


# **Don't worry about AI and the electoral process! Unless...**

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**19th European Conference of Electoral Management Bodies**

Strasbourg | Council of Europe | November 14 & 15, 2022

 @algorithmwatch | @spielkamp



# **/ “Artificial Intelligence” & algorithms – what are we talking about?**



# / Algorithms

$$\begin{array}{r} 27 \cdot 113 \\ \hline 27 \\ 27 \\ 27 \\ \hline 3051 \end{array}$$

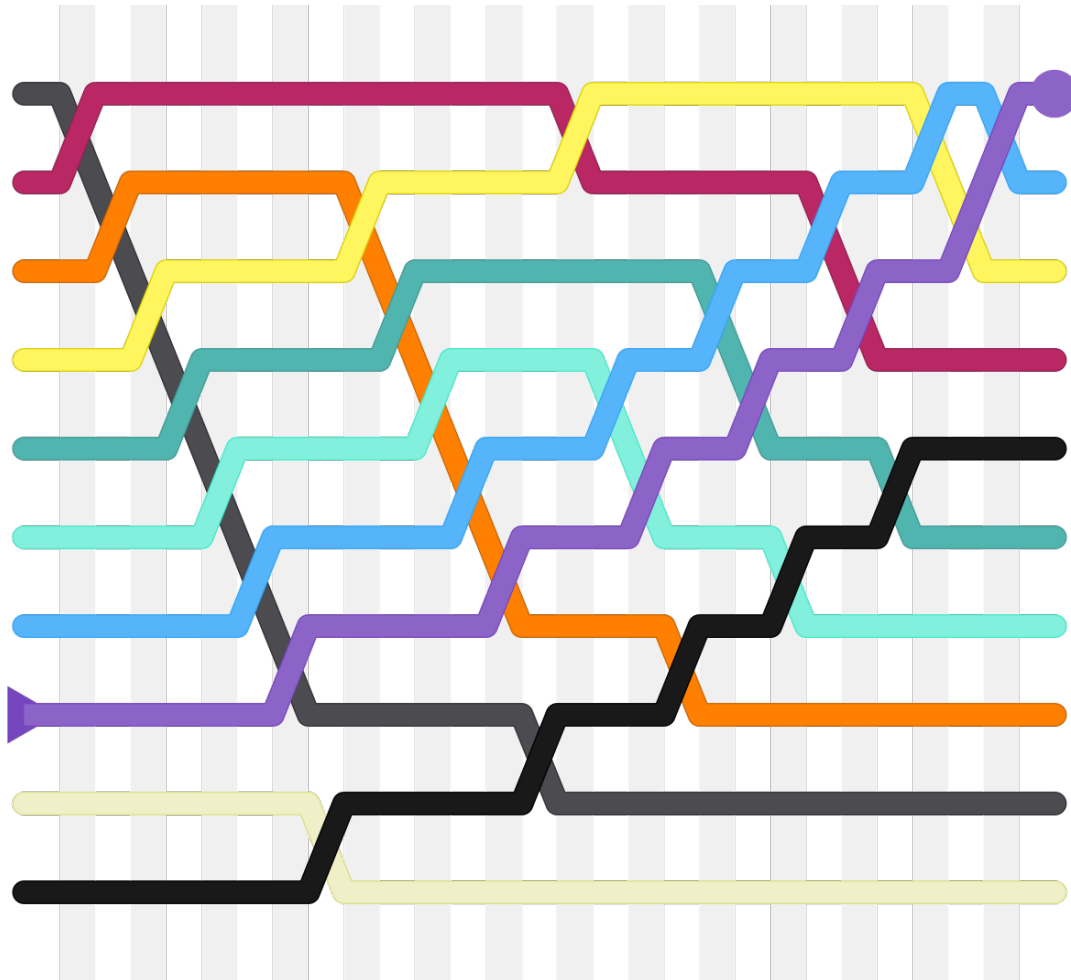
The image shows a multiplication problem:  $27 \cdot 113$ . The result is  $3051$ . The partial products are  $27$ ,  $270$ , and  $2700$ . The digits in the partial products are color-coded: the first  $27$  has an orange  $2$  and a blue  $7$ ; the second  $27$  has a green  $2$  and a red  $7$ ; the third  $27$  has a purple  $2$  and a red  $7$ . A purple bracket above the first  $27$  and a red bracket above the second  $27$  indicate the alignment of the partial products. The final result  $3051$  is shown below a horizontal line.



