

Digital MasterClass

Kantonsrat Zürich

Die digitale Verwaltung: Was kann sie, was darf sie?

Zürich, 20. Januar 2025

Prof. Abraham Bernstein Ph.D,

Informatikprofessor & Direktor Digital Society Initiative, Universität Zürich

Prof. Dr. iur. Nadja Braun Binder, MBA,

Professorin für Öffentliches Recht, Universität Basel

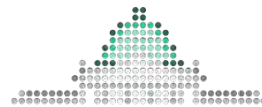
Eine Veranstaltung von:



**Universität
Zürich** ^{UZH}

Digital Society Initiative

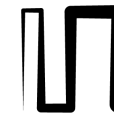
Partner:



Parldigi

Unterstützt durch:

DIZH



**Stiftung
Mercator
Schweiz**



**Universität
Zürich** UZH

Digital Society Initiative



An Introduction to Artificial Intelligence Science Fiction vs. Science Fact

Abraham Bernstein

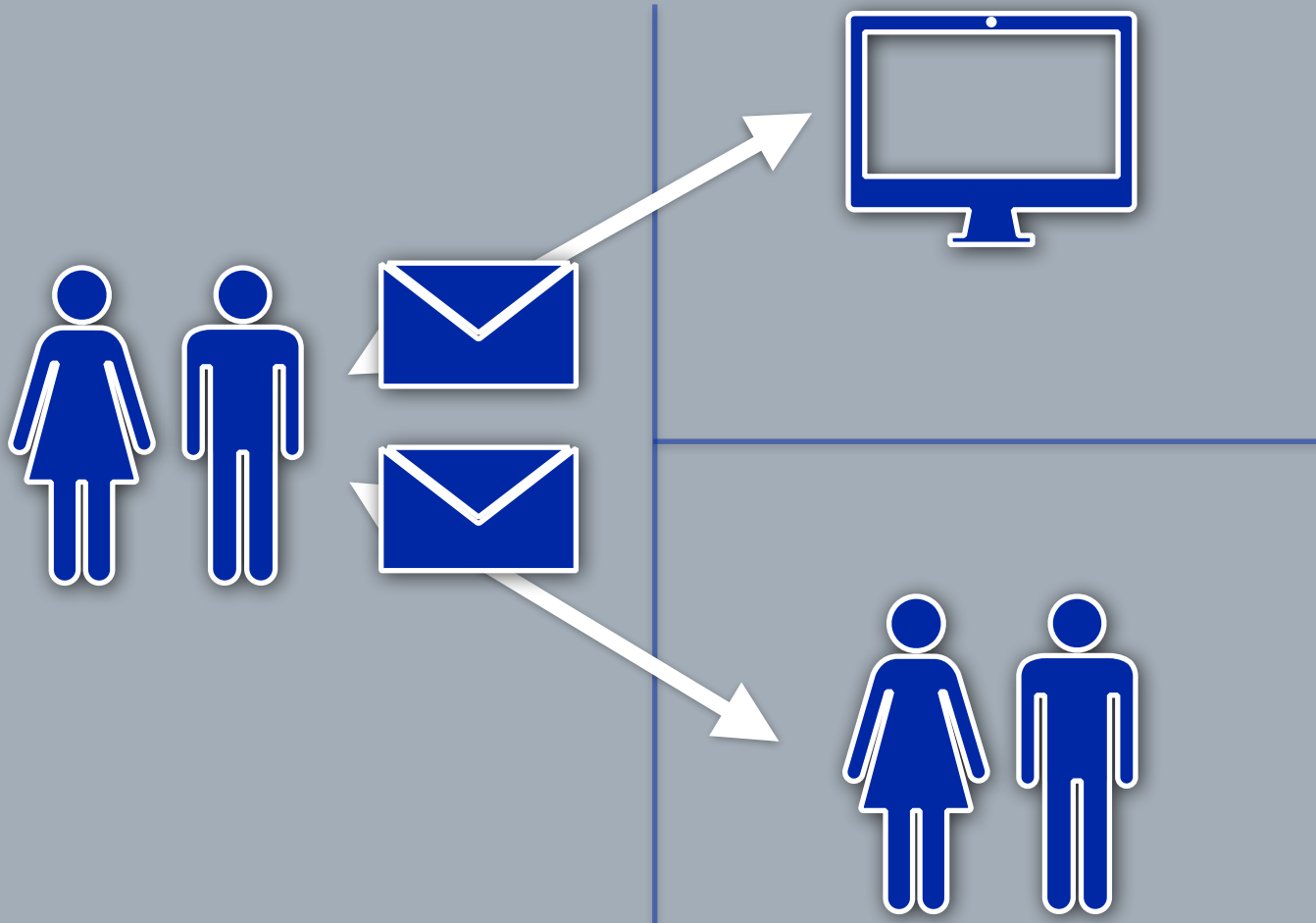


Universität
Zürich^{UZH}

Digital Society Initiative

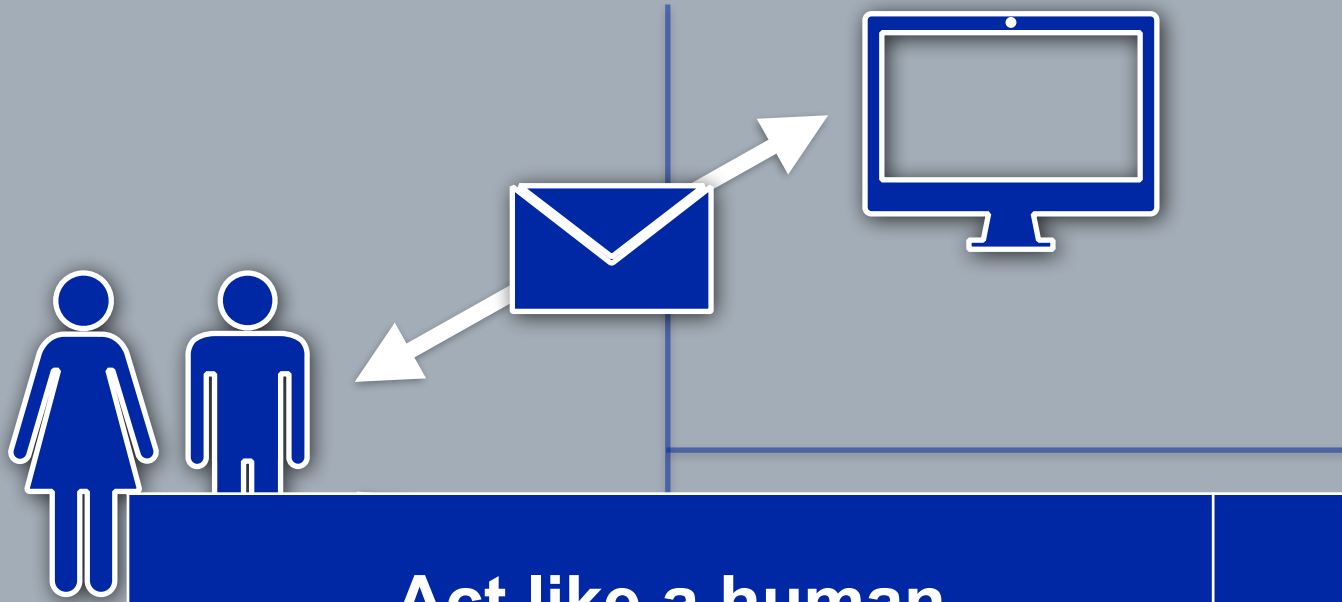


Turing Test





Turing Test



Act like a human

Act rationally

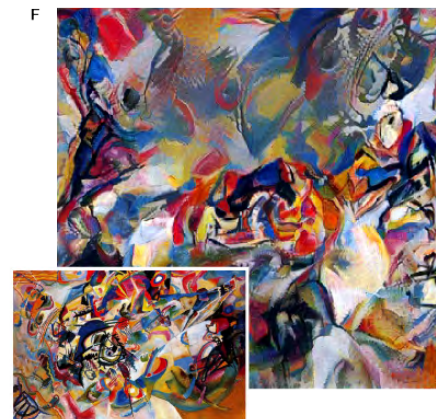
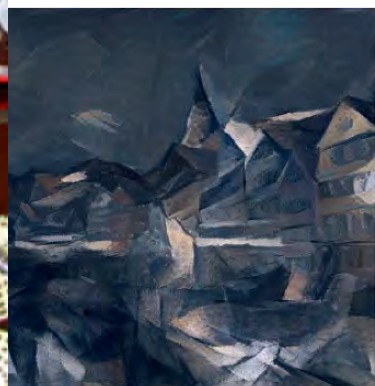
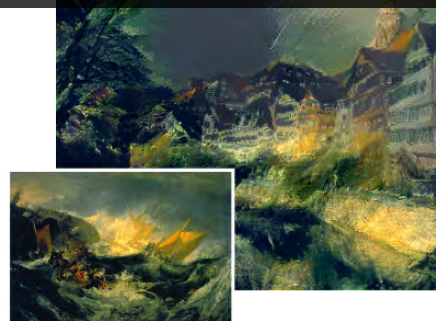
Turing Test
Can I simulate human action?

Can I build a rational machine?

