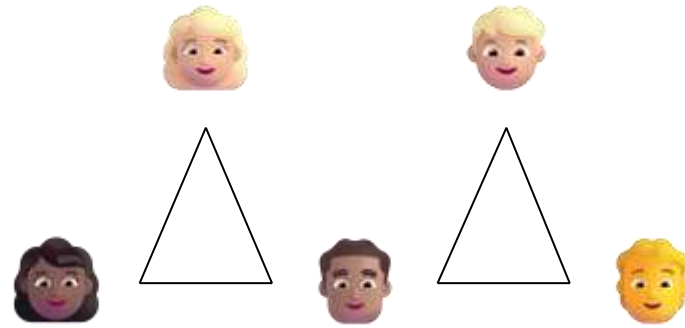


Er zit een knelpunt in de
informatieverwerking van
onze democratie

Network 1

Basic social graph.

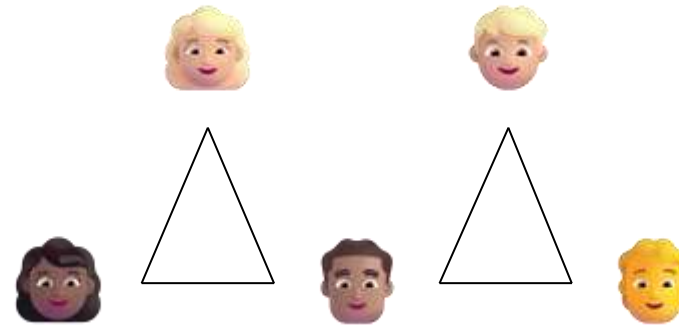
Intimate, hard to scale.



Network 1

Basic social graph.

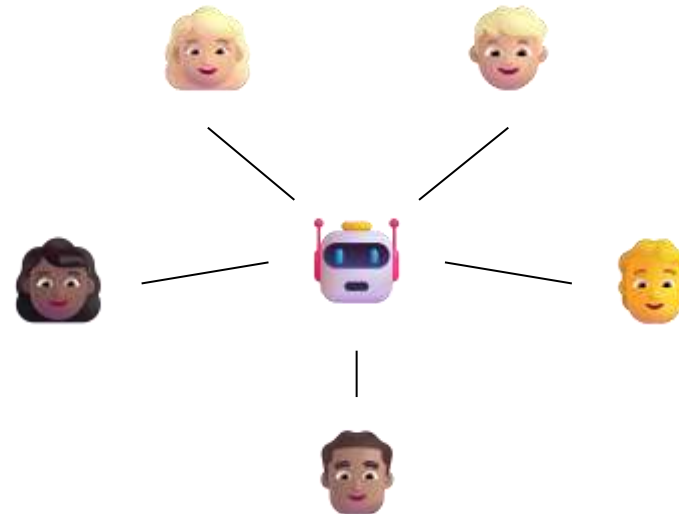
Intimate, hard to scale.



Network 2

Parallel publishing and
algorithmic
recommendations.

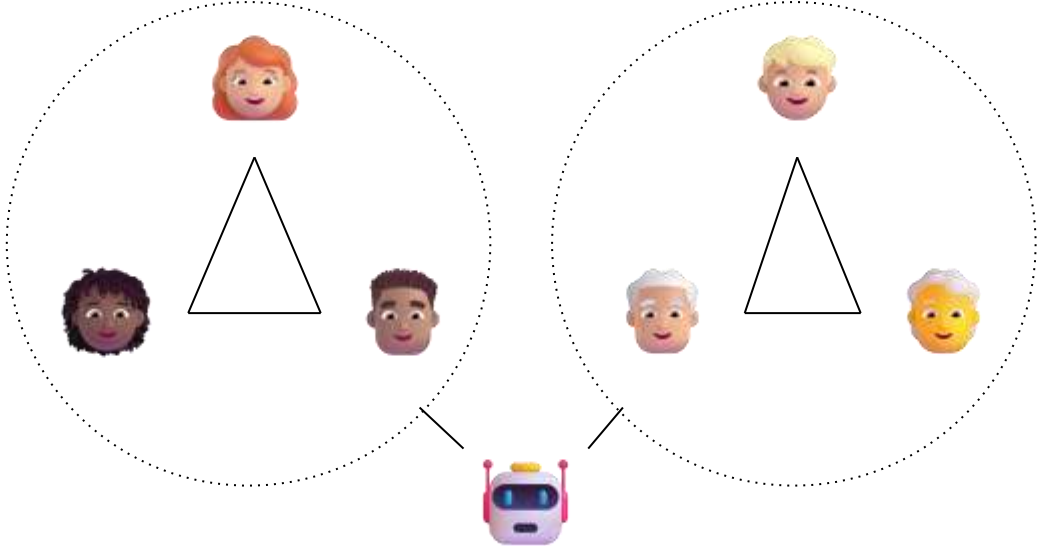
Alienating, scalable.



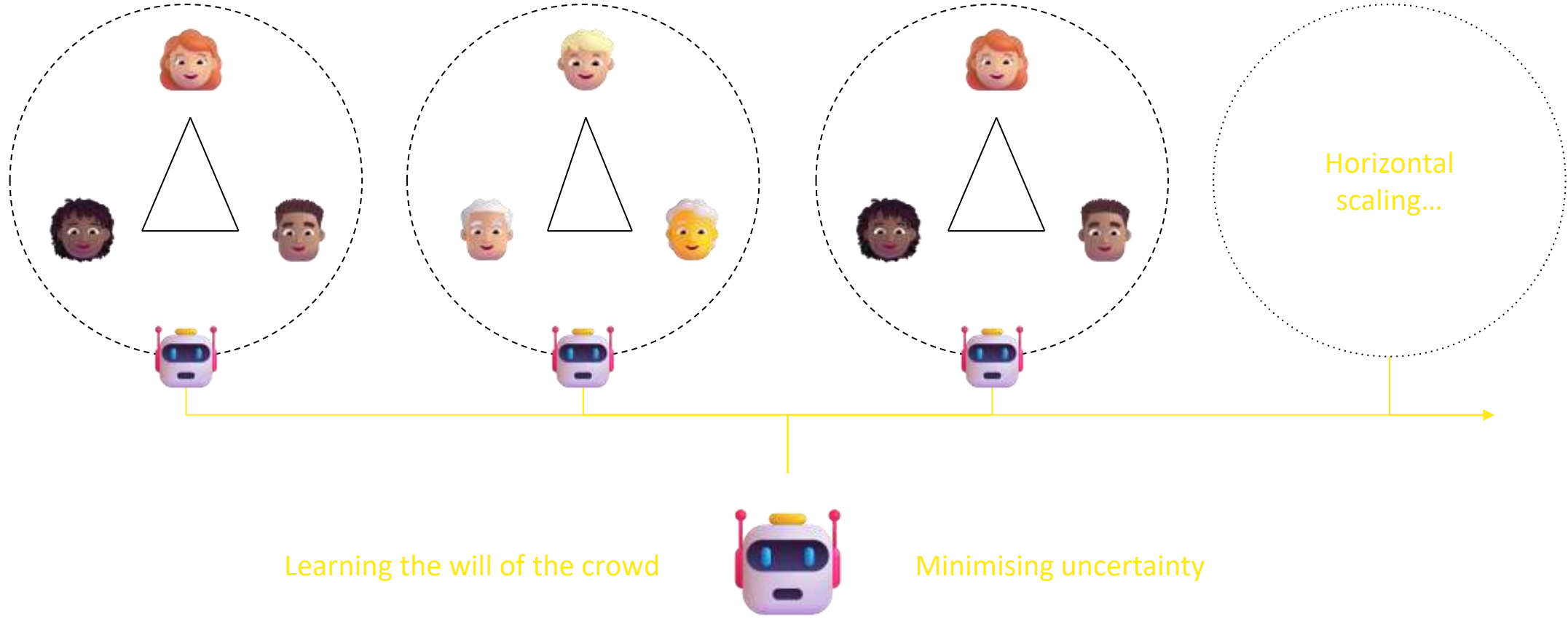
Network 3

AI assisted deliberation
and co-creation.

Intimate, scalable.

