

Hello, World:
Artificial Intelligence and its
use in the public sector



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November 2019 | <http://dx.doi.org/10.1787/9789264311111>

Artificial Intelligence in the Public Sector: Separating Myth from Reality

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Agenda

- Digitalization of the public sector
- Definitions of AI
- Breaking down AI
- Expectations vs Reality
- Procurement of AI
- Concluding thoughts

Digital government is about....

A word cloud of digital government concepts. The words are arranged in a roughly circular pattern around the central, largest word, 'ARTIFICIAL INTELLIGENCE'. The words vary in size, with larger words indicating higher frequency or importance. The words are in a clean, sans-serif font, mostly in black, with some in a lighter gray. The background is white.

ARTIFICIAL INTELLIGENCE

DIGITAL USABILITY
DIGITAL STANDARDS
DIGITAL DIVIDE
PUBLIC INFORMATION
DATA-BASED DECISION MAKING
OPENNESS
INTERNET VOTING
BIG DATA
PROCUREMENT
DIGITAL ETHICS
DIGITAL IDENTITY
DIGITAL BUREAUCRACIES
DIGITAL SIGNATURES
GOVERNMENT DIGITALIZATION
CO-CREATION
"ONE STOP SHOP" PORTALS
Surveillance
ELECTRONIC DOCUMENT MANAGEMENT
DIGITAL INNOVATION
DIGITAL SERVICES
DIGITAL CAPACITIES
PREDICTIVE AND PROACTIVE SERVICES
Bureaucracy
State
CITIZEN EMPOWERMENT
CYBER SECURITY
DIGITAL READY CODE
DISRUPTIVE TECHNOLOGIES
DIGITAL IDENTITY
RULES AS CODE
DIGITAL SERVICE DEVELOPMENT
OPEN GOVERNMENT DATA
CHAT BOTS
DIGITAL PUBLIC SERVANTS
DATA MANAGEMENT
DIGITAL GOVERNANCE
SMART CITIES
TRANSPARENCY

What is AI?

- A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of autonomy. In addition, AI are “machines performing human-like cognitive functions”. (OECD Definition, 2019)

What is AI?

- “artificial intelligence system” (AI system) means software that is developed with one or more techniques and approaches listed in Annex 1 (of the AIA) and can, for a given set of human-defined objectives, generate outputs, such as content, predictions, recommendations, or decisions influencing the environments they interact with. (EU AI Act)

What is AI?

- The capability of a device to perform functions that are normally associated with human intelligence such as reasoning, learning, and self-improvement (NIST)

What is AI?

Policy paper

A pro-innovation approach to AI regulation

Published 29 March 2023

3.2.1 Defining Artificial Intelligence

39. To regulate AI effectively, and to support the clarity of our proposed framework, we need a common understanding of what is meant by ‘artificial intelligence’. There is no general definition of AI that enjoys widespread consensus. [\[footnote 80\]](#) That is why we have defined AI by reference to the 2 characteristics that generate the need for a bespoke regulatory response.

- The ‘adaptivity’ of AI can make it difficult to explain the intent or logic of the system’s outcomes:
 - AI systems are ‘trained’ – once or continually – and operate by inferring patterns and connections in data which are often not easily discernible to humans.
 - Through such training, AI systems often develop the ability to perform new forms of inference not directly envisioned by their human programmers.
- The ‘autonomy’ of AI can make it difficult to assign responsibility for outcomes:
 - Some AI systems can make decisions without the express intent or ongoing control of a human.

AI in the Public Sector Opportunities?

- Chatbots
- Natural language processing
- Automation
- Decision making
- Healthcare
- Safety
- Governance
- Public services



Executive summary

26 April 2017

How artificial intelligence could transform government

Cognitive technologies have the potential to revolutionize the public sector—and save billions of dollars