Deduction



Induction

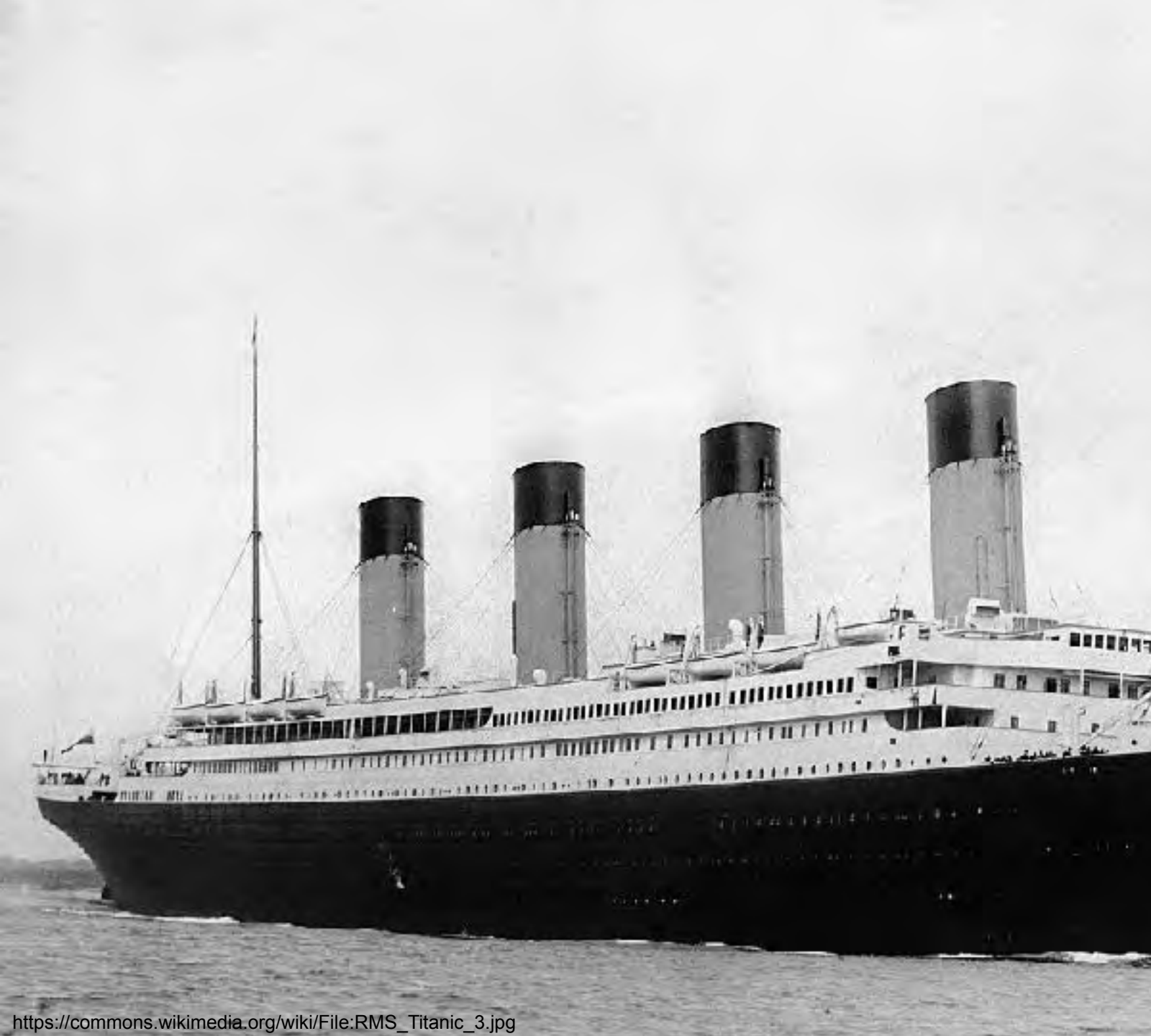


Analogy



Inductive Reasoning

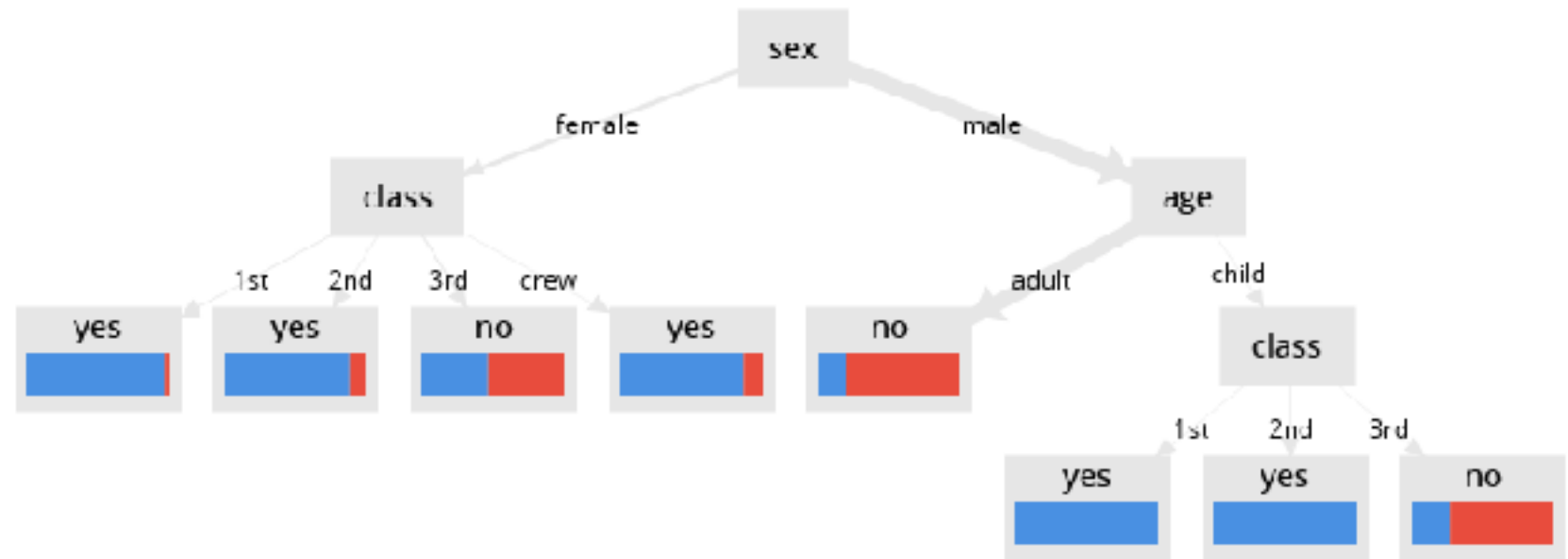




Passenger	class	age	sex	survived
1	1st	adult	male	yes
2	1st	adult	male	yes
3	1st	adult	male	yes
4	1st	adult	male	yes
5	1st	adult	male	yes
...
2194	crew	adult	female	yes
2195	crew	adult	female	yes
2196	crew	adult	female	yes
2197	crew	adult	female	yes
2198	crew	adult	female	yes
2199	crew	adult	female	no
2200	crew	adult	female	no
2201	crew	adult	female	no

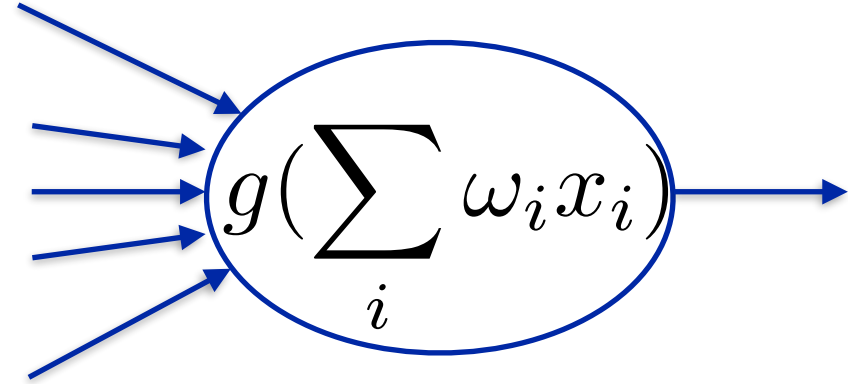
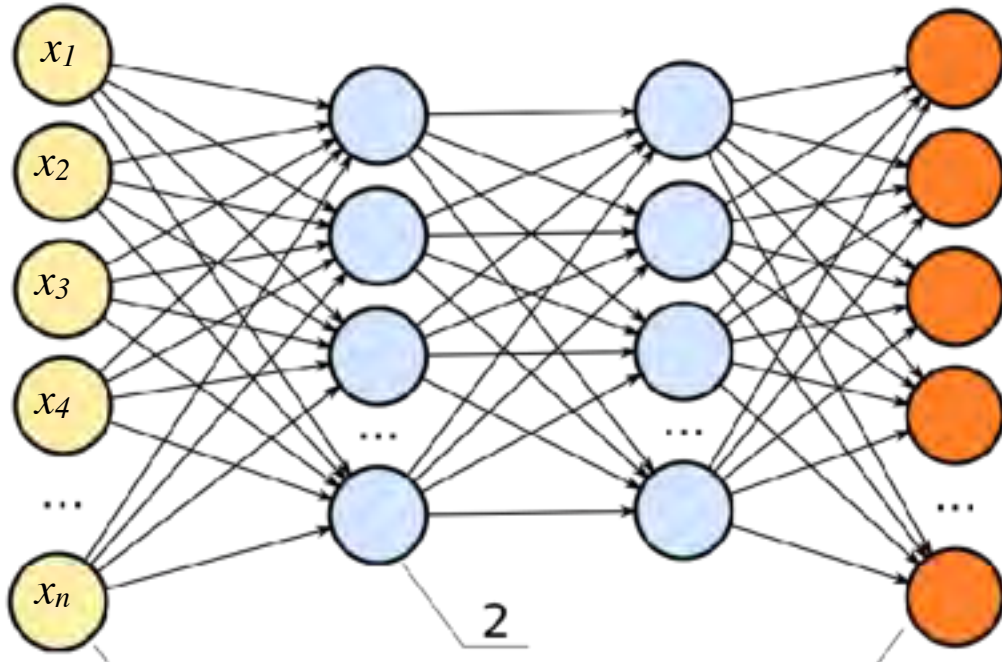