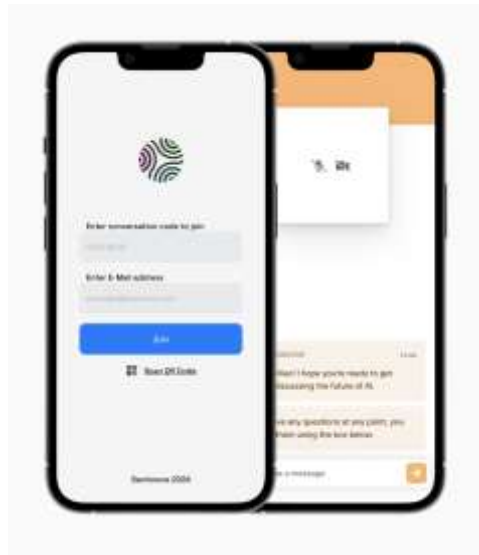
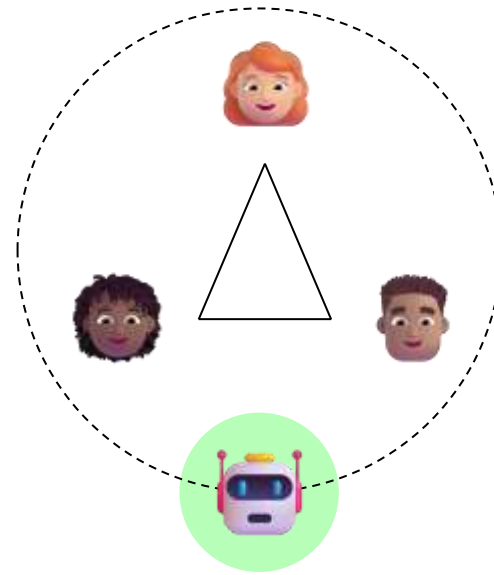


Having fun, sharing stories, getting to know people



Learning the will of the crowd

Minimising uncertainty



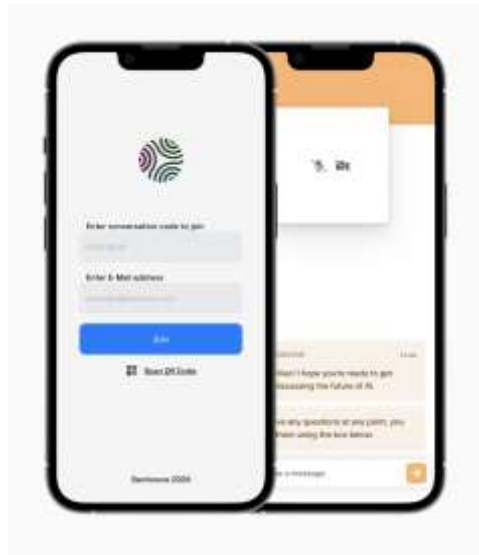
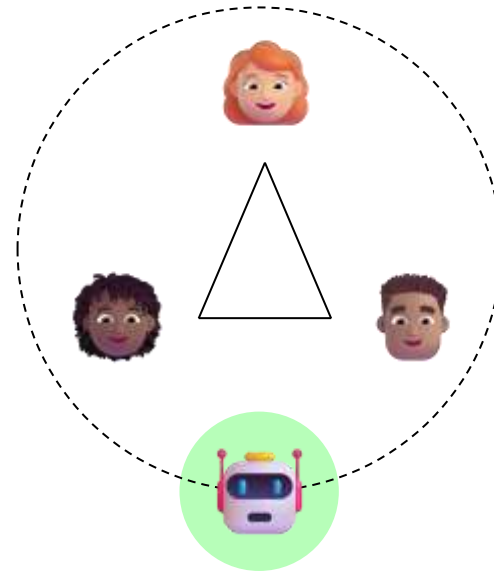
Opname



Transcriptie



Analyse



Opname

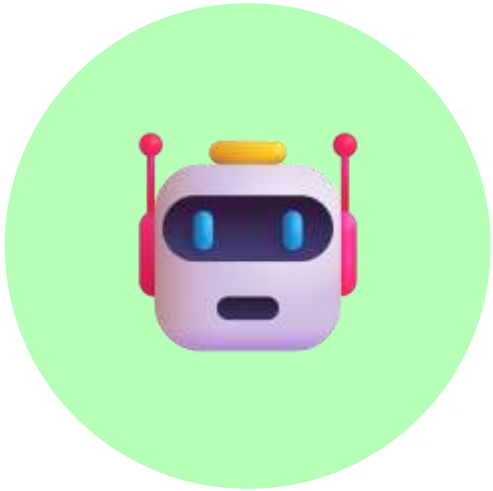


Transcriptie

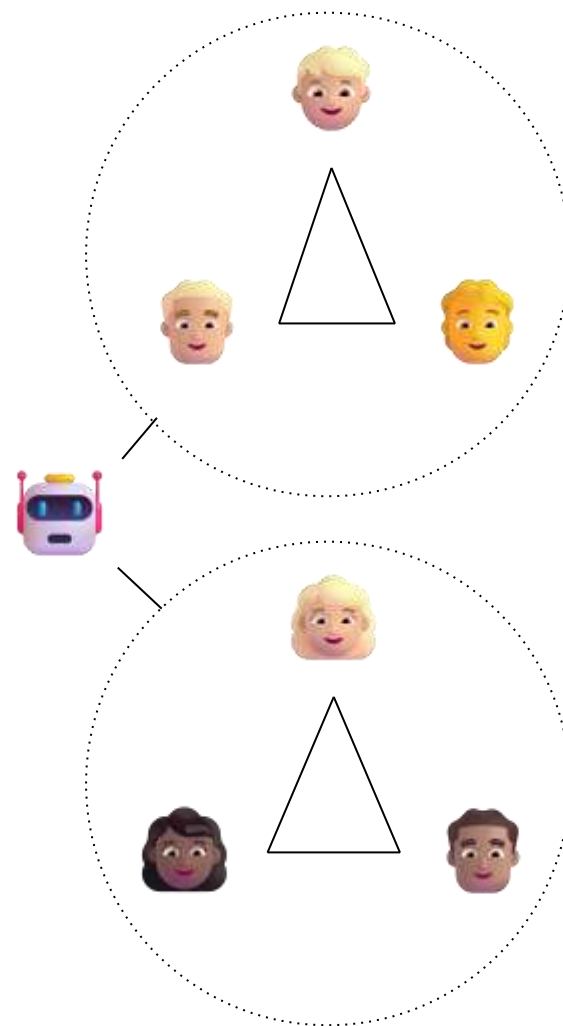


Analyse









VicarVision | Tim den Uyl



FaceReader and the many applications of emotion recognition



Vicarious Perception Technologies BV

Singel 160
1015 AH Amsterdam
www.vicarvision.nl

Tim den Uyl
CEO VicarVision

March 21, 2024
BG.legal, BIC Eindhoven



VicarVision HQ in Amsterdam

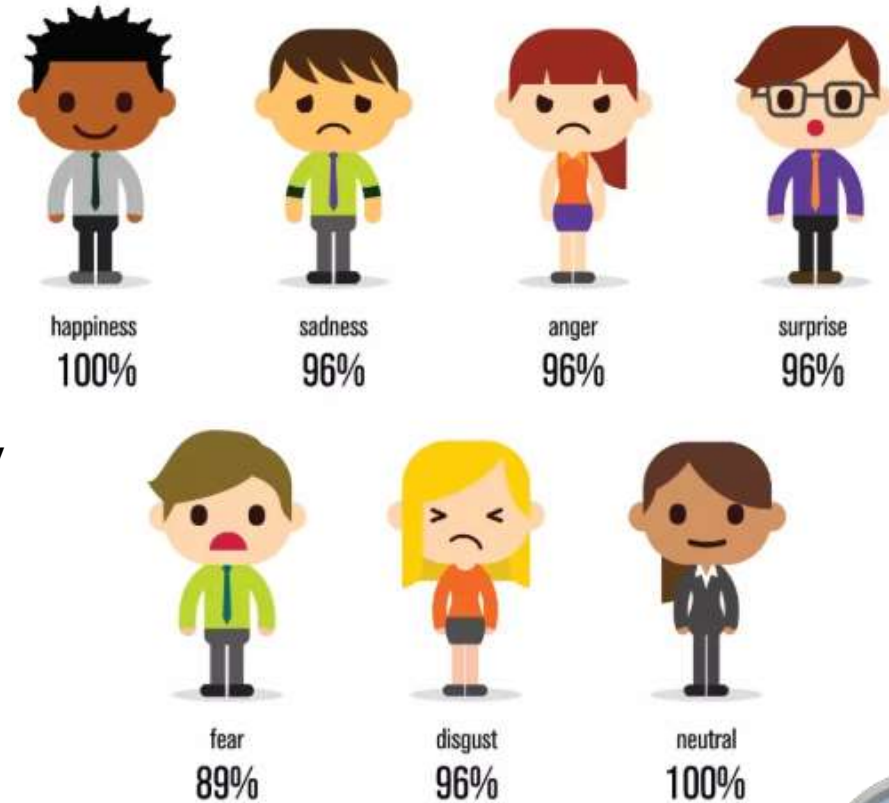




Automatic Facial Expression Recognition

FaceReader

- Recognizes 7 basic emotions (and much more)
- On the market since 2007
- Developed by VicarVision, distributed worldwide by Noldus IT
- Internationally used in over 1000 institutes
- Cited in over 1200 peer reviewed publications