# **/ more complex algorithms**



# Bubble sort





# **Example**

## **First Pass**

**( 5 1 4 2 8 )** → **( 1 5 4 2 8 )**

Here, algorithm compares the first two elements, and swaps since  $5 > 1$ .

**( 1 5 4 2 8 )** → **( 1 4 5 2 8 )**

Swap since  $5 > 4$  **( 1 4 5 2 8 )** → **( 1 4 2 5 8 )**, Swap since  $5 > 2$

**( 1 4 2 5 8 )** → **( 1 4 2 5 8 )**

Now, since these elements are already in order ( $8 > 5$ ), algorithm does not swap them.



# / Pseudocode implementation

```
procedure bubbleSort(A : list of sortable items)
  n := length(A)
  repeat
    swapped := false
    for i := 1 to n-1 inclusive do
      /* if this pair is out of order */
      if A[i-1] > A[i] then
        /* swap them and remember something changed */
        swap(A[i-1], A[i])
        swapped := true
      end if
    end for
  until not swapped
end procedure
```



# **/ “Artificial Intelligence”**

- “Machine Learning” | ML





# “Artificial Intelligence”

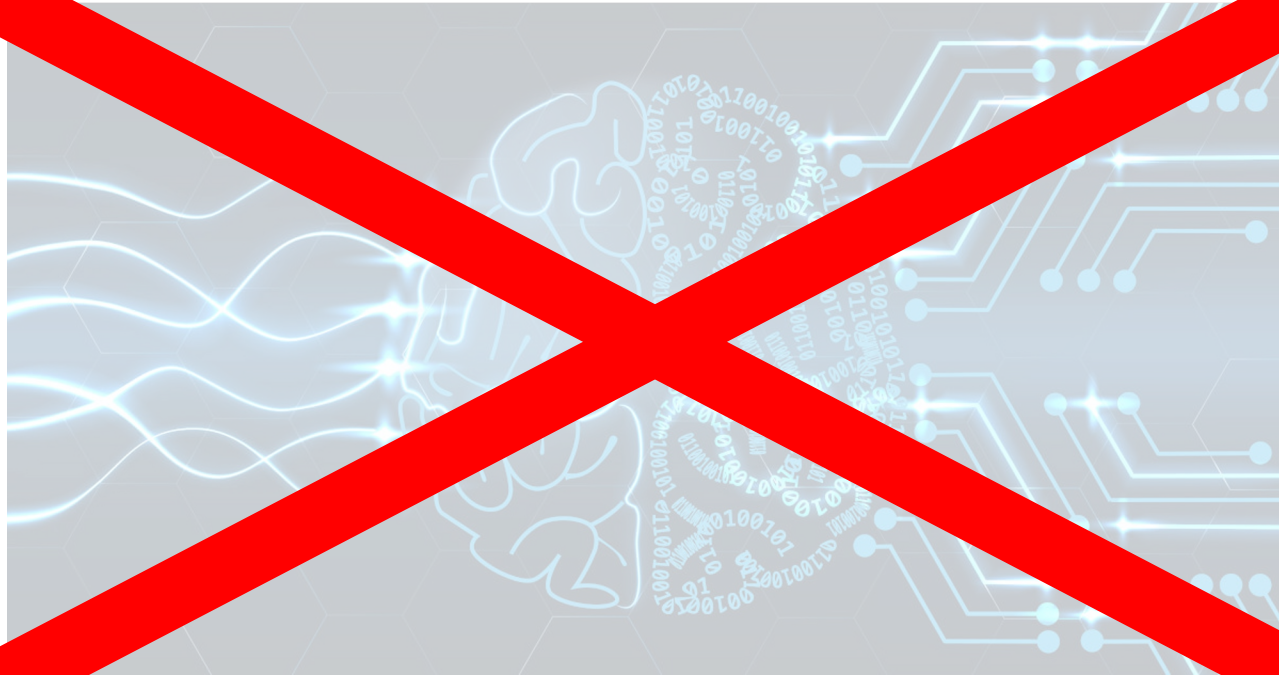
- “Machine Learning” | ML





# “Artificial Intelligence”

- “Machine Learning” | ML





# **/ “Artificial Intelligence”**

- “Machine Learning” | ML
- = (very advanced) statistics

## *Wrongfully Accused by an Algorithm*

In what may be the first known case of its kind, a faulty facial recognition match led to a Michigan man's arrest for a crime he did not commit.