Split Data Based on Interestingness: Decision Trees





Get Inspired by Nature: Neural Networks

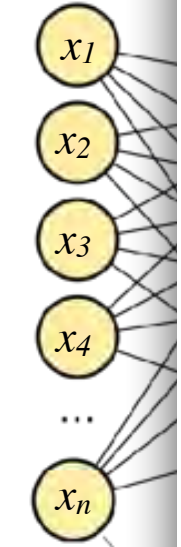
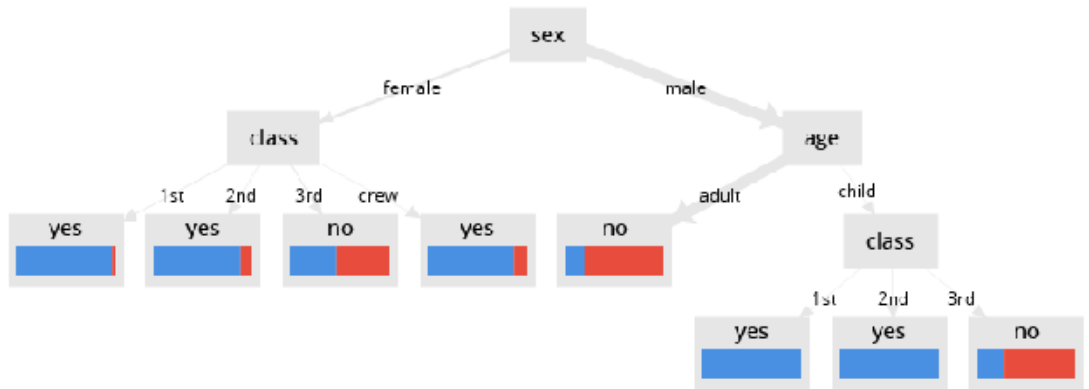


$$y_i = \omega_0 + \omega_1 x_{1,i} + \dots + \omega_n x_{n,i} + \epsilon_i$$





Transparency?



```

Node 1 (Sigmoid)
-----
class = crew: 0.309
age = adult: 0.796
sex = male: 2.422
Bias: -4.122
Node 2 (Sigmoid)
-----
class = 1st: 1.690
class = 2nd: 2.374
class = 3rd: -0.947
age = adult: -2.100
age = child: 2.109
sex = male: 0.518
sex = female: -0.534
Bias: -2.113
Node 2 (Sigmoid)
-----
class = 1st: 2.339
class = 2nd: 1.930
class = 3rd: 0.574
class = crew: -0.088
age = adult: 0.702
age = child: -0.736
sex = male: 1.361
sex = female: -1.336
Bias: -2.412
Node 3 (Sigmoid)
-----
class = 1st: -2.793
class = 2nd: -3.056
class = 3rd: 5.963
class = crew: -1.880
age = adult: 1.930
age = child: -1.902
sex = male: 2.504
sex = female: -2.546
Bias: 0.811
Node 4 (Sigmoid)
-----
class = 1st: 1.040
class = 2nd: 1.941
class = 3rd: 4.920
Node 5 (Sigmoid)
-----
class = 1st: -1.015
class = 2nd: 3.839
class = 3rd: -1.629
class = crew: 3.143
age = adult: 1.828
age = child: -1.782
sex = male: -0.188
sex = female: 0.189
Bias: -2.219
Node 6 (Sigmoid)
-----
class = 1st: 0.845
class = 2nd: 3.572
class = 3rd: -0.611
class = crew: -0.521
age = adult: -0.322
age = child: 0.312
sex = male: 0.540
sex = female: -0.610
Bias: -1.616
Class 'no' (Sigmoid)
-----
Node 1: -2.034
Node 2: 0.605
Node 3: 3.760
Node 4: 1.499
Node 5: 1.194
Node 6: 0.555
Threshold: -3.439
Class 'yes' (Sigmoid)
-----
Node 1: 2.034
  
```


Question #1

How transparent and understandable do decisions need to be??



Die Bundesversammlung – Das Schweizer Parlament
Curia Vista – Die Geschäftsdatenbank

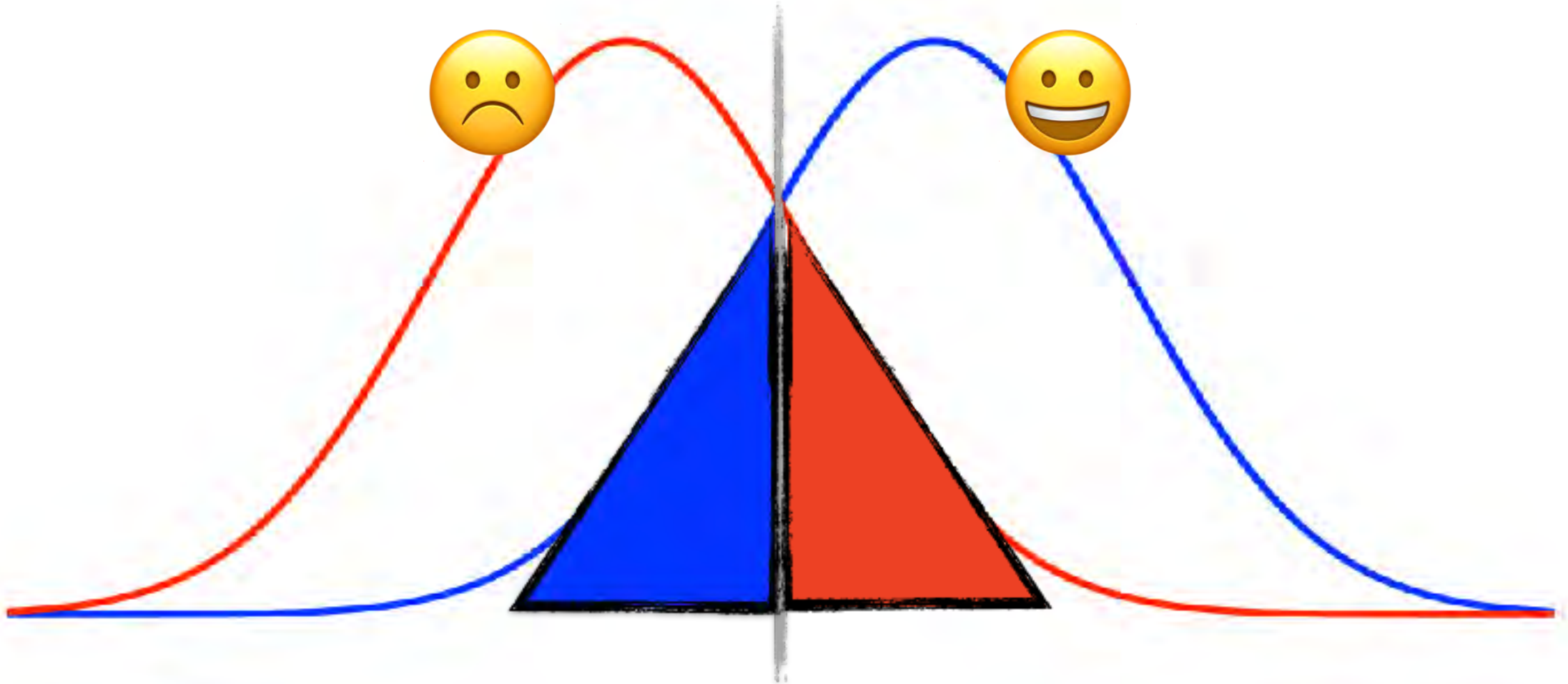
19.498 Parlamentarische Initiative

Öffentliche und transparente Abstimmungen im Ständerat

Eingereicht von: Minder Thomas
Fraktion der Schweizerischen Volkspartei
parteilos



Correct?



Question #2

How correct does AI need to be?



Patients who got this treatment also had the following treatments ...



Universität
Zürich^{UZH}

Digital Society Initiative



Bias?



Chicago Daily Tribune

November 3, 1948

Dewey Defeats Truman

Thomas Dewey

Harry S Truman

Question #3

What kind of bias is acceptable?

Where is the threshold between acceptable bias and discrimination?

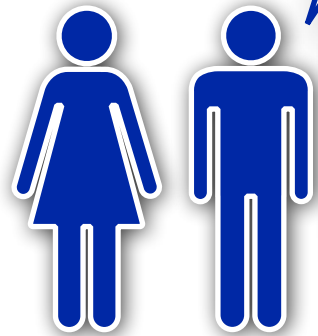
Deductive Reasoning

PHOENIX





Reasoning with Knowledge



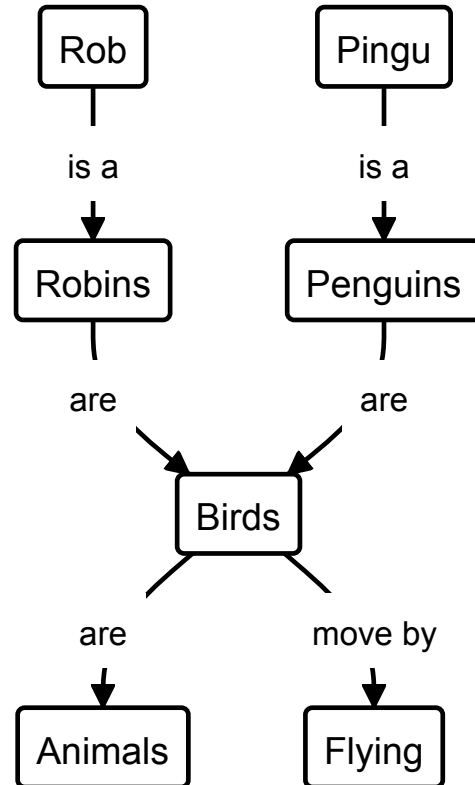
Can Robins fly?

Yes!

