



DATA ETHICS: SOCIO-ETHICAL VALUES

Sustainable Technology = Sustainable Cities?

EFC Funders' Forum on Sustainable Cities Annual Conference

Innovation, Technology and Big Data for a Sustainable Impact on
Communities and Cities

Turin, October 16, 2019 | Matthias Spielkamp



/ ALGORITHMWATCH

AlgorithmWatch is a not-for-profit organisation with the aim to evaluate and shed light on algorithmic decision making processes that have a relevance to society – meaning they are used either to predict or prescribe human action or to assist or make decisions automatically.



/ HOW DO WE FRAME THE ISSUE?

- Automated decision-making (ADM) instead of “AI”
- Algorithmically controlled, automated decision-making or decision support systems are procedures in which decisions are initially—partially or completely—delegated to another person or corporate entity, who then in turn use automatically executed decision-making models to perform an action.



/ HOW DO WE FRAME THE ISSUE?

- ADM systems are always sociotechnical systems
- By saying systems instead of technologies we point to the fact that we need to take a holistic approach here: an ADM system, in our use of the term, is a socio-technological framework that encompasses a decision-making model, an algorithm that translates this model into computable code, the data this code uses as an input—either to ‘learn’ from it or to analyse it by applying the model—and the entire political and economic environment surrounding its use.