TECH

More than half of Europeans want to replace lawmakers with AI, study says

PUBLISHED THU, MAY 27 2021•3:17 AM EDT

Jan 4, 2019, 03:23pm EST | 22.886 views

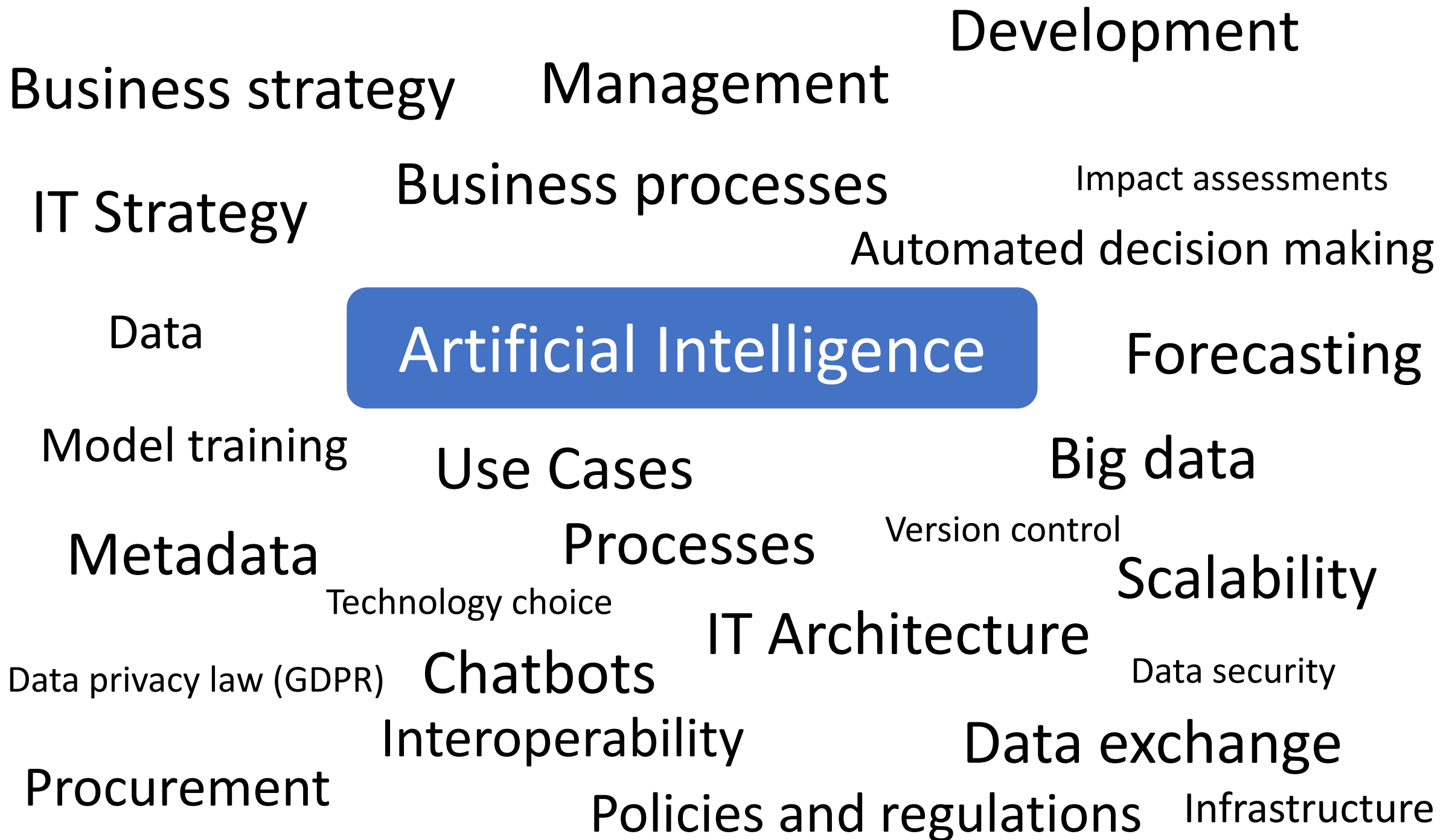
Artificial Intelligence And The End Of Government