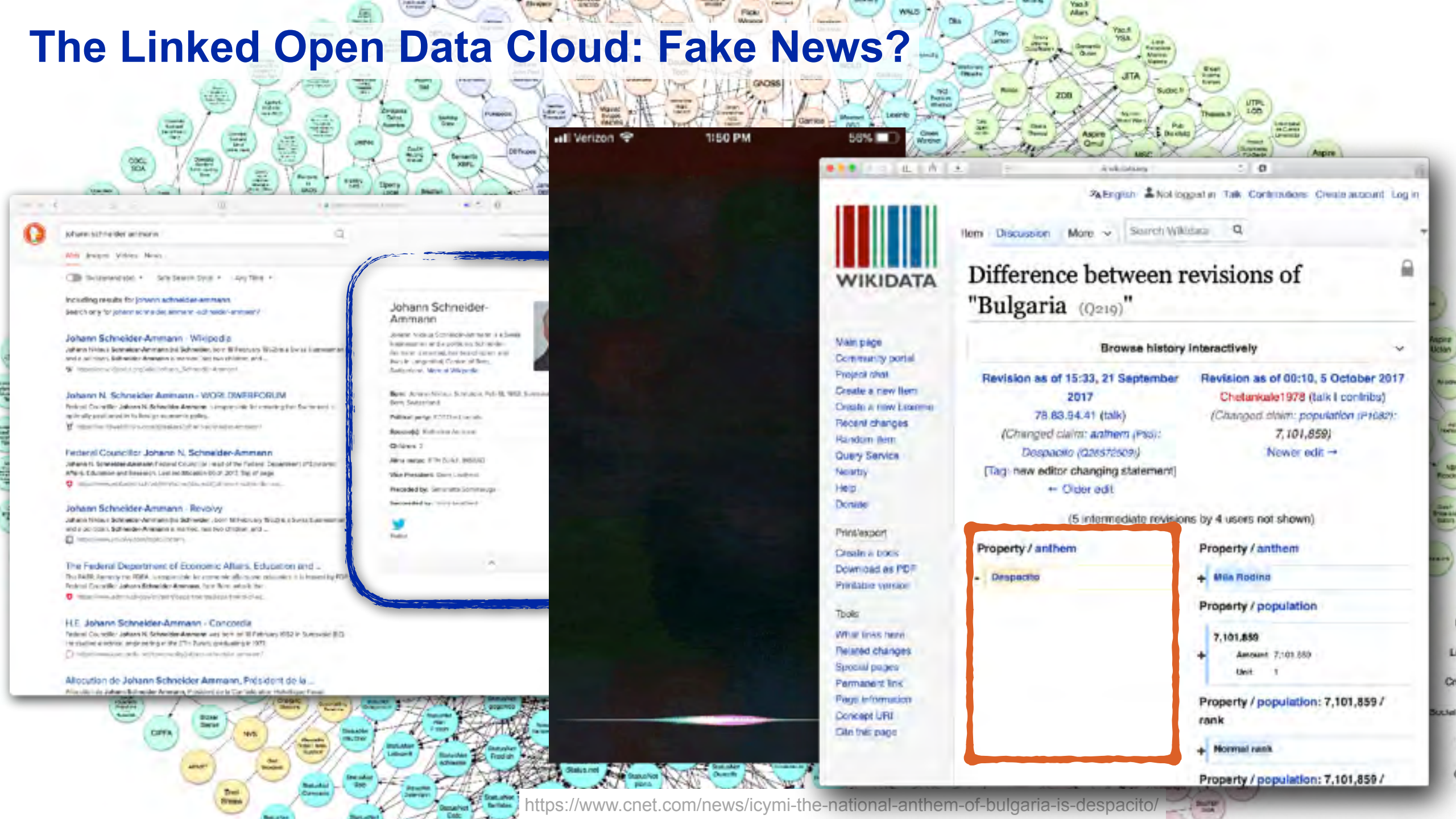
Robins are Birds,
Birds move by Flying.

**Inference
Engine**

Knowledge Base



The Linked Open Data Cloud: Fake News?



Search results for Johann Schneider-Ammann

Johann Schneider-Ammann - Wikipedia
Johann Nikolaus Schneider-Ammann (in German; born 18 February 1952) is a Swiss politician and a member of the Swiss People's Party. He has been a member of the Swiss Council of States since 2015.

Johann N. Schneider Ammann - WORDSWERFORUM
Federal Councillor Johann N. Schneider Ammann is responsible for creating the framework for the Swiss government's policy.

Federal Councillor Johann N. Schneider-Ammann
Johann N. Schneider-Ammann, Federal Councillor / head of the Federal Department of Economic Affairs, Education and Research. Last last modified on 2017. Top of page

Johann Schneider-Ammann - Revolvy
Johann Nikolaus Schneider-Ammann (in German; born 18 February 1952) is a Swiss politician and a member of the Swiss People's Party. He has two children and ...

The Federal Department of Economic Affairs, Education and ...
The FDFA, formerly the DFA, is responsible for economic affairs. It is headed by Federal Councillor Johann Schneider-Ammann. For more, visit our ...

H.E. Johann Schneider-Ammann - Concordia
Federal Councillor Johann N. Schneider-Ammann was born on 18 February 1952 in Sutz-Lattrigen (VD). He studied economics and graduated in 1975. He has been a member of the Swiss Council of States since 2015.

Allocution de Johann Schneider Ammann, Président de la ...
Allocution de Johann Schneider Ammann, Président de la Confédération suisse.

Verizon 1:50 PM 58%

Twitter

Facebook

WIKIDATA

Difference between revisions of "Bulgaria (Q219)"

Browse history interactively

Revision as of 15:33, 21 September 2017	Revision as of 00:10, 5 October 2017
78.83.94.41 (talk)	Chetankale1978 (talk contribs)
(Changed claim: anthem (P69): Despacito (Q26572609))	(Changed claim: population (P1082): 7,101,859)
[Tag: new editor changing statement]	Newer edit →
← Older edit	

(5 intermediate revisions by 4 users not shown)

Property / anthem	Property / anthem
- Despacito	+ Misa Rodina
	Property / population
	7,101,859
	+ Amount: 7:01,859
	Unit: 1
	Property / population: 7,101,859 / rank
	+ Normal rank
	Property / population: 7,101,859 /

Question #4

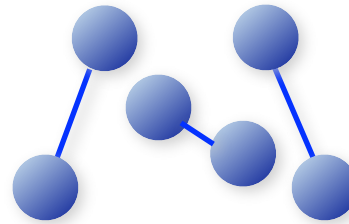
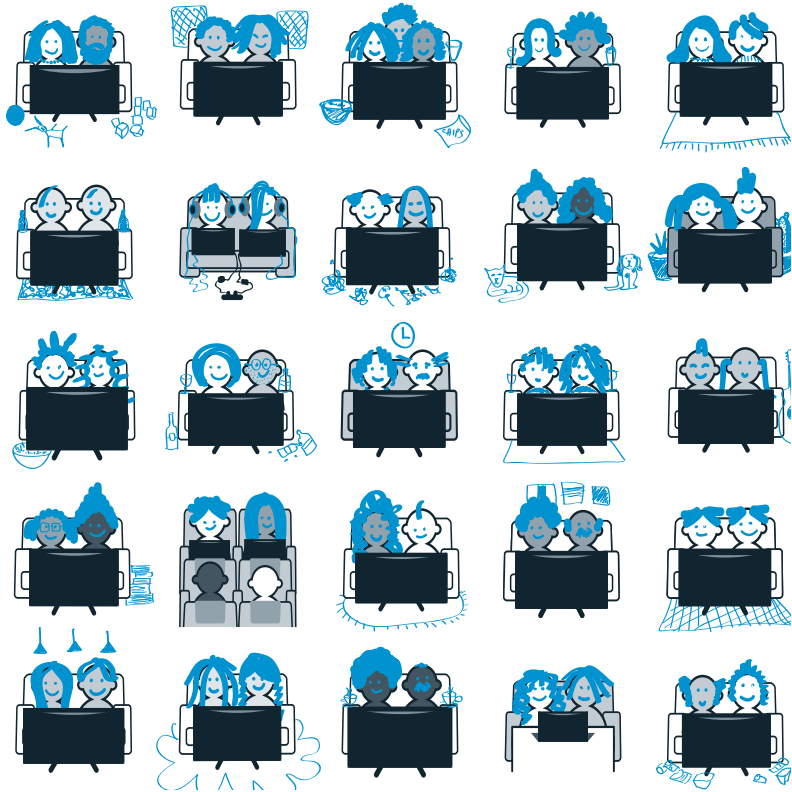
Who is accountable for mistakes?