/ OUR GOAL

- ADM systems that benefit individuals and society



/ AI AND SUSTAINABILTY

- Resource consumption

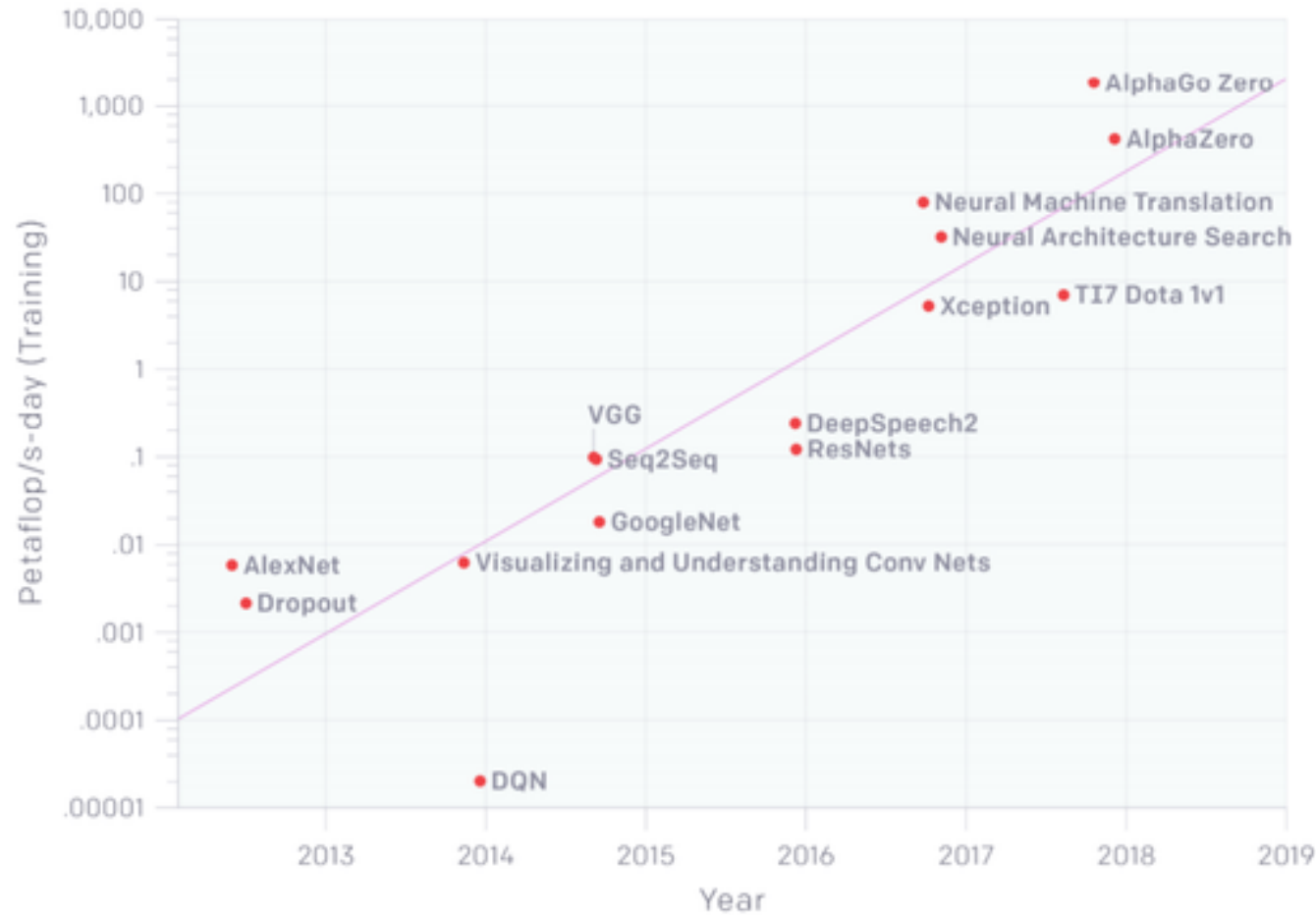


/ AI AND SUSTAINABILITY

- Green AI is research that improves results without ballooning computational costs (and even better if compute can be reduced). It encourages their peers in AI research to report the financial cost of developing, training, and running models, and want to use this “price tag” data to establish baselines and promote the development of more efficient AI methods. (Greening AI | AI2 Initiative)



AI AND SUSTAINABILITY



FLOPS:
floating point
operations per second

Petaflops: 10^{15}
1,000,000,000,000,000



/ AI AND SUSTAINABILITY

- Carbon dioxide emissions increase because of increasing use of ICT (information and communications technologies)
- Share of ICT of global “greenhouse potential”:
2.1% in 2010 => 23% in 2030
- Raw material consumption



AI AND SUSTAINABILITY

- GOAL 3: Good Health and Well-being
- GOAL 4: Quality Education
- GOAL 5: Gender Equality
- GOAL 6: Clean Water and Sanitation
- GOAL 7: Affordable and Clean Energy
- GOAL 8: Decent Work and Economic Growth
- GOAL 9: Industry, Innovation and Infrastructure
- GOAL 10: Reduced Inequality
- GOAL 11: Sustainable Cities and Communities
- GOAL 12: Responsible Consumption and Production
- GOAL 13: Climate Action



