

The Alan Turing Institute

Using Generative AI to Transform Public Services

Jonathan Bright
Apolitical 2025



Generative AI

Tools such as ChatGPT that can “generate” content

Important characteristics:

- Human language prompting
- (high quality) Human language analysis
- Generation of high-quality output



Generation: Front office

- Citizen facing chatbot an obvious use case – answering questions
- Could also help with form filling in (which could then help with form analysis)

The findings of our first generative AI experiment: GOV.UK Chat

[Dr Matthew Gregory, Lead Data Scientist at GDS](#), [Alessia Tosi, Data Scientist at GDS](#), [Sharon McDonald, Lead User Researcher, GDS](#) and [Robert Sewell, Senior User Researcher, GOV.UK](#), 18 January 2024 - [Data](#), [User insights](#), [What we're working on](#)

 **GOV.UK Chat** EXPERIMENTAL PROTOTYPE

 **GOV.UK Chat (experimental)**

Hello 🇬🇧 I'm GOV.UK Chat. I use the guidance on GOV.UK to answer questions.

You can ask me anything about business or trade - just don't include personal or sensitive data and please limit your question to 300 characters or less.

APD Launches New Non-Emergency Reporting System

[Home](#) >

[About](#) >

[Services](#) >

[Programs](#) >



CITY OF AUSTIN

FOR IMMEDIATE RELEASE

Release Date: Mar. 02, 2023

Contact: APD Public Information Office [512-](#)

[974-5017](#) [Email](#)

Generation: Back-office productivity

- Writing code
- Enhancing efficiency in policy analysis functions
- Institutional knowledge / memory
- Human resourcing
- Bureaucratic process automation

Workload:
**‘Bureaucracy is
ruining teachers’
lives’**

NHS doctors spend 10 hours a week on bureaucracy

NHS doctors and nurses spend up to 10 hours a week on bureaucracy - a third of which is unnecessary, a Government review has found.

By Laura Donnelly and Lauradonnelly
20 November 2013 - 3:00pm

GitHub CEO says Copilot will write 80% of code “sooner than later”

Thomas Dohmke explains how AI will change the way we code, work, and learn — and could even change the future of innovation itself.

Publications

2023 WORKING PAPER HBS WORKING PAPER SERIES

Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality

By: Fabrizio Dell'Acqua, Edward McCowland III, Ethan Mollick, Hila Lifshitz-Ausaf, Katherine C. Kellogg, Saran Rajendran, Lisa Krayer, François Caron

Format: Print

neo4j

What Is Retrieval-Augmented Generation?

arXiv > cs > arXiv:2403.14712

Search...
Help!

Computer Science > Computers and Society

[Submitted on 18 Mar 2024]

AI for bureaucratic productivity: Measuring the potential of AI to help automate 143 million UK government transactions