Anallogical Reasoning



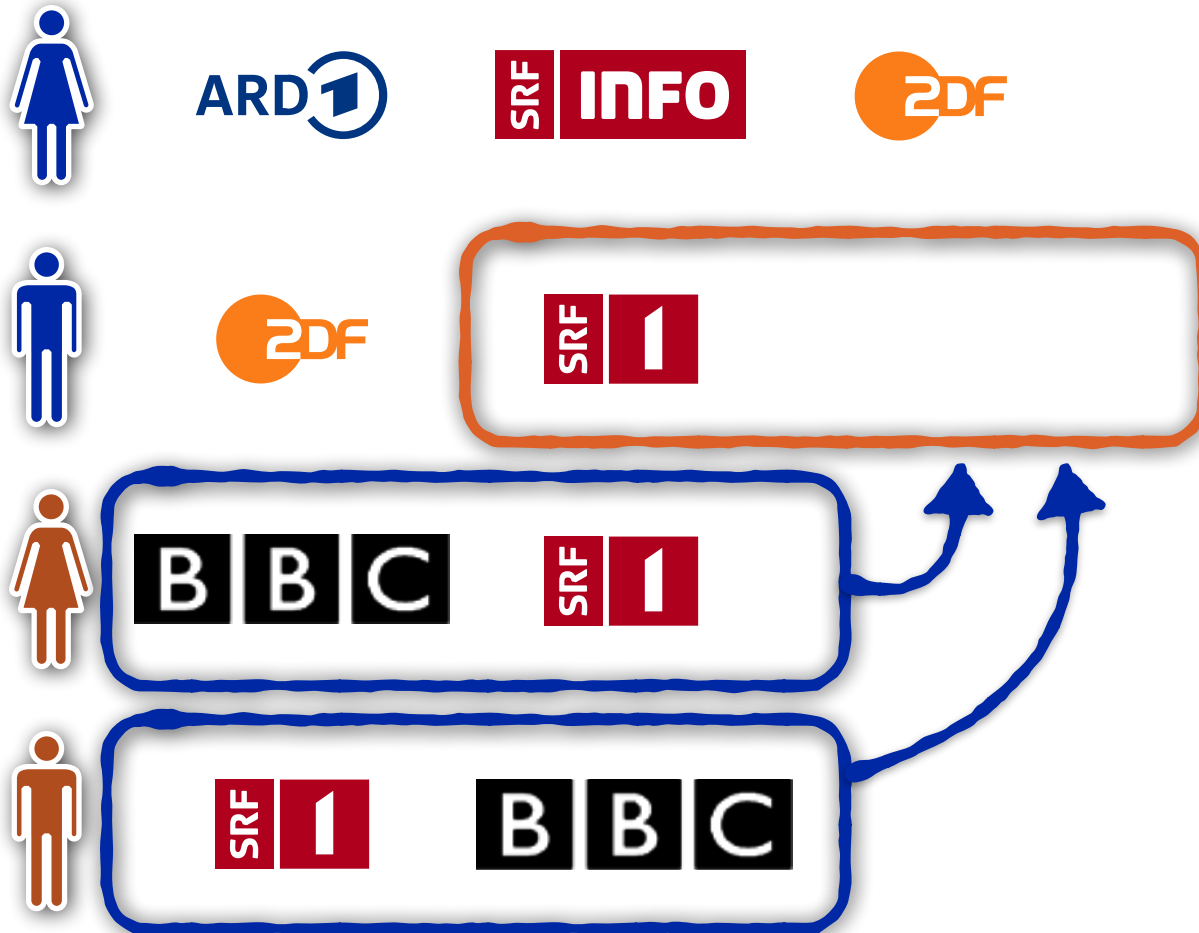


Watching TV ...



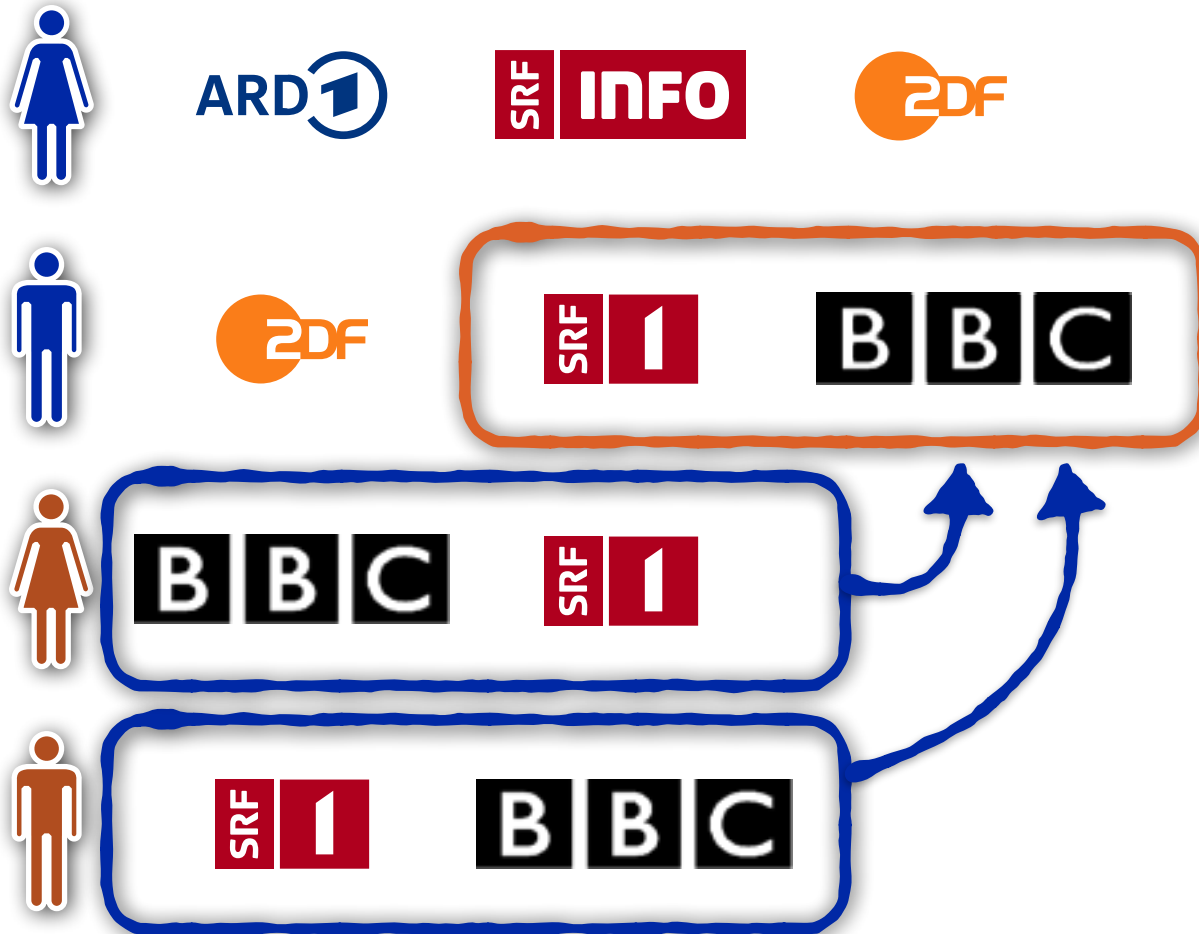


How do I reason with analogies?





How do I reason with analogies?



Question #5

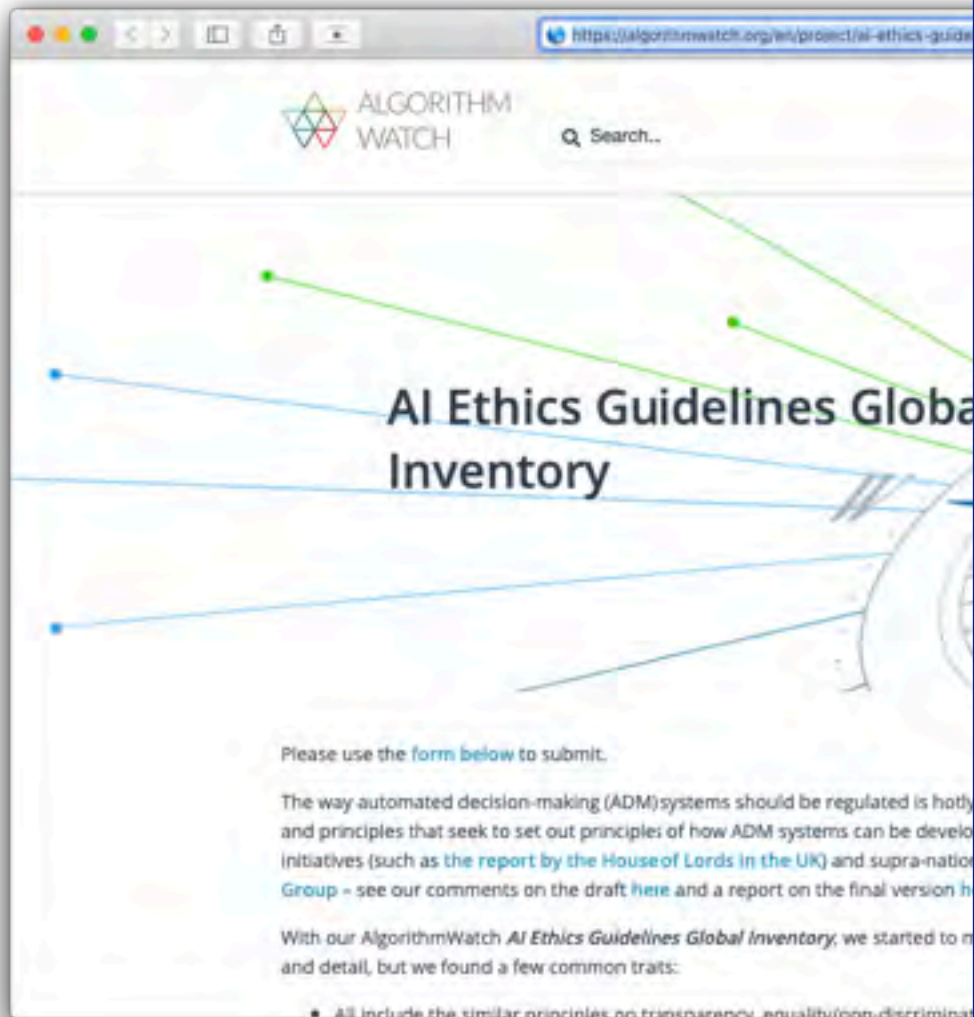
How do we identify desirable norms?

Question #6

How do we deal with cultural differences?



So how do we safeguard against these threats?



The way automated decision-making (ADM) systems should be regulated is hotly disputed. Recent months have seen a flurry of frameworks and principles that seek to set out principles of how ADM systems can be developed and implemented ethically. There are governmental initiatives (such as [the report by the House of Lords in the UK](#)) and supra-national efforts (such as [the EU commission's High Level Expert Group](#) – see our comments on the draft [here](#) and a report on the final version [here](#)). The private and civil sectors have also not been idle.

With our AlgorithmWatch **AI Ethics Guidelines Global Inventory**, we started to map the landscape of these frameworks. They vary in content and detail, but we found a few common traits:

- All include the similar principles on transparency, equality/non-discrimination, accountability and safety. Some add additional principles, such as the demand for AI be socially beneficial and protect human rights.
- Most frameworks are developed by coalitions, or institutions such as universities that then invite companies and individuals to sign up to these.
- Only a few companies have developed their own frameworks.
- Almost all examples are voluntary commitments. There are only three or four examples that indicate an oversight or enforcement mechanism.
- Apart from around 10 documents, all were published in 2018 or 2019 (some did not have a date).
- Overwhelmingly, the declarations take the form of statements, e.g. “we will ensure our data sets are not biased”. Few include recommendations or examples of how to operationalise the principles.