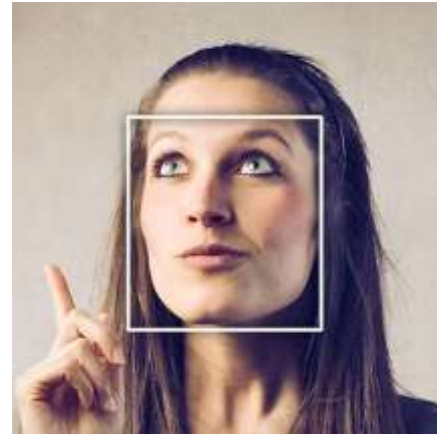




How FaceReader works – Classical Approach

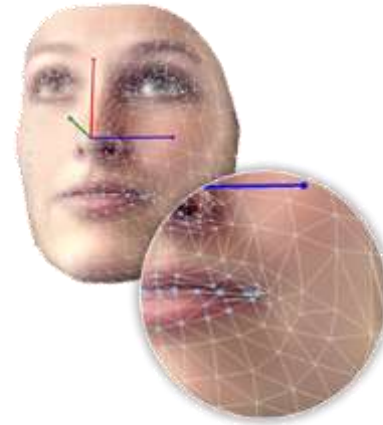
1. Face Detection

- Find the face using the Viola-Jones algorithm



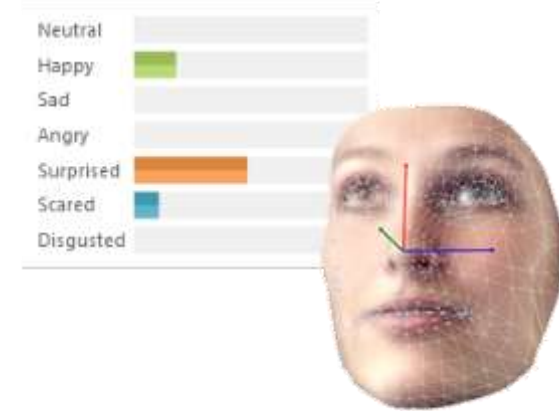
2. Face Modeling

- Model the face using Active Appearance Method
- 500 keypoints in the face can be tracked



3. Face Classification

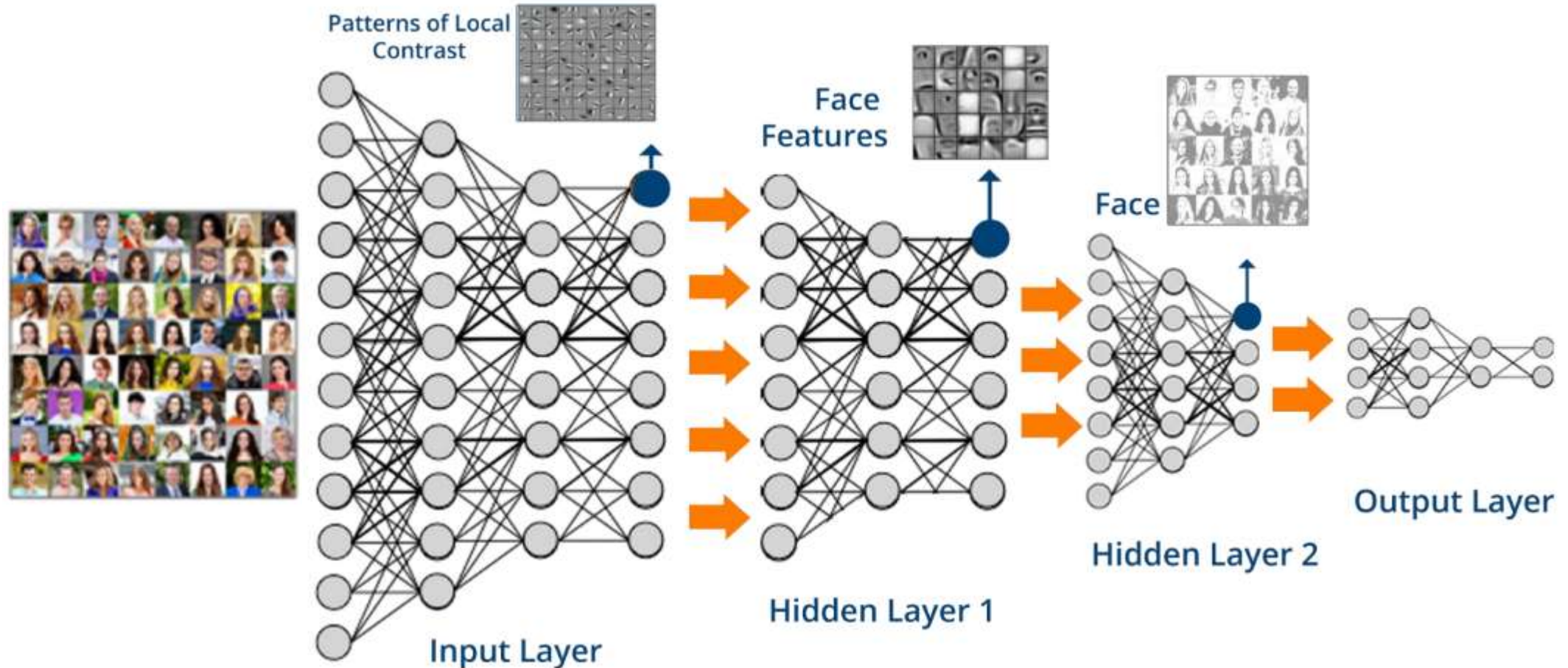
- Use AAM vector as input for Artificial Neural Network (ANN)
- ANN is trained on over 10.000 annotated emotion images