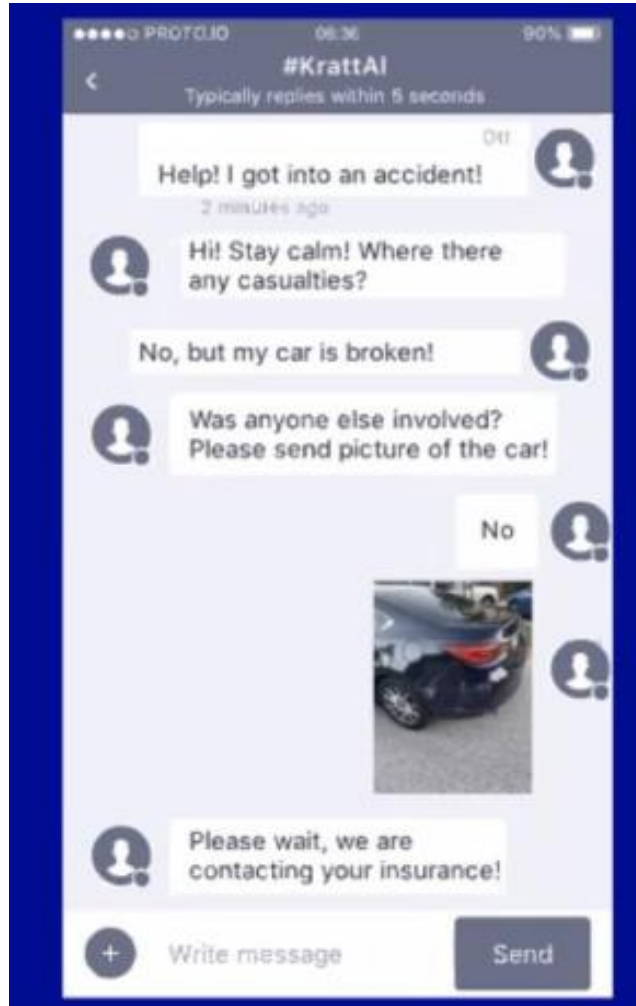
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Follow