Our overview is certainly not complete; it is supposed to be a starting point. We assume there exist many more such guidelines that we are not aware of – due to our lack of language skills, or simply because they have not been widely announced.



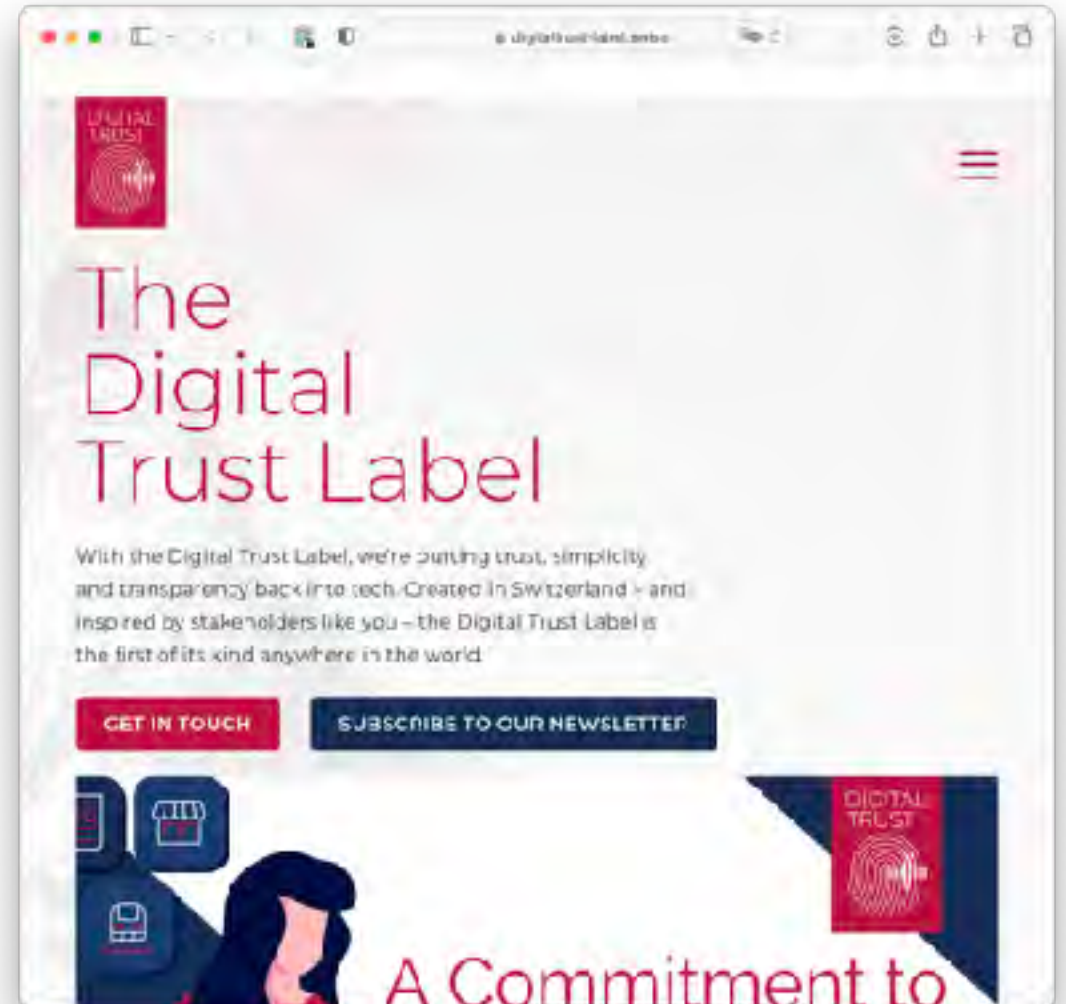
Examples for Industry (Self-)Regulation



The four promises to customers in Zurich's data pledge are to:

- Keep their data safe
- Never sell their personal data
- Not share their personal data without being transparent about it
- Put their data to work so Zurich can better protect them, and so they can get the most out of life.

<https://www.zurich.com/en/media/news-releases/2019/2019-0903-01>



<https://digitaltrust-label.swiss/>



A Swiss Legal Framework

- Switzerland is not bound by the EU's requirements and any Council of Europe requirements will give member states discretion to design their national solutions
- Switzerland develops its own legal framework

Mehr dazu im
nächsten Vortrag

<https://www.usc.edu/center-for-strategy-lab.html>

The cover of the position paper features the University of Zurich logo and the Digital Society Initiative branding. The title 'A Legal Framework for Artificial Intelligence' is prominently displayed. Below the title, there is a list of authors and a brief introduction to the paper's content and development process.

University of Zurich^{UZH}
Digital Society Initiative

Position Paper
A Legal Framework for Artificial Intelligence

The great technical advances in artificial intelligence (AI) and the use of these technologies in various areas raise fundamental questions about their impact on individuals and society. The term artificial intelligence sometimes evokes misleading associations and diffuse fears. From a technical perspective, it is an established collective term that encompasses a range of technologies that make automated decisions, recommendations, conclusions or predictions. AI includes knowledge-based systems, statistical methods and machine learning approaches (e.g., using neural networks). The high performance of these technologies is mainly based on the combination of a large number of mathematical optimizations that extract structures from significant amounts of data using large computing capacities.

To avoid misleading associations, we do not use the term AI in this position paper but rather speak of "algorithmic systems". This term does not refer to specific current or future technologies but to applying these technologies in a social context. The need for legal coverage only arises when technologies are used and affect individuals and/or society. The term "algorithmic systems" also allows us to cover applications with the same

Florent Thouvenin, Markus Christen, Abraham Bernstein, Nadja Braun Binder, Thomas Burri, Karsten Donnay, Lena Rieger, Mariela Jaffé, Michael Krauthammer, Melinda Lohmann, Anna Mätzener, Sophie Mützel, Liliane Obrecht, Nicole Rittler, Matthias Spiekamp, Stephanie Volt

This position paper was developed during a workshop held in Balsthal from 20–28 August 2021 and funded by the Strategy Lab of the Digital Society Initiative (DSI) at the University of Zurich. In addition to the authors of this paper, three representatives of the federal administration also participated in this workshop, namely Monique Cossali Saurvain (FDI), Roger Dubach (FDFA) and Thomas Schneider (DFCOM). They represent Switzerland in the Council of Europe Ad Hoc Committee on Artificial Intelligence (CAHA).

Further information: dsi.uzh.ch/strategy-lab

ciently—both in terms of precision (e.g., personalization) and quantity (scaling).

The European Commission published a proposal for a Regulation on Artificial Intelligence ("AI Act") on April 21, 2021, which will now be submitted to the Par-