/ ADM IN EVERYDAY LIFE



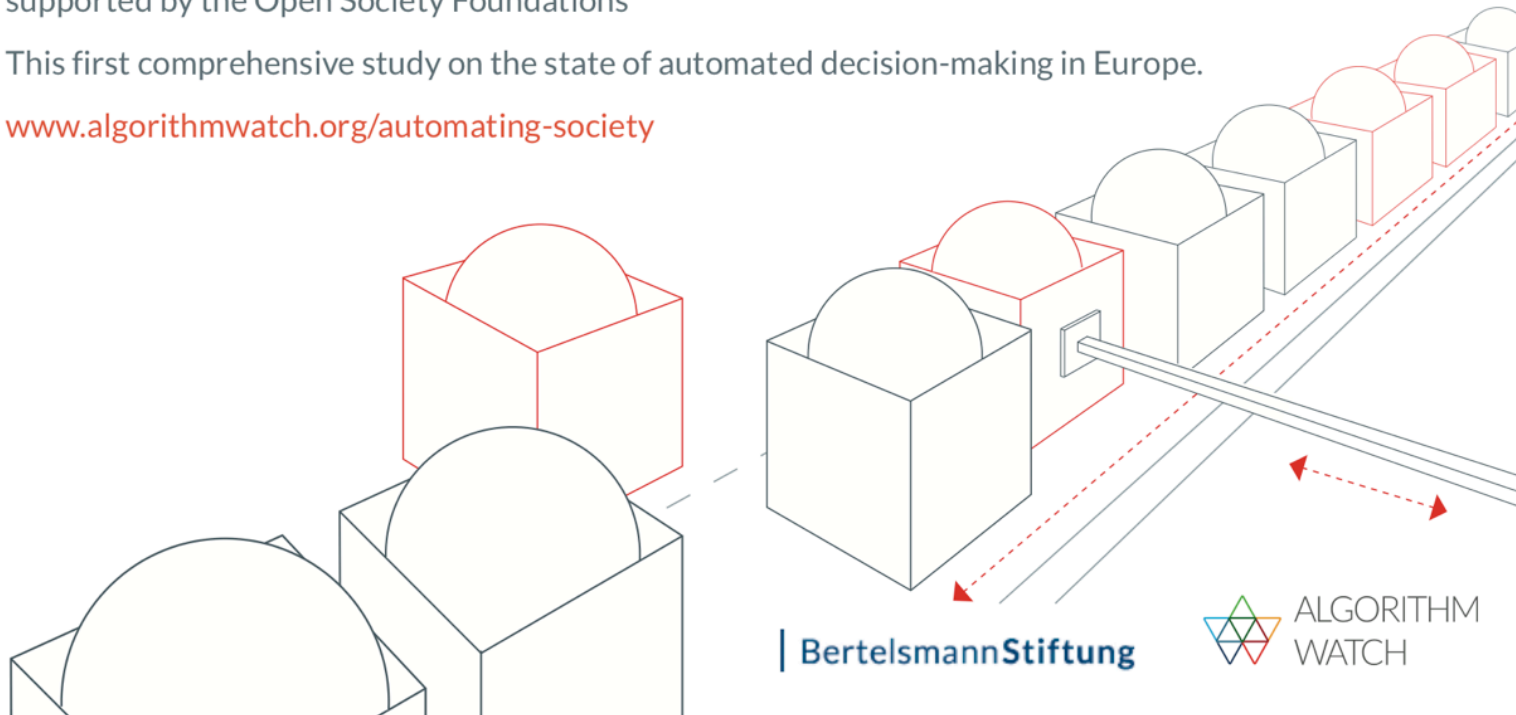
Automating Society

Taking Stock of Automated Decision-Making in the EU

A report by AlgorithmWatch in cooperation with Bertelsmann Stiftung, supported by the Open Society Foundations

This first comprehensive study on the state of automated decision-making in Europe.