Expectations



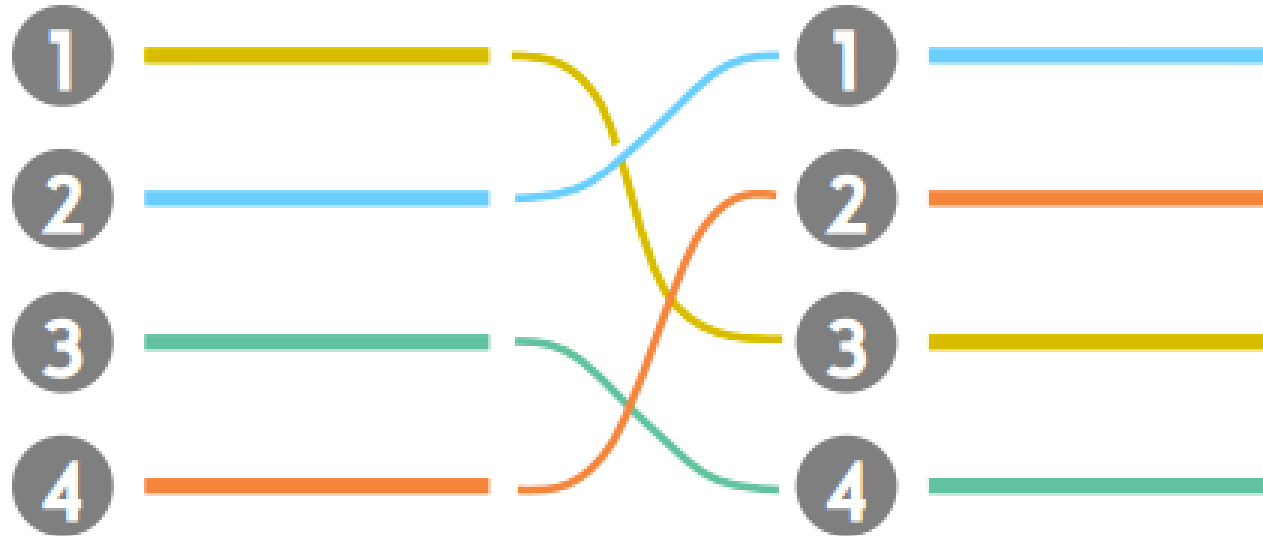
BüroKratt AI, Estonian Government



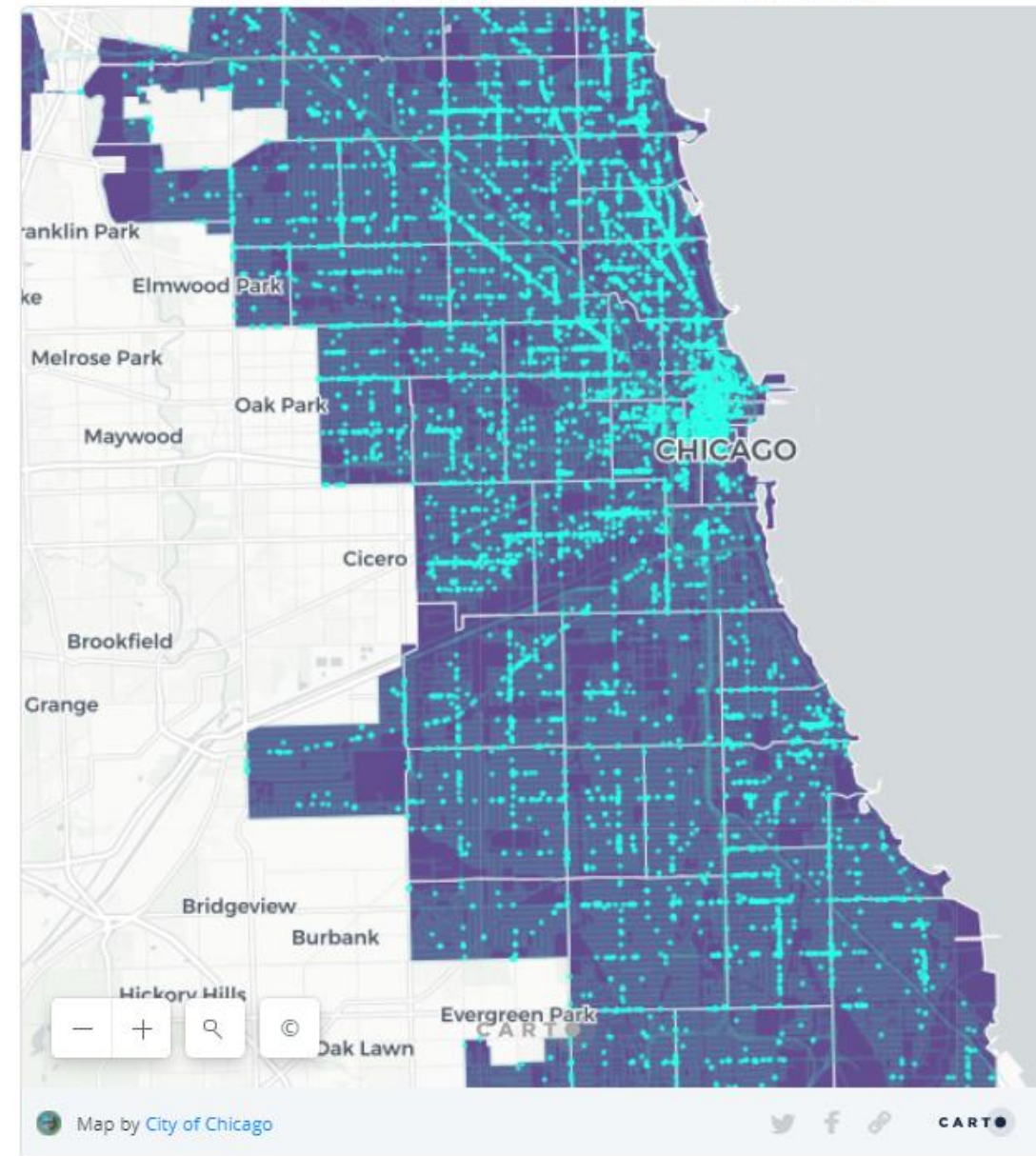
Tengai interviewing job applicants, Sweden