Reflection

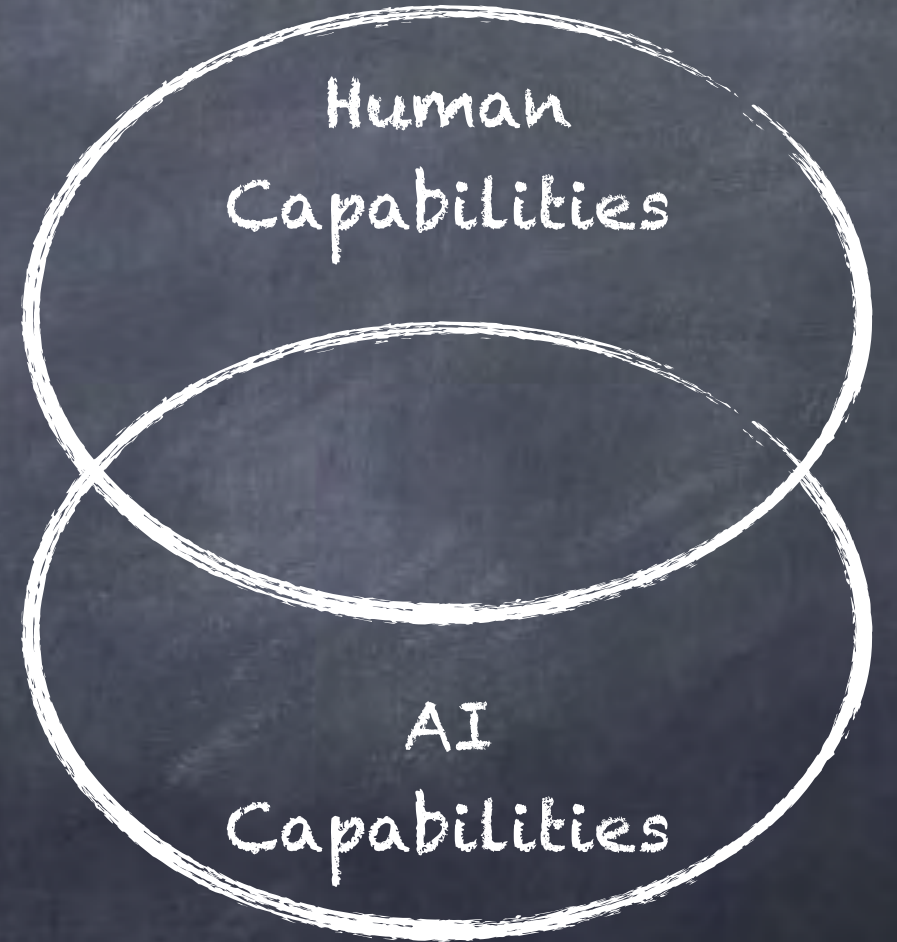
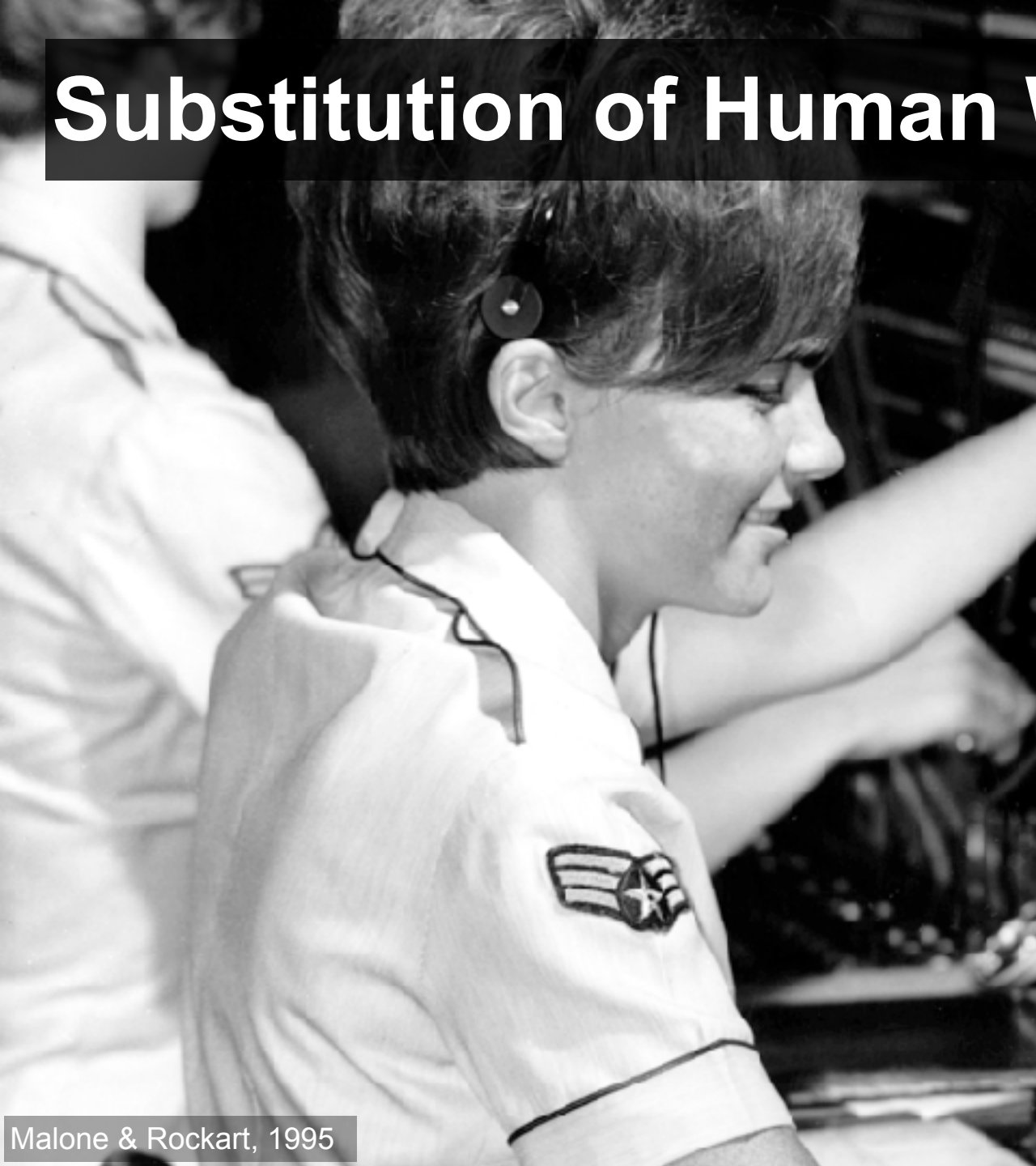
The core question here is
neither what is
nor what could be
but what should be.

Concluding Thought I

AI has huge potential!

Many AI challenges are not technical but organizational!

Substitution of Human Work



Substitution

Brynjolfsson et al '23 about *customer support agents*:

- **14% productivity increases** (issues resolved / hour)
- **34% improvement for novice & low-skilled workers**
- **durable learning**
- but with **minimal impact on experienced and highly skilled workers.**

Eloundou, et al. 2023:

- **science and critical thinking skills** are strongly negatively associated with exposure .. less likely to be impacted by current LLMs.
- Conversely, **programming and writing skills** show a strong positive association with exposure ...

Peng et al, 2023 (experimental study):

- **less experienced programmers benefit more**

Ziegler et al, 2024 (professional developers):

- Copilot **positively impacts productivity** (task time, quality, cognitive load, enjoyment) regardless of skill level
- Copilot **provides inspiration**/starting point for future exploration

Substitution of Human Work



Tomas Lawton, Francisco J Ibarrola, Dan Ventura, and Kazjon Grace. 2023. Drawing with Reframer: Emergence and Control in Co-Creative AI. In *Proceedings of the 28th International Conference on Intelligent User Interfaces (IUI '23)*. Association for Computing Machinery, New York, NY, USA, 264–277. <https://doi.org/10.1145/3581641.3584095>

Concluding Thought II

AI has huge potential!

How will you use it?

Substitutive, augmentative, or
transformative?



- Transparency
- Correctness
- Bias/Fairness
- Liability
- Privacy vs. Quality
- Cultural Differences
- Regulation?
- Usage Style



Die digitale Verwaltung: Was kann sie? Was darf sie?

Prof. Dr. Nadja Braun Binder

Digital Masterclass Kantonsrat ZH, 20.01.2025

Agenda

- 1 Ausgangslage
- 2 KI – Herausforderungen für die kantonale Verwaltung
- 3 Rechtsetzungsbedarf identifizieren
- 4 Fazit

1. Ausgangslage



Principles of administrative law concerning relations between individuals and public authorities



 Amtsblatt der Europäischen Union DE
Reihe L

2024/1689 12.7.2024

VERORDNUNG (EU) 2024/1689 DES EUROPÄISCHEN PARLAMENTS UND DES RATES

vom 13. Juni 2024

zur Festlegung harmonisierter Vorschriften für künstliche Intelligenz und zur Änderung der Verordnungen (EG) Nr. 300/2008, (EU) Nr. 167/2013, (EU) Nr. 168/2013, (EU) 2018/858, (EU) 2018/1139 und (EU) 2019/2144 sowie der Richtlinien 2014/90/EU, (EU) 2016/797 und (EU) 2020/1828 (Verordnung über künstliche Intelligenz)

(Text von Bedeutung für den EWR)

Details of Treaty No.225



Title	Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law
Reference	CETS No. 225
Opening of the treaty	Vilnius 05/09/2024 - Treaty open for signature by the member States, the non-member States which have participated in its elaboration and by the European Union, and for accession by other non-member States
Entry in force	(5 Ratifications including at least 3 member States of the Council of Europe)

Links: Handbuch des Europarates «[The Administration and You](#)» (3. Aufl.); EU: [KI-Verordnung](#); Europarat: [KI-Rahmenkonvention](#)

1. Ausgangslage



Steuergesetz: § 148^{bis}
Veranlagung mithilfe von
algorithmischen Systemen
(in Kraft seit 1.1.2025)

Kanton Zürich modernisiert Gesetz über Information und Datenschutz

Medienmitteilung 04.08.2023

Der Regierungsrat stärkt das Öffentlichkeitsprinzip und die Transparenz. Mit dem totalrevidierten Gesetz über die Information und den Datenschutz (IDG) schafft er eine Beauftragte oder einen Beauftragten für das Öffentlichkeitsprinzip. Er regelt die gesetzlichen Grundlagen zu offenen Behördendaten (Open Government Data, OGD) und fördert deren Publikation. Zudem enthält das IDG neu Regelungen zum Umgang mit künstlicher Intelligenz (KI).

Strategie Digitale Schweiz 2025:

Künstliche Intelligenz

Künstliche Intelligenz: Regulierung in der Schweiz und Einsatz von KI-Systemen in der Bundesverwaltung

Umsetzung des vom Bundesrat gewählten Ansatzes zur Regulierung von Künstlicher Intelligenz. Dieser Ansatz gewährleistet den Schutz von Grundrechten, Demokratie und Rechtsstaatlichkeit und fördert gleichzeitig gezielt die Innovations- und Wettbewerbsfähigkeit der Schweiz. Es

→ *Auslegeordnung zu
Regulierungsansätzen für KI im
Januar 2025 erwartet*

Links: Bericht Kanton ZH: [Einsatz Künstlicher Intelligenz in der Verwaltung](#); Bund: [Strategie Digitale Schweiz 2025](#)

Agenda

- 1 Ausgangslage
 - 2 KI – Herausforderungen für die kantonale Verwaltung
 - 3 Rechtsetzungsbedarf identifizieren
 - 4 Fazit
-

2. Herausforderungen

- Fehleranfälligkeit
- (fehlende) digital literacy zur Kontrolle der Outputs
- «Black box» machine learning – Sicherstellung der Nachvollziehbarkeit von KI-gestützten Entscheiden?
- Gefahr für Grundrechte
- Diskriminierende Resultate
- ...

2. Herausforderungen

Not Again! Two More Cases, Just this Week, of Hallucinated Citations in Court Filings Leading to Sanctions

Frei erfundene Fälle zitiert

Richter verurteilt An Posse zu einer Gelds

Zwei New Yorker Anwälte zitieren in eine
wollen sie nicht eingestehen, dass diese
5000 Dollar zahlen.

23.06.2023, 16.23 Uhr

Quelle: <https://www.spiegel.de/netzwelt/web/new-chatgpt-posse-zu-einer-geldstrafe-a-38c8535e-d>



Beitrag vom 22.02.2024: <https://www.lawnext.com/2024/02/not-again-two-more-cases-just-this-week-of-hallucinated-citations-in-court-filings-leading-to-sanctions.html>

2. Herausforderungen

ChatGPT 3.5 ▾



You

Wenn ein nasses Shirt 2 Stunden braucht, um an der Sonne zu trocknen, wie lange dauert es, bis 3 nasse Shirts trocken sind?