FACE IDENTIFIED

STRATFORD CE

BURGER KING



**MATCH**

Watchlist: Interpol  
Match Confidence: 96%  
First Name: KIERAN  
Last Name: HERSI  
Gender: MALE  
Height: 1.82 metres  
Charges: MURDER

POLICY REPORT US & WORLD

# How Amazon automatically tracks and fires warehouse workers for 'productivity'

*Documents show how the company tracks and terminates workers*

By [Colin Lecher](#) | [@colinlecher](#) | Apr 25, 2019, 12:06pm EDT



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# **Past Imperfect: How Credit Scores and Other Analytics “Bake In” and Perpetuate Past Discrimination**





# **/ Artificial Intelligence and Electoral Integrity**



# Artificial Intelligence and Electoral Integrity

Forbes

AI • EDITORS' PICK

## 7 Ways AI Could Solve All Of Our Election Woes: Out With The Polls, In With The AI Models

**Mark Minevich** Contributor ©

*Global Digital Cognitive Strategist , Digital Visionary, Artificial Intelligence expert, Venture Capitalist, Innovation CTO, author & AI contributor to Forbes.com*

Nov 2, 2020, 08:17am EST



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# **/ How can AI reliably predict an election outcome?**

- It can't.



# **/ How can AI reliably predict an election outcome?**

- It is difficult to make predictions, especially about the future.

Unattributed Danish Parliamentarian, 1937-1938



# **/ How can AI reliably predict an election outcome?**

- “Machine Learning” models are good at solving problems and making predictions under stable conditions (chess), not under uncertainty (real life)



# **/ Can AI assist in reliably predicting an election outcome?**

- Maybe, but this question cannot be answered in general but only in a specific context.



# **/ How to ensure oversight of AI tools in electoral processes?**

- What tools are we talking about?





# **/ Broad view of AI tools**

The background of the image is a blurred, light blue Facebook logo. The logo is centered and occupies most of the frame, but it is out of focus, creating a soft, bokeh effect. The text is overlaid on a white rectangular background that is positioned in the lower half of the image.

# **Facebook's algorithms fueled massive foreign propaganda campaigns during the 2020 election – here's how algorithms can manipulate you**

Published: September 20, 2021 2.31pm CEST



## **CoE's Ad hoc Committee on AI (CAHAI)**

### **VIII Elements relating to democracy and democratic governance**

36. While recognising that AI may play a positive role in the functioning of democracy and democratic governance to foster inclusive and participatory processes, the CAHAI is also concerned about the potential use of AI to unlawfully or unduly interfere in democratic processes. The shaping of public opinion through AI, as well as potential chilling effects arising through the use of AI, should therefore be considered in the context of a possible legally binding instrument, whereas more specific issues regarding election manipulation such as ***micro-targeting, profiling, and manipulation of content*** (including so-called “deep fakes”) could be dealt with in more sectoral instruments.



# **/ EU's Digital Services Act**

- Auditing for systemic risks to democracy



## Article 34: Risk Assessment

Providers of very large online platforms and of very large online search engines shall diligently identify, analyse and assess any systemic risks in the Union stemming from the design or functioning of their service and its related systems, including algorithmic systems, or from the use made of their services.

(a) the **dissemination of illegal content** through their services;

[...]

(c) any actual or foreseeable **negative effects on civic discourse and electoral processes**, and public security



# **/ Narrow view of AI tools**

- Case studies



# **/ Narrow view of AI tools**

- Image recognition for ballots



# **/ Image recognition for ballots**

- Accuracy can be tested
- If better than humans, and there are good rules for contesting and verify results, including re-counts (by humans?), it sounds like a good idea
- (maybe even in the case accuracy is only on par with humans, for other reasons than accuracy)





**/ But:**

**“I know America’s voting machines are vulnerable because my colleagues and I have hacked them—repeatedly—as part of a decade of research studying the technology”**

J. Alex Halderman, professor of Computer Science and Engineering,  
University of Michigan, United States Senate Select Committee on  
Intelligence hearing on "Russian Interference in the 2016 U.S. Election"



# Security

- The same is true for any technology applied in electoral processes.