Typical order of inspections

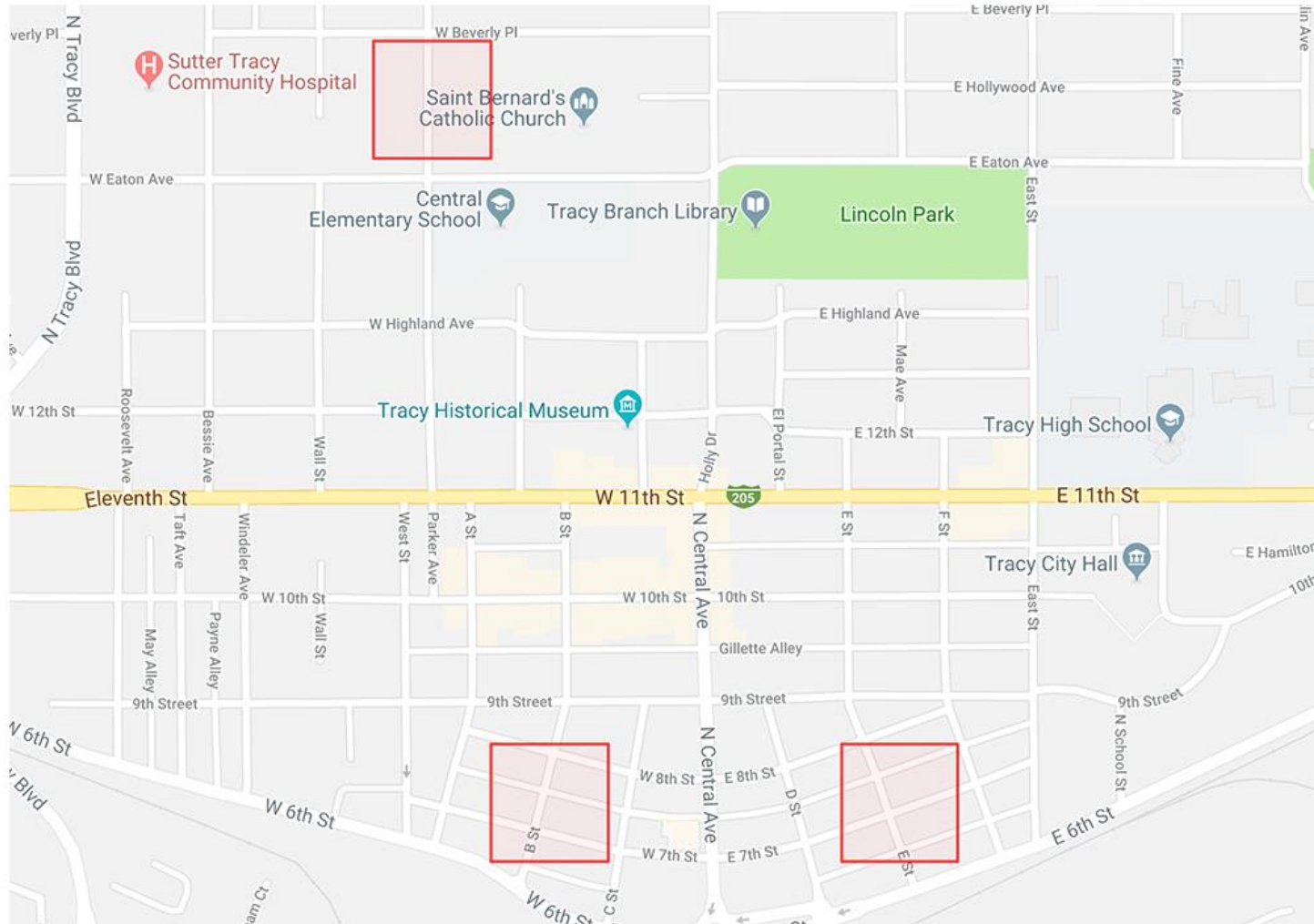
Data-driven order of inspections

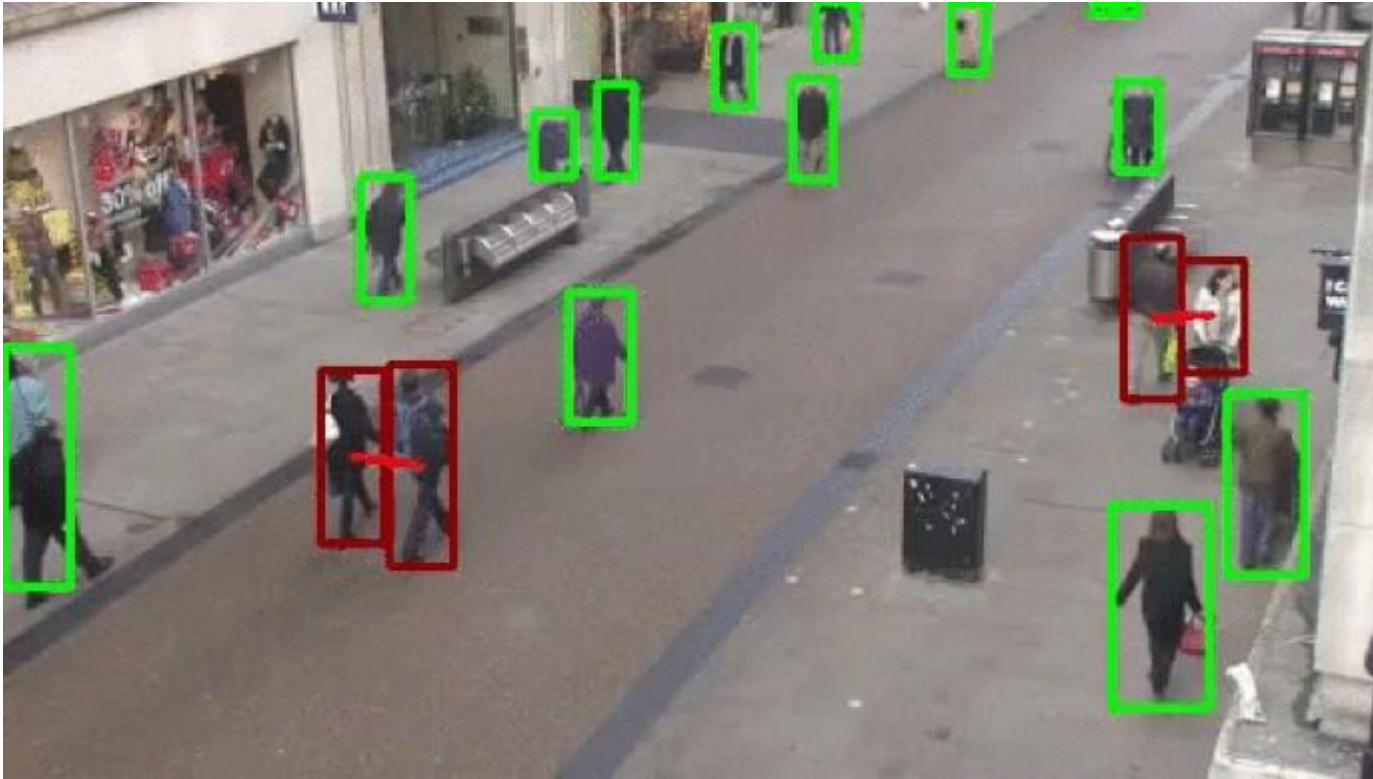


Restaurants Failing to Pass Inspections: 2015-2016



Predictive Policing: Daily Guidance on Where and When to Patrol





Object Detection, Amsterdam