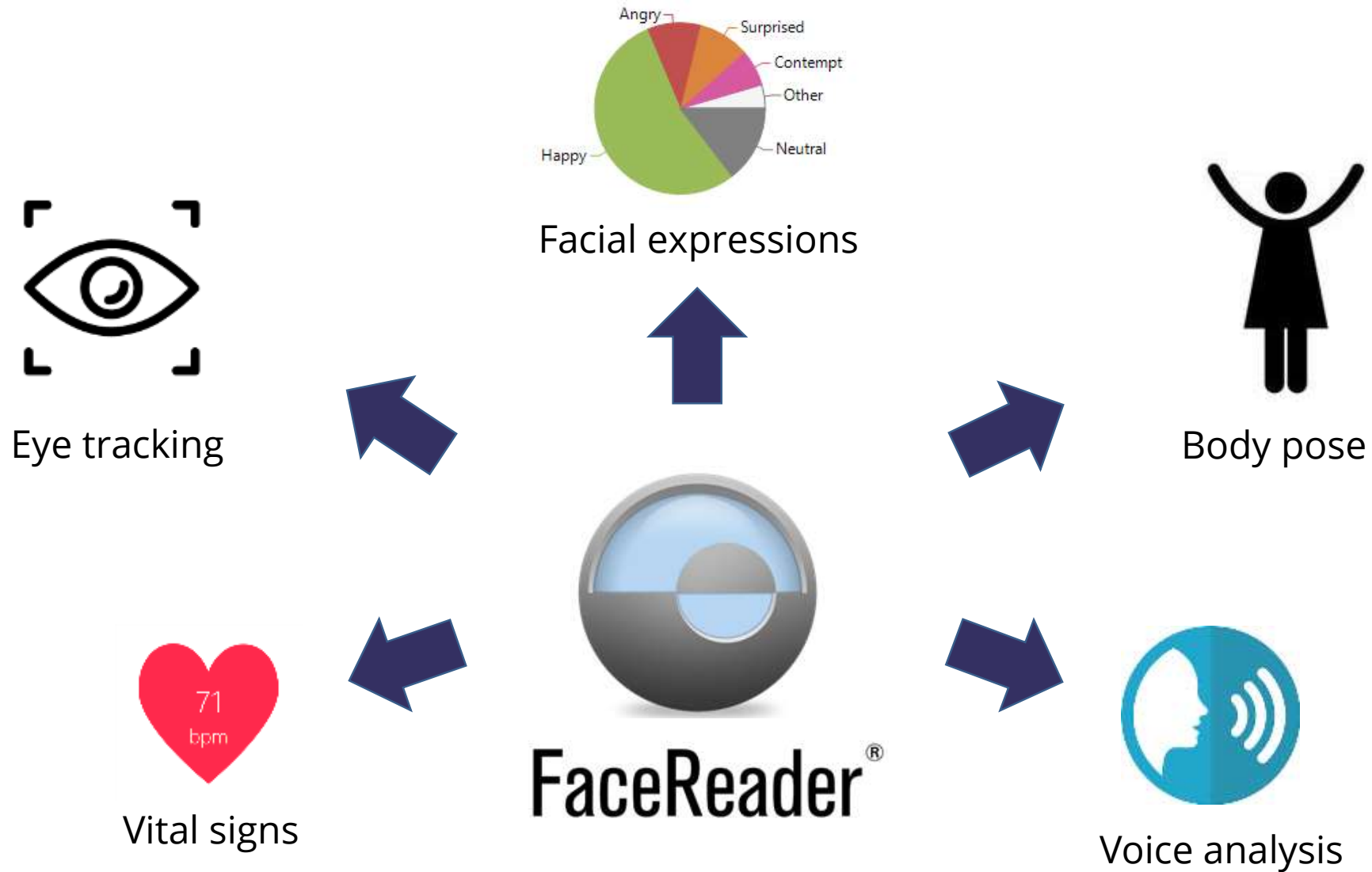
How FaceReader works – Deep Learning Approach

Hierarchical ordering of learnt 'concepts'





The power of multimodal analysis – all from a single webcam





FaceReader Demo

The interface displays a central video feed of a man's face with a facial mesh overlay. A label '4: Brow Lowerer' points to a specific landmark on the forehead. To the left, there are three circular indicators (two grey, one yellow), a list of emotions (Neutral, Happy, Sad, Angry, Surprised, Scared, Disgusted, Contempt), and a circular activity chart with axes for Active/Inactive and Unpleasant/Pleasant. To the right, there is a 'Valence' graph, a 'Calibrating' heart icon, and a 'Heart rate' section with 'confidence' and 'Calibrating' status for 'Heart rate variability RMSSD' and 'Heart rate variability SDNN'.

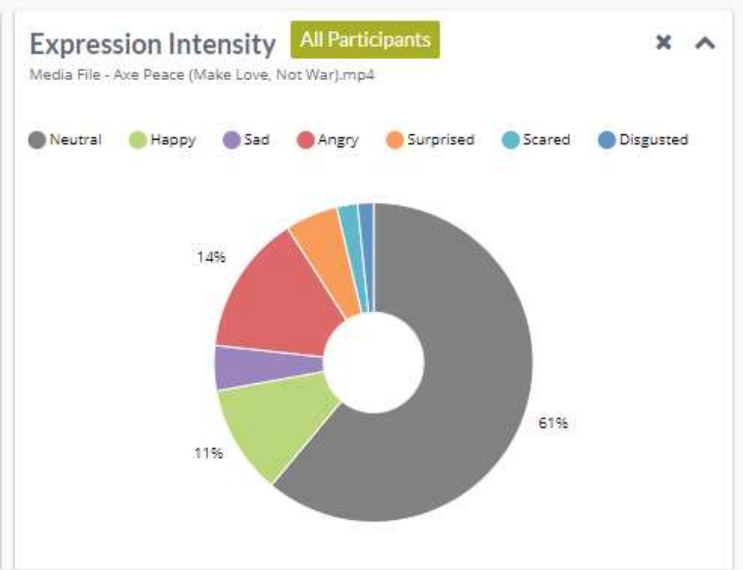
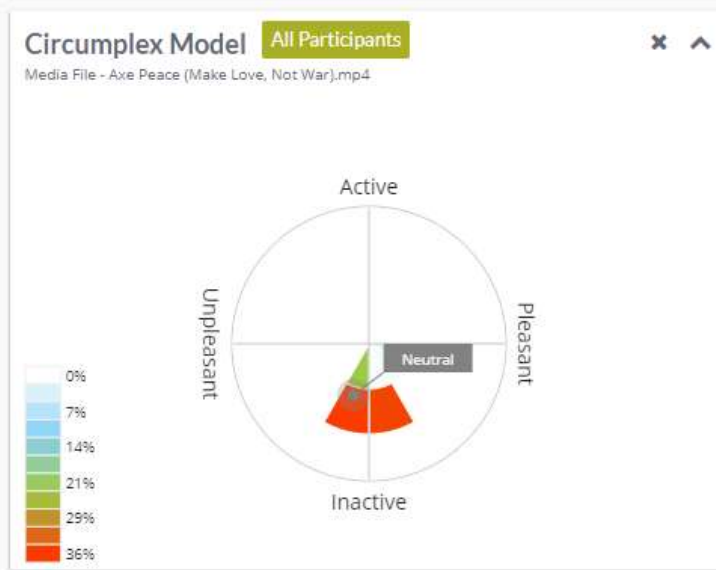
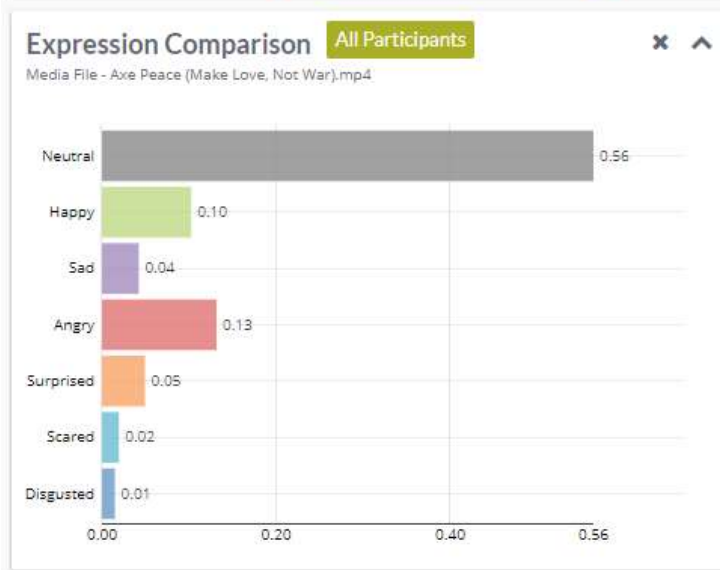
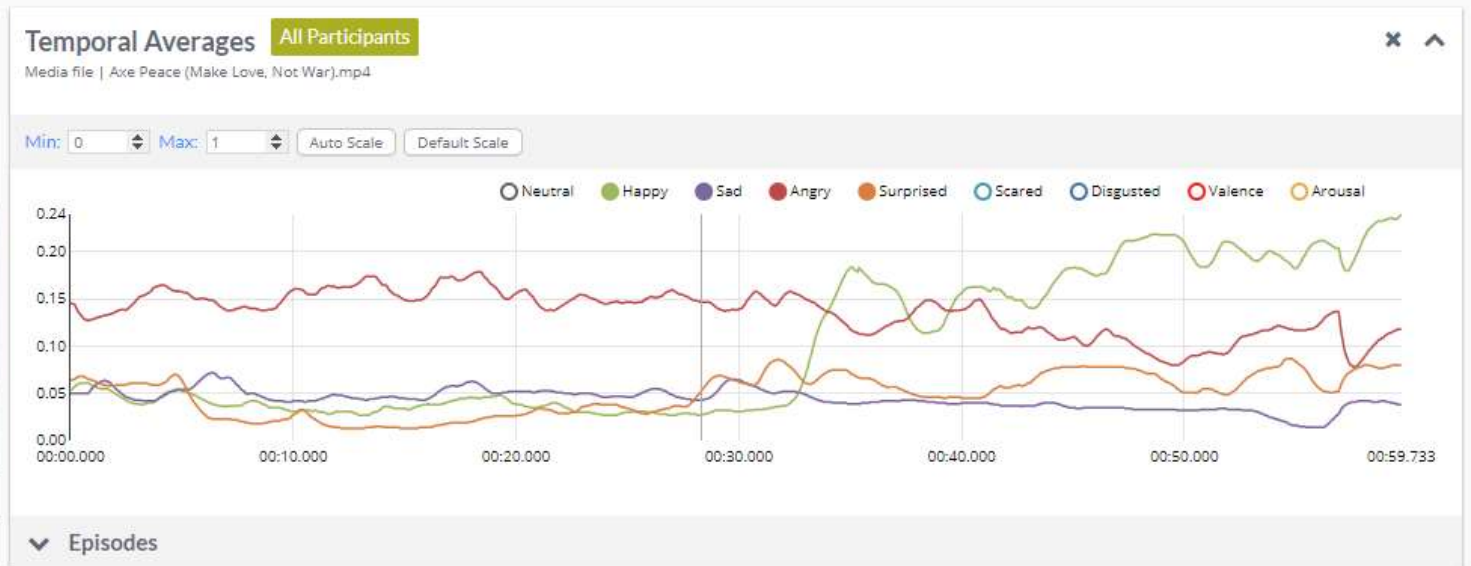