## **/ Narrow view of AI tools**

- Biometric identification & ID management



# **/ Biometric identification & ID management**

- concerns:
  - privacy
  - human dignity
  - governmental disclosure of personal information
  - fears of violation of the secrecy of the vote



# **/ And again: Security**



**/ So – is “AI” a magic tool or a horrible threat?**

**Forbes**

AI • EDITORS' PICK

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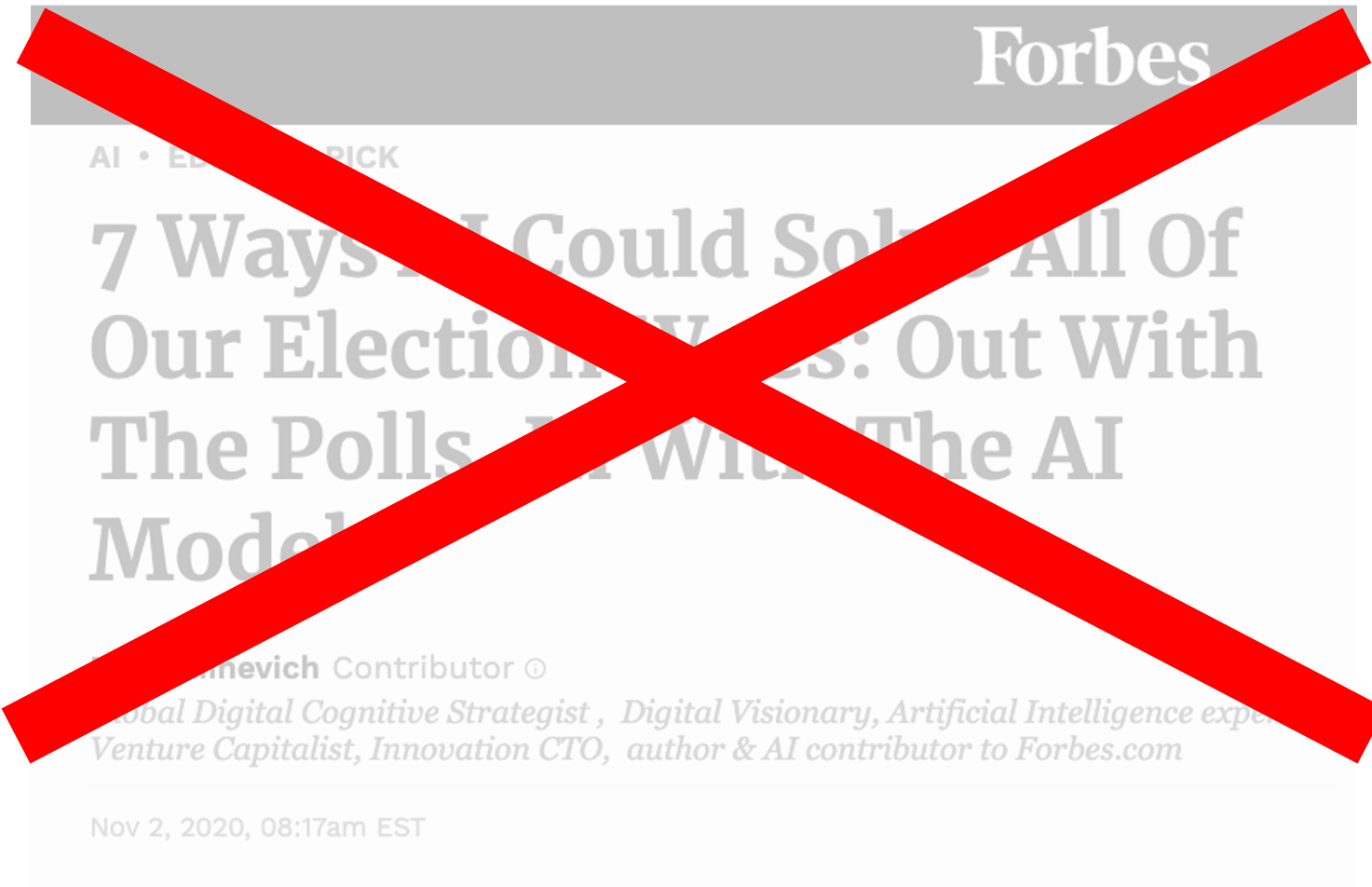
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Nov 2, 2020, 08:17am EST



# / It's mostly snake oil





# Conclusions

- Don't believe the hype
- Look at individual cases
- Let common sense guide you (if it's too good to be true it's most likely not true)
- More risks exist in countries where environment for safeguarding election integrity is more challenging already?





**Thank you!**



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