ChatGPT

Wenn ein nasses Shirt 2 Stunden braucht, um an der Sonne zu trocknen, bedeutet das, dass jedes Shirt individuell 2 Stunden zum Trocknen benötigt.

Um zu berechnen, wie lange es dauert, bis drei nasse Shirts trocken sind, multiplizieren wir die Zeit, die ein einzelnes Shirt zum Trocknen benötigt (2 Stunden), mit der Anzahl der Shirts (3):

$2 \text{ Stunden/Shirt} * 3 \text{ Shirts} = 6 \text{ Stunden}$

Also dauert es 6 Stunden, bis drei nasse Shirts trocken sind.




Prompt eingegeben am 05.03.2024

2. Herausforderungen

ChatGPT ▾





Wenn ein nasses Shirt 2 Stunden braucht, um an der Sonne zu trocknen, wie lange dauert es, bis 3 nasse Shirts trocken sind?

 Wenn ein nasses Shirt 2 Stunden braucht, um an der Sonne zu trocknen, dann bedeutet das, dass die Zeit, die es benötigt, um zu trocknen, von den Umgebungsbedingungen wie Sonnenlicht und Temperatur abhängt, nicht von der Anzahl der Shirts. Wenn alle drei Shirts gleichzeitig unter den gleichen Bedingungen in der Sonne liegen, wird jedes Shirt gleichzeitig trocknen.

Das bedeutet:

- 1 nasses Shirt trocknet in 2 Stunden.
- 3 nasse Shirts trocknen auch in 2 Stunden, vorausgesetzt, sie liegen nebeneinander und alle sind gleichermaßen der Sonne ausgesetzt.

Also, es dauert ebenfalls 2 Stunden, bis 3 nasse Shirts trocken sind.

Prompt eingegeben am 12.06.2024

2. Herausforderungen

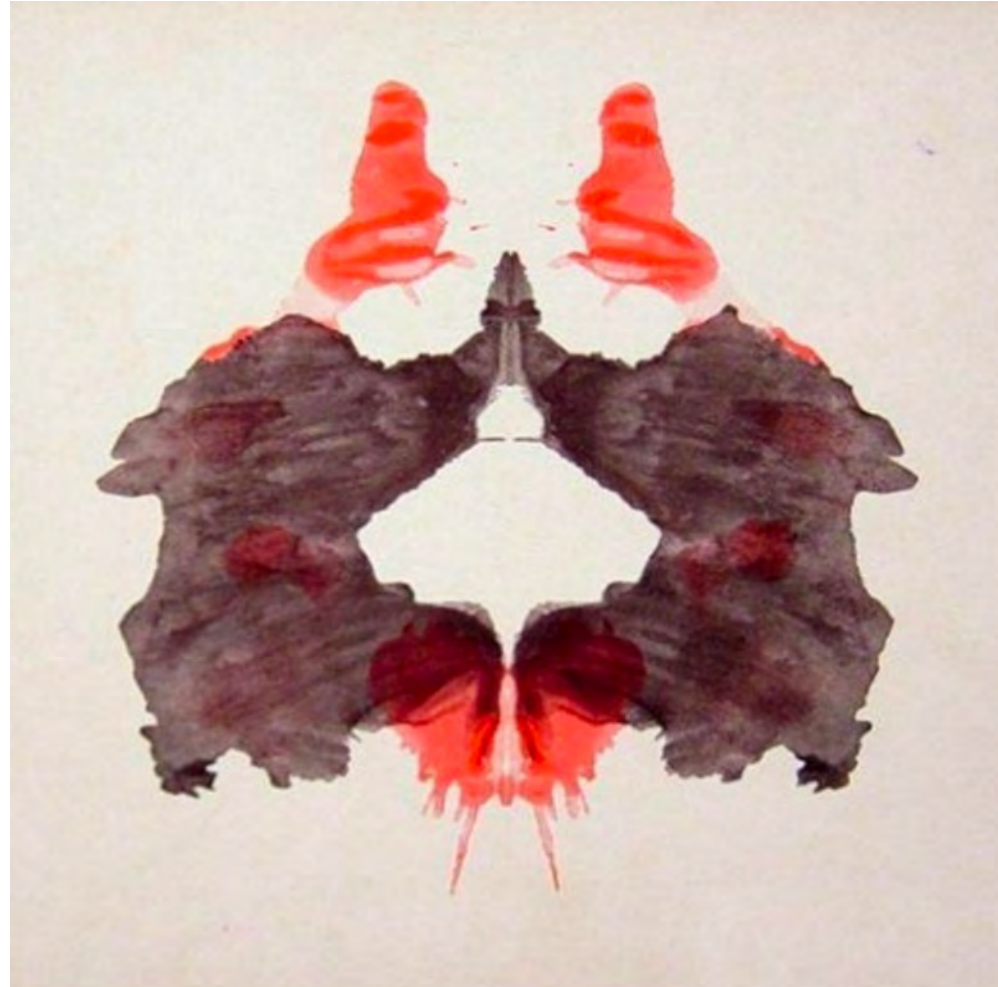
Zentrale Frage für öffentliche Verwaltungen, insbesondere beim Einsatz von KI in Verwaltungsverfahren:

§ 10 Abs. 1 Verwaltungsrechtspflegegesetz (VRG) ZH

«Schriftliche Anordnungen sind zu begründen (...)»

→ Wie kann angesichts der «Black Box»-Problematik die **Nachvollziehbarkeit von KI-gestützten Behördenentscheidungen** sichergestellt werden?

2. Herausforderungen



Quelle:
<https://www.bbc.com/news/technology-44040008>

2. Herausforderungen



Regular AI saw:

“a close up of a vase with flowers”

Norman saw:

“a man is shot dead”

Quelle:

<https://www.bbc.com/news/technology-44040008>

2. Herausforderungen



Quelle:
<https://www.bbc.com/news/technology-44040008>

2. Herausforderungen



Regular AI saw:

“a black and white photo
of a small bird”

Norman saw:

“man gets pulled into
dough machine”

Quelle:

[https://www.bbc.com/news/
technology-44040008](https://www.bbc.com/news/technology-44040008)

2. Herausforderungen

Beispiel «AMS»



<https://bit.ly/31oY7C1>



In Österreich kategorisiert ab 2019 ein Algorithmus arbeitslose Personen nach ihren Chancen auf dem Arbeitsmarkt. Die Software trennt in drei Personengruppen: Arbeitssuchende mit guten, mittleren und schlechten Perspektiven, einen Arbeitsplatz zu finden. Auf dieser Basis will der Arbeitsmarktservice Österreich (AMS) seine Ressourcen ab 2020 überwiegend auf Personen der mittleren Gruppe konzentrieren. Dort seien sie am effektivsten eingesetzt. Die „Arbeitsmarktintegrationschancen“ von Frauen bewertet der Algorithmus pauschal negativ. Zudem führen betreuungspflichtige Kinder zu einer schlechten Einstufung – allerdings nur für Frauen. Bei Männern, so begründen die Entwickler, habe eine Betreuungspflicht statistisch gesehen keine negativen Auswirkungen auf die Arbeitsmarktchancen.

Das AMS-Arbeitsmarktchancen-Modell

Dokumentation zur Methode

Jürgen Holl
Günter Kernbeiß
Michael Wagner-Pinter

<https://bit.ly/2AiFrbl>

<https://bit.ly/2KLq2X0>

Agenda

- 1 Ausgangslage
 - 2 KI – Herausforderungen für die kantonale Verwaltung
 - 3 Rechtsetzungsbedarf identifizieren
 - 4 Fazit
-

3. Rechtsetzungsbedarf identifizieren

Legalitätsprinzip

Art. 5 Abs. 1 BV, Art. 2 Abs. 1 KV-ZH

→ Notwendigkeit einer hinsichtlich **Normstufe & Normdichte** ausreichenden Rechtsgrundlage

Art. 36 Abs. 1 BV, Art. 10 Abs. 2 KV-ZH

→ **Einschränkungen von Grundrechten** bedürfen einer gesetzlichen Grundlage. (...)

3. Rechtsetzungsbedarf identifizieren

Identifikation der spezifischen Anwendungsbereiche von KI in der Verwaltung

- Workshops, Brainstorming-Sitzungen
- Benchmarking
- Bedarfsumfragen

Analyse bestehender rechtlicher Rahmenbedingungen & Identifikation von Lücken/Unklarheiten

- Normenscreening
- Rechtsvergleichende Analyse
- Experteninterviews
- Szenario-Analyse
- Literaturrecherche

Agenda

-
- 1 Ausgangslage
 - 2 KI – Herausforderungen für die kantonale Verwaltung
 - 3 Rechtsetzungsbedarf identifizieren
 - 4 Fazit

4. Fazit

Zusammenfassung der rechtlichen Herausforderungen:

- Transparenz & Nachvollziehbarkeit
- Verhinderung von Diskriminierung
- Umgang mit Fehleranfälligkeit
- Digital Literacy sicherstellen
- Datenschutz & Grundrechtsschutz

4. Fazit

Chancen & Risiken abwägen

- Effizienzsteigerung vs. rechtliche Risiken
- Innovation fördern ohne (Grund-)Rechte zu verletzen

Empfehlungen

- Klare Vorgaben schaffen Rechtssicherheit
- Rechtsetzung unter Einbezug juristischer & technischer Expertise
- Fortlaufende Schulung & Sensibilisierung der Mitarbeitenden

Vielen Dank
für Ihre Aufmerksamkeit.

Digital MasterClass

Kantonsrat Zürich

nächste Veranstaltung: **10. März 2025**

Gesundheitswesen digital? Aktuelle Einblicke

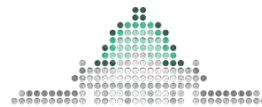
Eine Veranstaltung von:



Universität
Zürich ^{UZH}

Digital Society Initiative

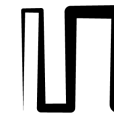
Partner:



Parldigi

Unterstützt durch:

DIZH



Stiftung
Mercator
Schweiz