<https://towardsdatascience.com/covid-19-ai-enabled-social-distancing-detector-using-opencv-ea2abd827d34>



PRODUCT

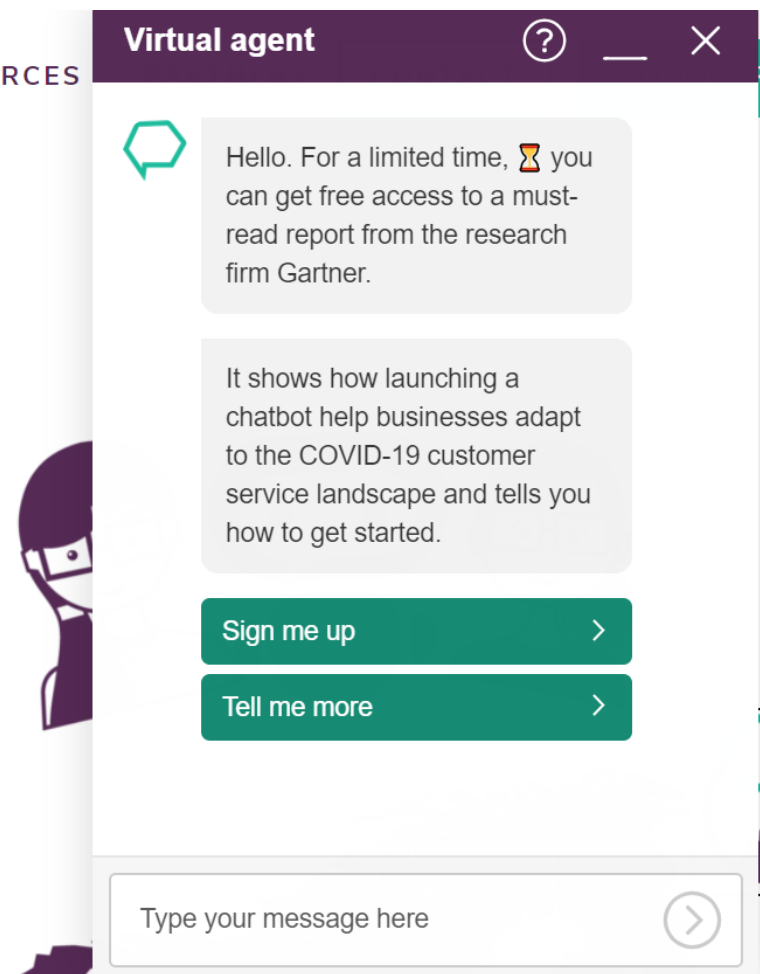
SOLUTIONS

RESOURCES

Always accessible and instantaneous citizen assistance

Citizens want everyday life to be easy with fast and easy online interactions with government and public services.