FaceReader Online – Emotions in Market Research

Media file

Axe Peace (Make Love, Not War).mp4

0:28 / 1:00





Case study: Predicting charity donations

Can we use emotion recognition to predict charity donations?



Experiment

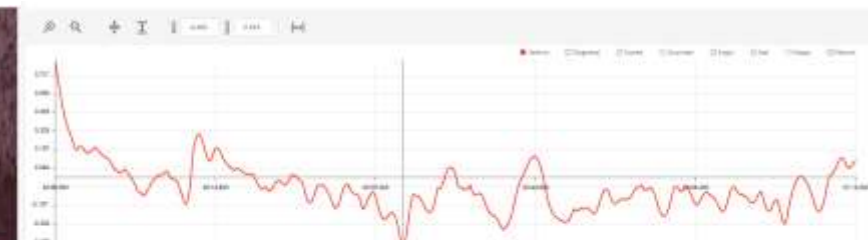
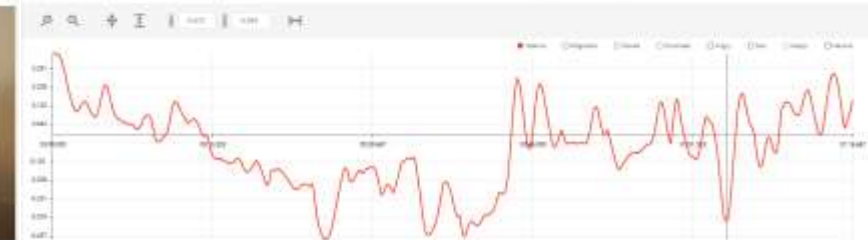
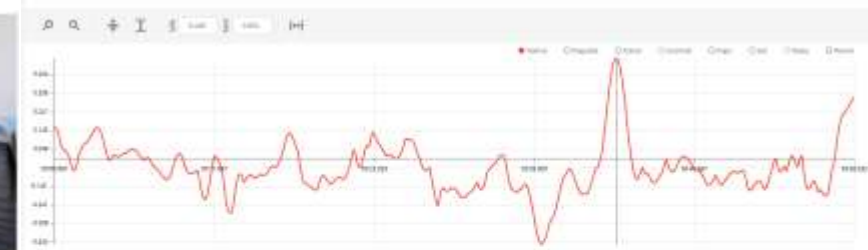
- Comparing two types of charity commercials:
 - Positive (hope)
 - Negative (suffering)
- *Which type receives the most donations?*

Approach

- 60 people analyzed using FaceReader Online

Results

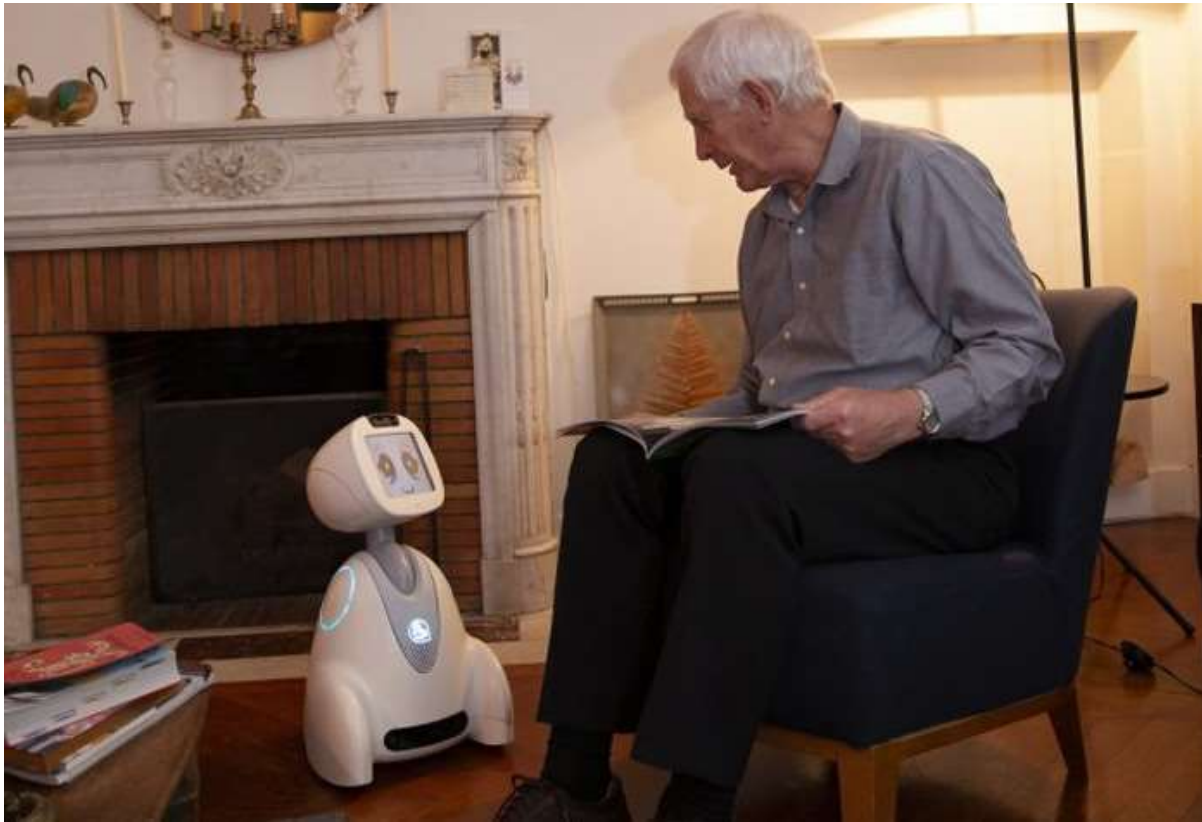
- Negative ads encouraged larger donations
- *Higher sad expression → higher inclination to donate*





FaceReader in a social robot companion | Buddy-BeWell

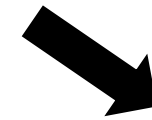
Prevent mental health problems with lifestyle changes