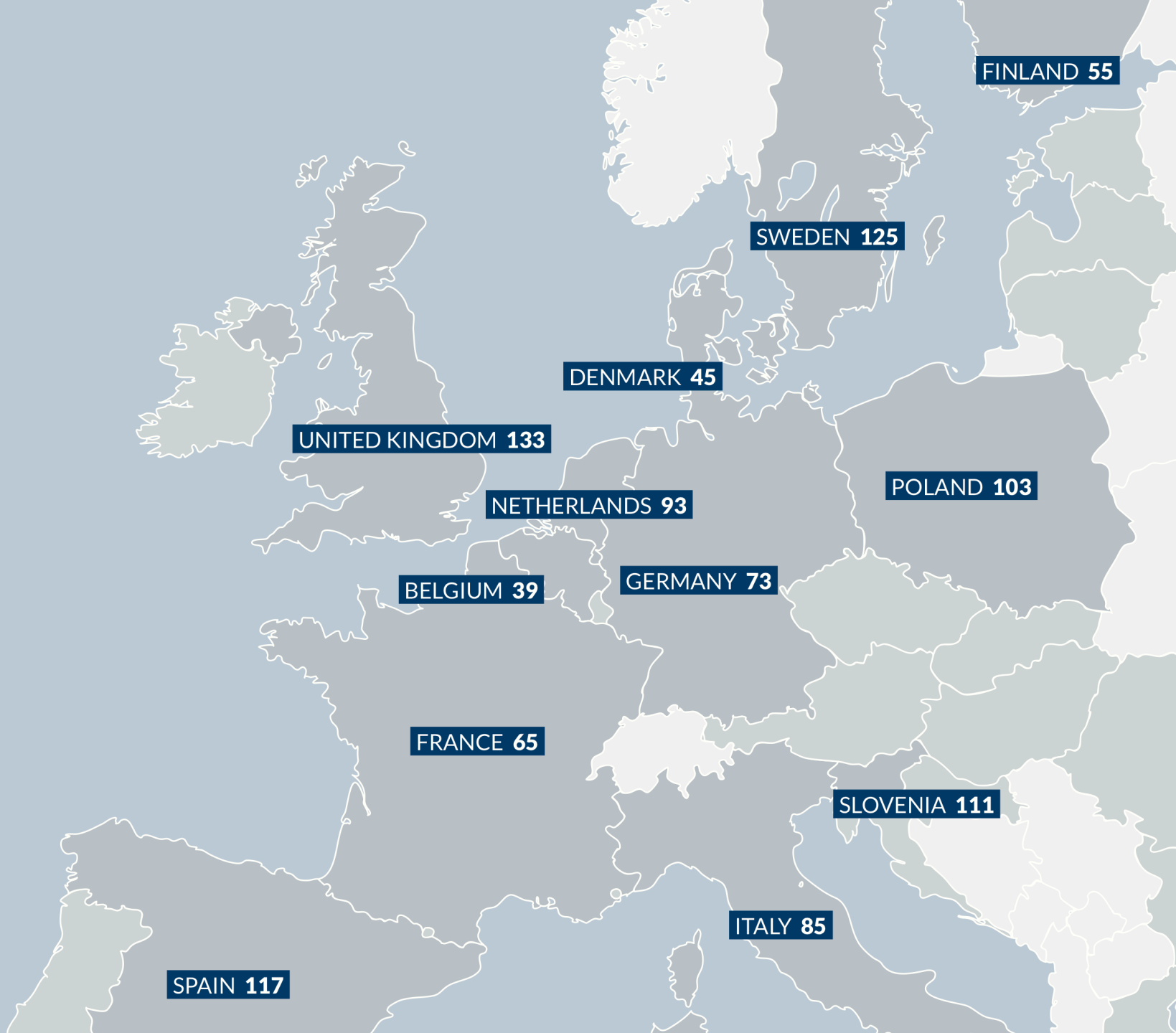
www.algorithmwatch.org/automating-society





WHY THIS REPORT?

- The examples we usually use to discuss it are mainly from the US or China – risk assessment of criminals, “death by algorithm” in the health sector, social scoring etc.
- The situation is different in the EU, for legal and cultural reasons, but this does not mean that ADM does not exist – quite the contrary



/ 15 researchers from
12 countries



/ ADM IS WIDELY USED FOR DIFFERENT PURPOSES

- identifying children vulnerable to neglect in Denmark
- allocating treatment for patients in the public health system in Italy
- detecting welfare fraud in the Netherlands
- allocating benefits to the unemployed in Poland
- detecting learning problems in primary and secondary schools to help teachers find "problematic" pupils in Slovenia
- assigning social benefits in Sweden
- predictive policing in many EU Member States



/ RESULTS

- Awareness is lacking
- Oversight is inadequate



/ SPECIAL RAPPOREUR ON EXTREME POVERTY AND HUMAN RIGHTS

- Thematic report to the UN General Assembly on digital technology, social protection and human rights:
- Digital technologies are employed in the welfare state to surveil, target, harass and punish beneficiaries, especially the poorest and most vulnerable among them.



/ BOB – BEWARE OF BULSHIT



/ BOB

- The #REDD-Chain Project (RCP) is a pioneering forest management initiative [...]. The project addresses challenges by deploying the 'disruptive technology troika' of IoT, DLT (Distributed Ledger Technology, aka 'blockchain'), and AI. In combination, and coupled with standardized and framework-conform processes, the application of these technologies leads to a new 'forest finance ecosystem', offering dramatically improved MRV, much reduced administrative costs, and considerably improved incentivizing.



/ SustAIIn

- AI Sustainability Index
- proposal to German Ministry for the Environment



THANK YOU!