Across the Nordic public sector, government departments and municipalities are cooperating on digital transformation, and breaking down informational silos in the process.



Can AI Be a Fair Judge in Court? Estonia Thinks So

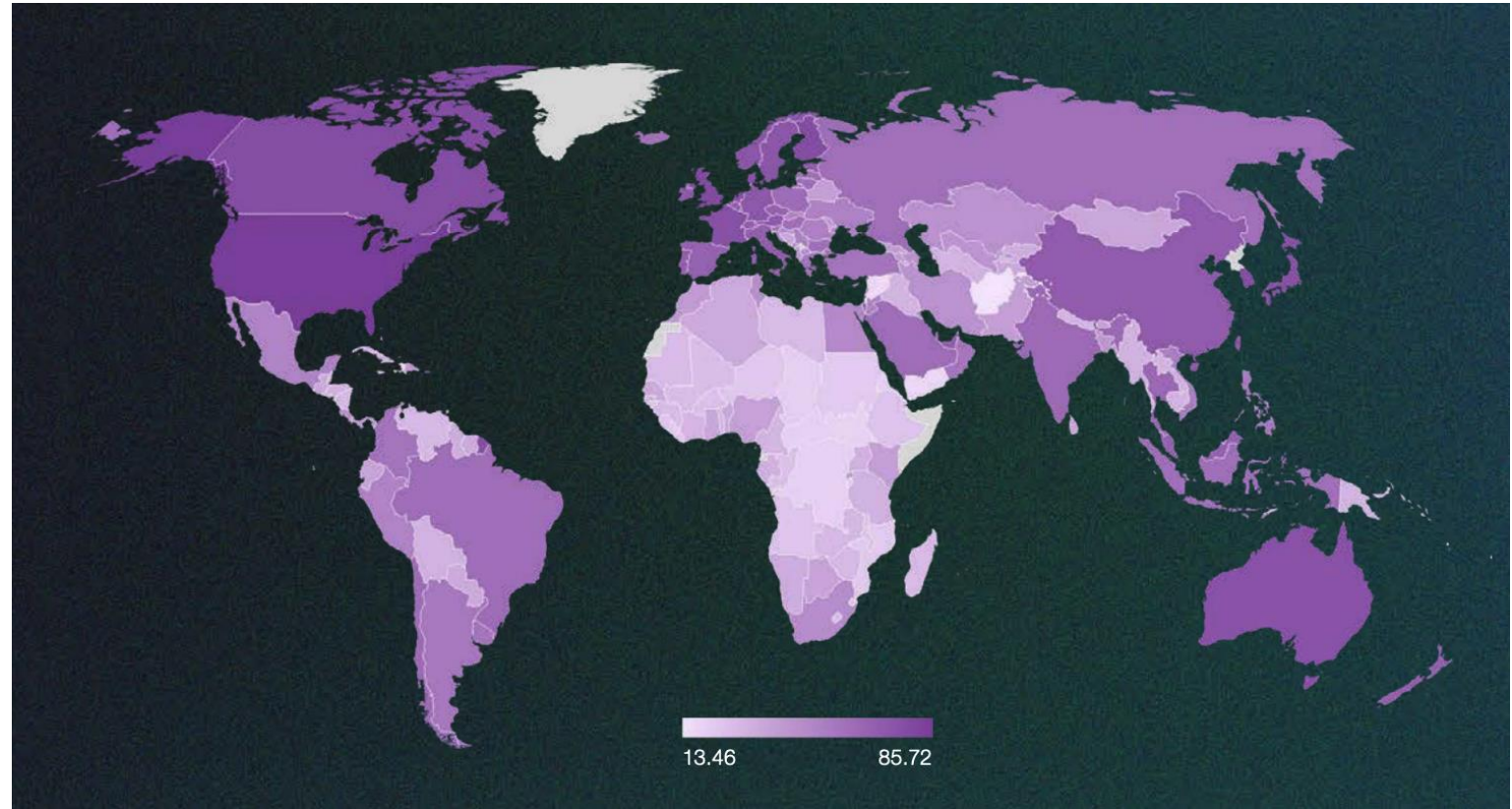
Estonia plans to use an artificial intelligence program to decide some small-claims cases, part of a push to make government services smarter.



g for sync.mathtag.com...

Reality

Government AI Readiness Index **2022**



"F**k the algorithm"?: What the world can learn from the UK's A-level grading fiasco

The UK exam debacle reminds us that algorithms can't fix broken systems

ARTIFICIAL INTELLIGENCE

Predictive policing algorithms are racist. They need to be dismantled.