Measure emotions to provide timely advice and interventions



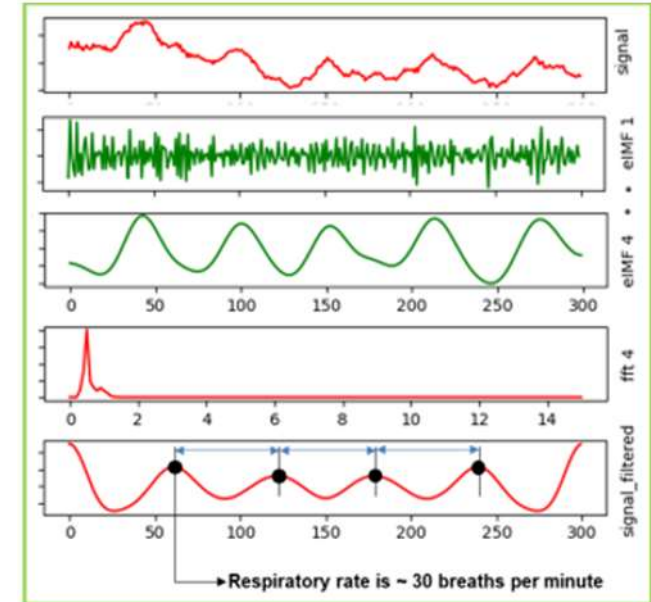
**BLUE
FROG**
THE ROBOT COMPANY





Monitoring babies with FaceReader | BabySensor

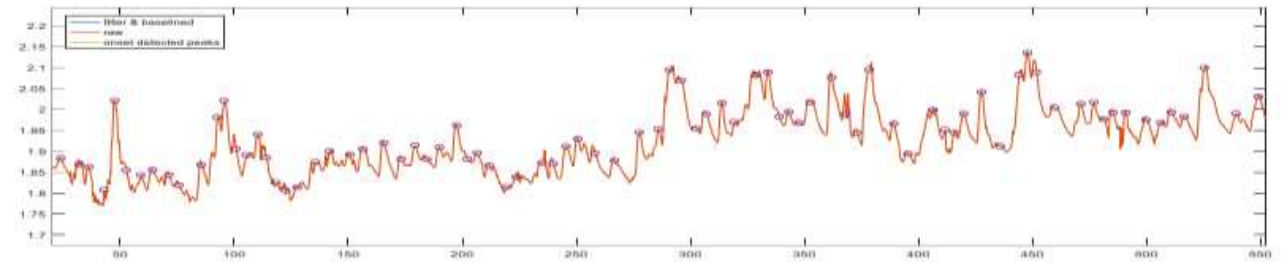
Estimate baby wellbeing using vital signs, facial and vocal cues





Stress measurement for simulation and training in marine context

Improve training with AI to prevent shipping accidents





Creating a Responsible AI Sales Policy

Emotion recognition and ethical sales

Trigger event

- In 2019 we got a wake-up call to include ethics in our business process
- Started creating an AI Act compatible sales policy

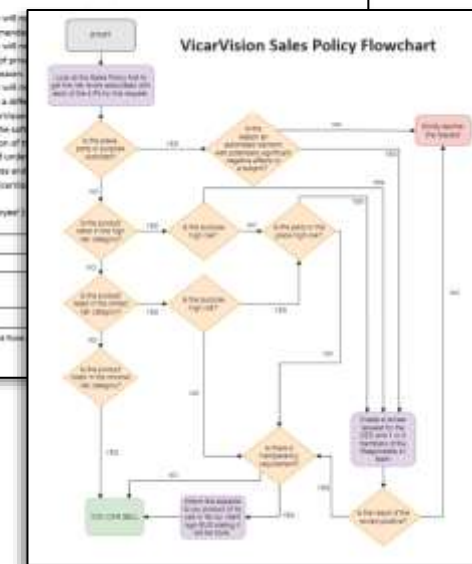
Sales policy

Use 4P's to assess all sales requests:

- The **P**roduct
- The **P**arty that is requesting the product
- The **P**lace where the party is located
- The **P**urpose for which the party wants to use the product

Risk categories

- Restricted:
 - Never allowed
- High-Risk:
 - Can be allowed after internal review
- Limited Risk:
 - Allowed, but might require an end-use statement



And then there was an amendment...

Emotion recognition ban

AI systems to infer emotions of a natural person in areas of workplace and education are banned

Exceptions

- AI for medical or safety reasons are exempted
- Ban does not apply to scientific research and R&D

Consequences

- Training and simulation applications (MORSE) not allowed?
- How will EU funding be affected?

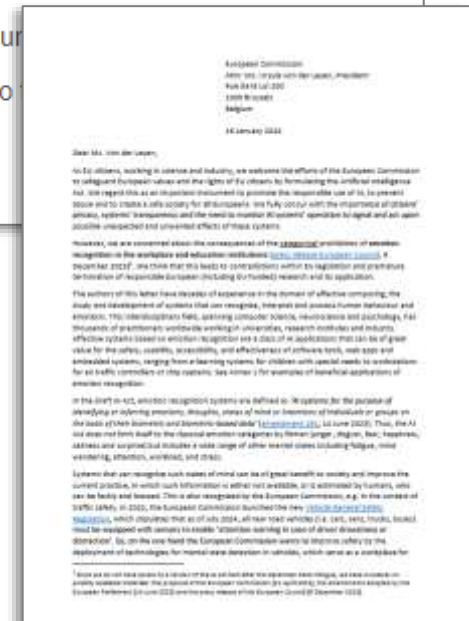
Pushback

- Researchers have united to realize last-minute changes to the legislation
- So far 121 signatories for the EC letter
- Are the guidelines our last chance...?

Banned applications

Recognising the potential threat to citizens' rights and democracy posed by certain applications of AI, the co-legislators agreed to prohibit:

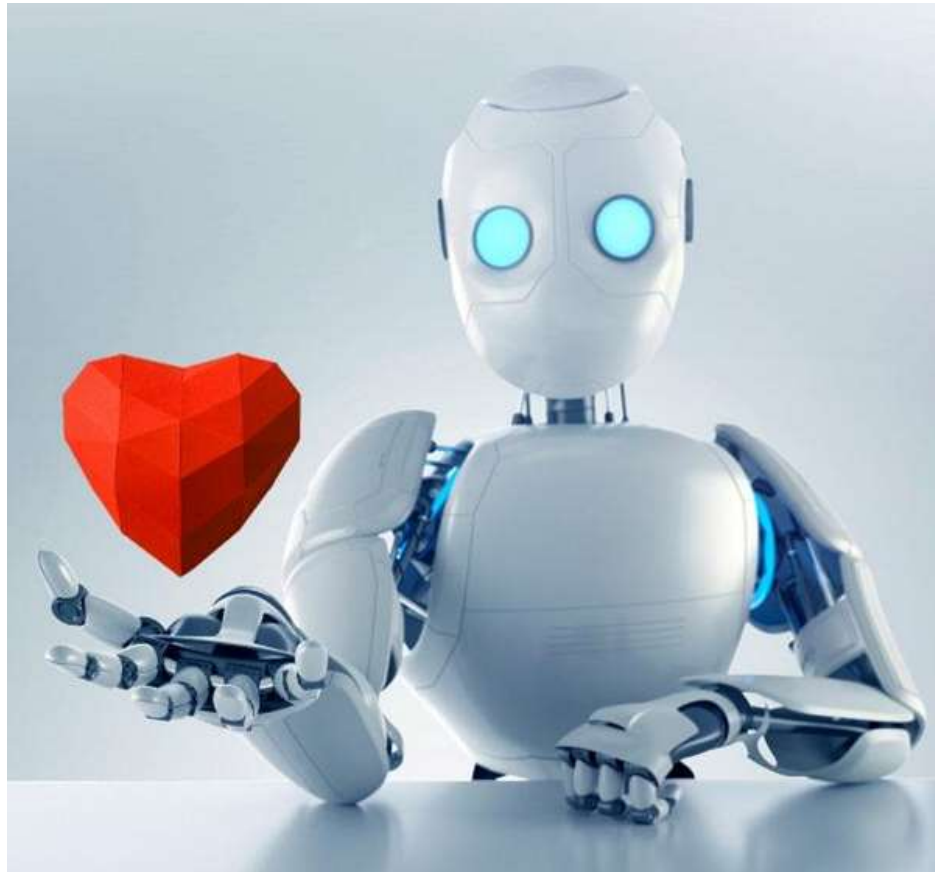
- biometric categorisation systems that use sensitive characteristics (e.g. political, religious, philosophical beliefs, sexual orientation, race);
- untargeted scraping of facial images from the internet or CCTV footage to create facial recognition databases;
- **emotion recognition in the workplace and educational institutions;**
- social scoring based on social behaviour or personal characteristics;
- AI systems that manipulate human behaviour to circumvent legal requirements;
- AI used to exploit the vulnerabilities of people (due to economic situation).





Responsible AI – AI Principles

We develop responsible AI technology that is:



Human-Centric

We design technology that works for people, not against them

Fair:

Our algorithms are fair with minimal bias.

Privacy friendly:

Privacy protection is embedded in the design of our technology

Transparent:

Our algorithms and motives are overtly explainable.

Secure:

We safeguard all data entrusted with us.

Competent

We design technology according to up-to-date standards



Fair Face Dataset for Balanced Race, Gender, and Age

- Face image dataset containing 108,501 images balanced on race.
- Seven (7) groups were identified: Black, Indian, East Asian, Southeast Asian, Middle Eastern, Latino, and White.
- Images collected from the YFCC-100M Flickr dataset and labeled with race, gender, and age groups.
- Evaluations were performed on existing face attribute datasets as well as novel image datasets to measure the generalization performance.

Karkkainen, K., & Joo, J. (2021). FairFace: Face Attribute Dataset for Balanced Race, Gender, and Age for Bias Measurement and Mitigation. In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (pp. 1548-1558)





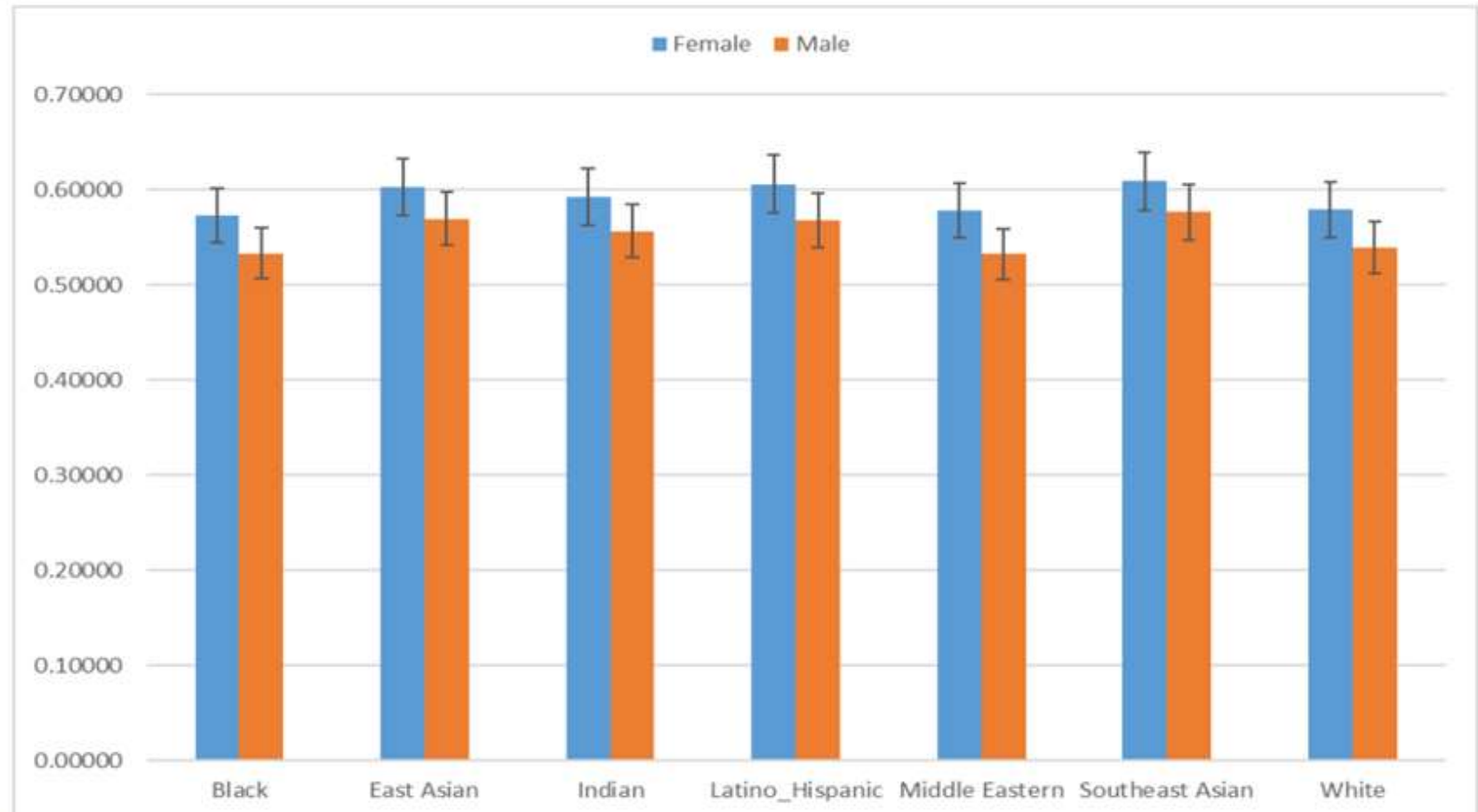
Fairness in facial expression analysis | Results

Investigating gender/ethnic differences in model quality

Percent of images by gender:

- Female: 47%
- Male: 53%

	Average Quality
Female	0.59137
Black	0.57222
East Asian	0.60270
Indian	0.59213
Latino_Hispanic	0.60553
Middle Eastern	0.57765
Southeast Asian	0.60859
White	0.57873
Male	0.55226
Black	0.53274
East Asian	0.56939
Indian	0.55635
Latino_Hispanic	0.56730
Middle Eastern	0.53208
Southeast Asian	0.57604
White	0.53930





Fairness in facial expression analysis | Conclusions

Research conclusions

- As hypothesized, no differences were found in ethnicity with regards to model quality, facial expressiveness, or valence.
- Overall, women tended to show more expressiveness and higher valence, but this was irrespective of ethnicity.
- FaceReader 9's automated facial expression analysis is not biased for or against any ethnicity.





Questions?

Thank you for your attention!