Lack of transparency and biased training data mean these tools are not fit for purpose. If we can't fix them, we should ditch them.

TECH

New Jersey needs volunteers who know COBOL, a 60-year-old programming language

PUBLISHED MON, APR 6 2020•6:06 PM EDT | UPDATED MON, APR 6 2020•7:44 PM EDT

KEY POINTS

- If you know how to code COBOL, the state of New Jersey wants to hear from you.
 - Systems that power unemployment benefits in New Jersey are running off of 40-year-old mainframes that require COBOL
 - New Jersey plans to ask for volunteers with a variety of skills, including technologists
-



America's government is getting old

It's not just the 71-year-old president: A POLITICO analysis finds that the federal workforce is older than it's ever been, and younger workers aren't coming in. What happened?

But the vast majority of the government consists of the 2 million-strong federal civilian workforce. And thanks to slow-moving hiring practices and a huge cohort of baby boomers who haven't retired at the predicted rates, it has grown significantly older than the American workforce overall. Today, just 17 percent of federal workers are under 35 years old. (In the private sector, almost 40 percent are.) And more than a quarter of federal employees are now older than 55.

In some agencies, the upward age shift is even starker. Sixty nine percent of NASA's workforce is over 45 years old. At the Department of Housing and Urban Development, it's 70 percent. At the tiny Government Publishing Office, it's even more extreme—80 percent.

[Home](#) > [IT Leadership](#) > [IT Budgeting](#)

NEWS

Sharp IT budget cuts expected in wake of COVID-19

Gartner and IDC see global IT spending dropping precipitously this year, with cloud services an exception as enterprises accelerate transformational strategies.



Actual situation

- Not enough funding
- Outdated technology
- Aging workforce
- Lack of experience and skill
- Poor procurement
- Missing market knowledge
- Trade secrecy
- Missing data
- Missing infrastructure
- Over reliance on the private sector



Procurement essential for AI in government

- Procurement of AI will likely increase in the coming years
 - Reliance on outsourcing due to limited in-house capacity
- Procurement of AI is seen as additionally challenging
 - Requires new competences and processes, often overlooked
- Availability of AI procurement guidelines may have limited success
 - Not obligatory
 - Uneven application across administrations
- Need to balance assisting AI SME's and start-ups with avoiding risks
 - Procurement processes need to accommodate smaller companies
- How procured AI could be integrated into existing organizational infrastructure and organizational practices
 - Legacy systems and organizational culture may limit AI procurement

What you should be thinking about

- Do you have a problem?
- Does it require AI?
 - What problems does AI fit?
- What is the benefit of AI over other solutions?
- Do you have data?
- Can you use the data?
- How is it stored, what are the potential risks for using it?
- Can you afford building this service?
- Do you have the competency in house?
- Do you need to contract out?
- Can you write the procurement?
- How do you write the procurement?
- Can companies access the data?
- Does it require infrastructure investments?
- How much does it cost?
What is my budget?
- How long will it last?
- Is it ethical?
- Do we have the ability to maintain it?
- Does this increase my technical debt?
- Vendor lock in?
- ...
- ...
- ...

Some final thoughts

- AI is often not the best or the first solution you should try, there are very specific use cases.
- Often times, the use of AI may be the last concern a public servant has. However, funding opportunities may encourage AI to be used when it is not necessary
- AI can have an interesting impact on the public sector, but the real benefits are likely not as „cool“ and „flashy“. E.G. Machine translation, internal fraud detection, data validation, etc...
- Biggest opportunity for AI in the public sector (especially when it comes to public sector transformation) is related to intelligence augmentation; working together with AI.
- The use of AI in the public sector creates new ways of thinking about the world.
- Outsourcing of AI is quite popular due to the high technical knowhow required, but in the long run this puts the government at a distinct disadvantage. Policies and regulation must be in place

Moving forwards, what are the next steps?

- Education is important, take courses like <https://www.elementsofai.com/>
- Don't skip the foundation, make sure you're ready for AI before you take the dive
- Strong emphasis needed on increasing data quality and data infrastructure
- The definition of a public servant, and the required skill sets, is changing fast, organizations need to be aware of this.
- Understand procurement best practices
- If possible, have concrete plans in place to ensure relevant tacit and explicit knowledge remain in the public sector
- AI is not a cure-all, but strategic implementation of AI, for specific relevant problems can have a large positive benefit for society.
- AI is not only about the technology!!!!