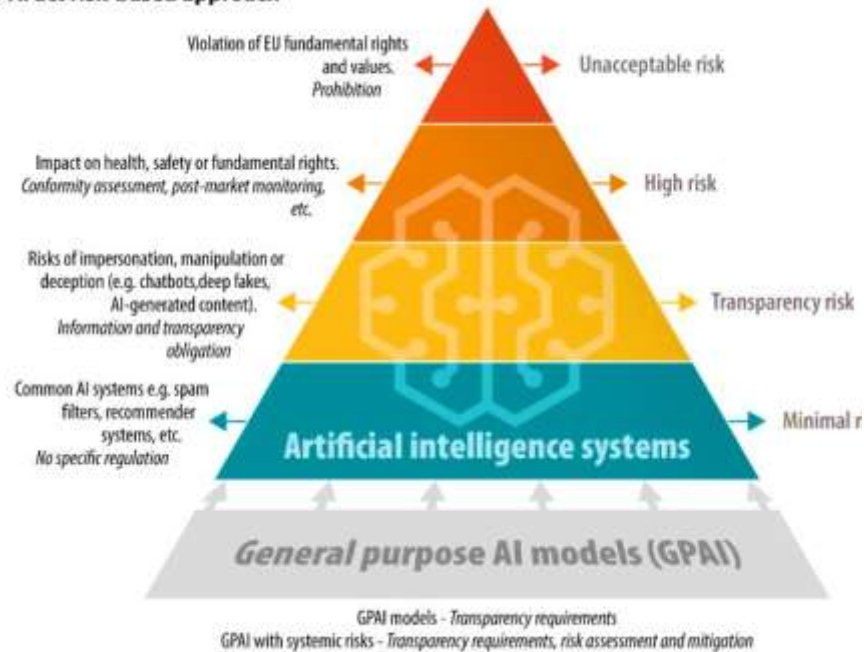


Contact me at
tim@vicarvision.nl

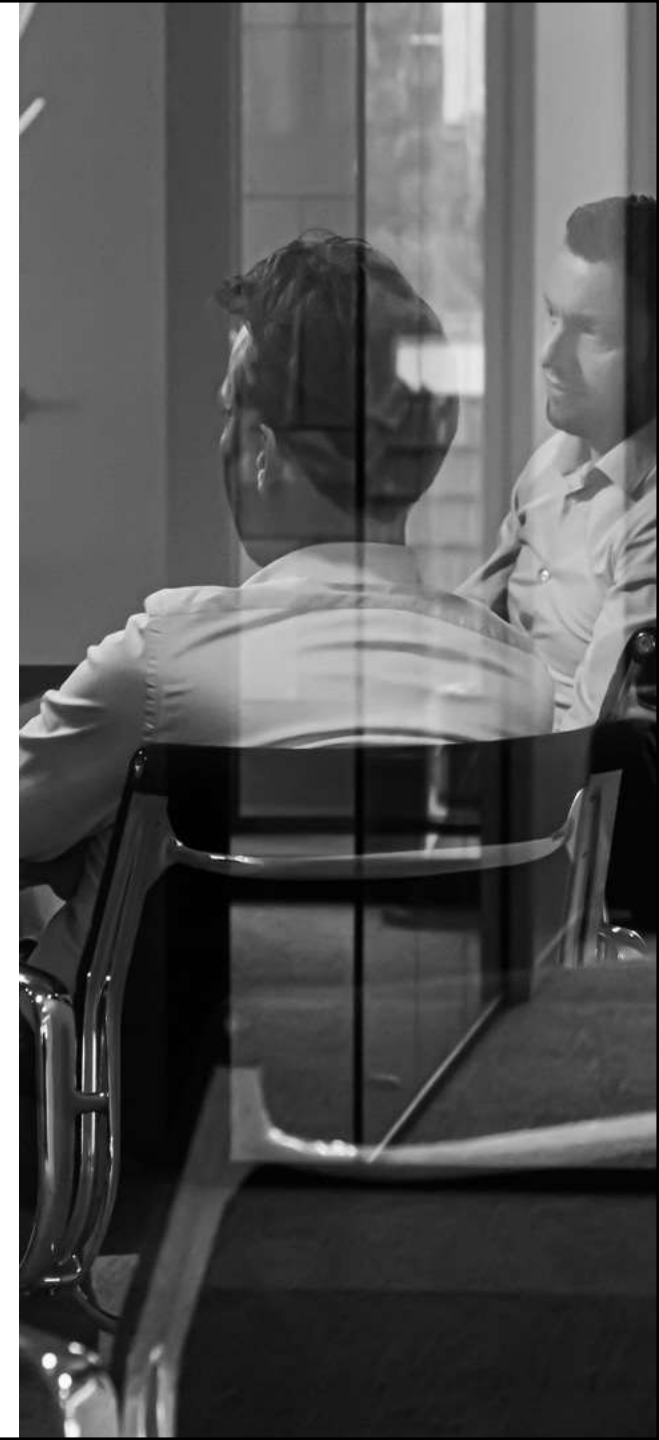
AI regelgeving

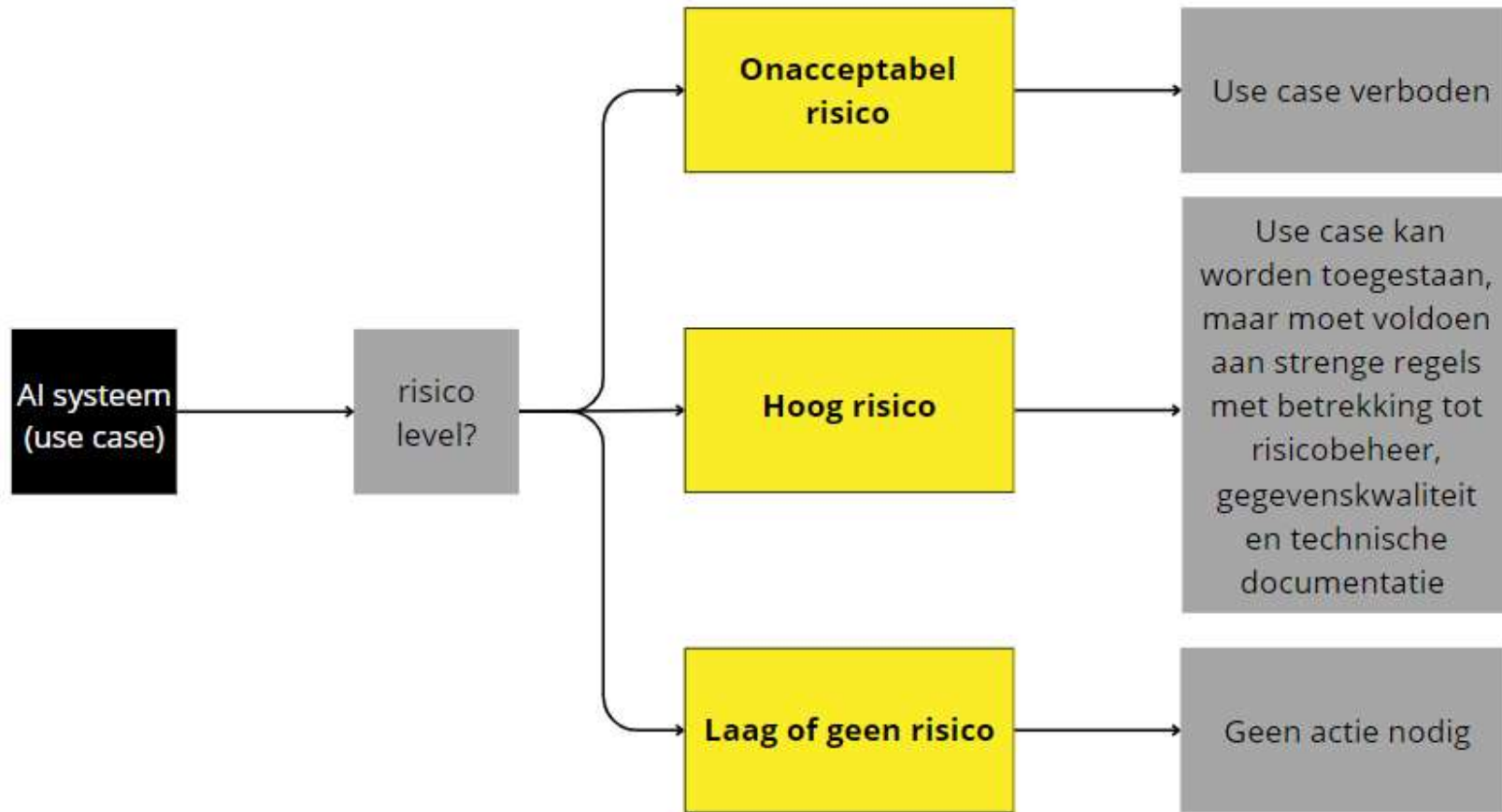


EU AI act risk-based approach



Data source: [European Commission](#)





Wat bieden wij?

AI Compliance

- AI Conformity assessment
- AI Policy
- Impact Assessment
Mensenrechten en Algoritmes
- AI Quick Scan



AI Awareness

- AI Boardroom Awareness sessie



🕒 06:00 pm (in your time zone)

EU AI Act Impact: Your Business
Game Plan now!

AI tools / informatie

- Checklist: Is AI Act op mij van toepassing
- Checklist: Is deze high risk AI toepassing compliant
- 10 stappen AI compliance



1. Risk Management System



2. Data en Data Governance



3. Technical Documentation



4. Traceability



5. Human Oversight



6. Accuracy, Robustness en Security



7. Quality Management System



8. EU Declaration of Conformity



9. CE Marking



10. Registration

Vragen? Neem contact op met wijst@bg.legal

Deze checklist is gemaakt op basis van de **compromis- versie** van de AI Act

Ons team



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Jubileum agenda 2024

datum volgt

Arbeidsrecht: wat houdt HR vandaag de dag bezig?

20 juni

Ondernemings -en Insolventierecht: Aan tafel!

Ronde tafelgesprek met Jermaine de Rosario en Jack Welten

3 oktober

BG.legal Jubileumborrel

7 november

Vastgoedrecht seminar



**Dankjewel
voor uw
aandacht!**



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