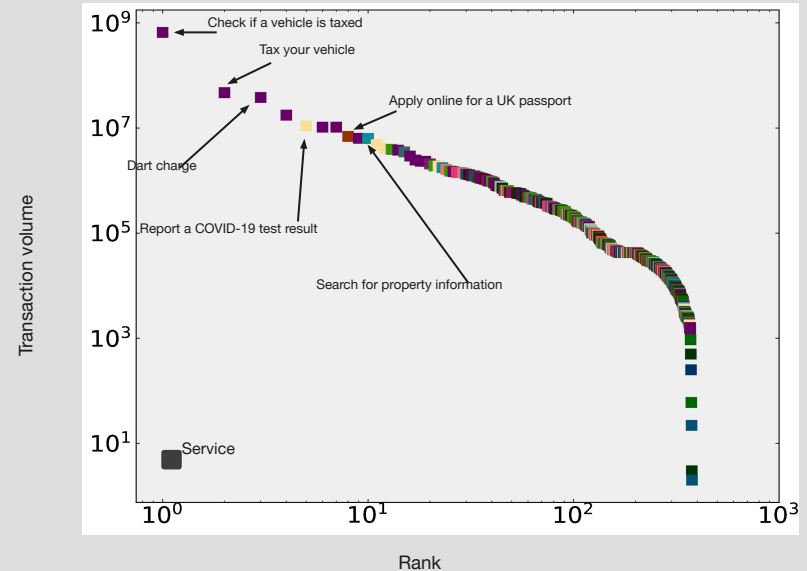
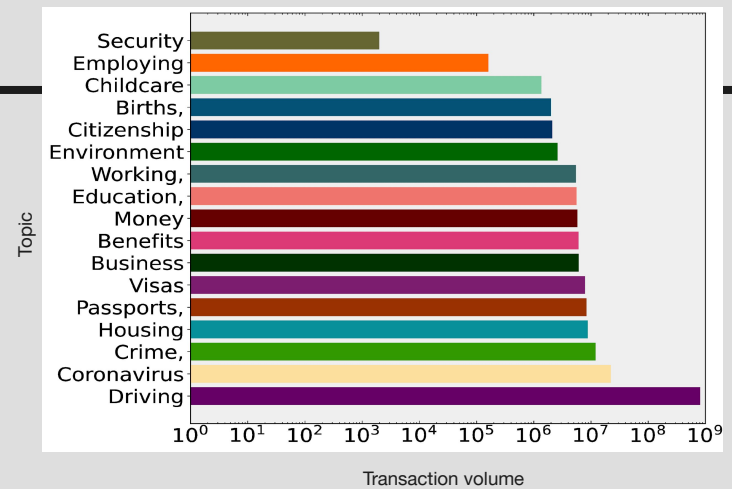
Vincent J. Straub, Youma Hashem, Jonathan Bright, Satyam Bhagwanani, Deborah Morgan, John Francis, Saba Esnaashari, Helen Margetts

Bureaucratic process automation

Almost one billion transaction performed per year – though lots of these automated information requests around driving

~143 million transactional requests where govt. needs to process and make a decision (e.g. passport): largest area of opportunity

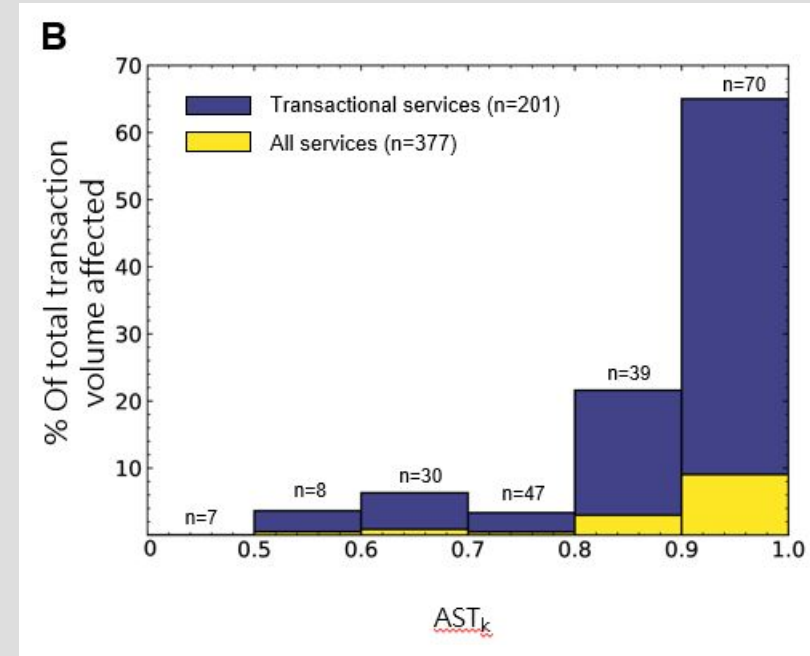
AI for bureaucracy: measuring the automation potential of 143 million government transactions
<https://arxiv.org/abs/2403.14712>



Bureaucratic process automation

By our measure, more than 80% of these 143 million transactions are highly automatable (more than 80% routine tasks)

Potential gain is huge: saving a few minutes on average from highly automatable services would save hundreds of years of person work every year



It's already being used...

“Generative AI is already widespread in the public sector”

<https://arxiv.org/abs/2401.01291>

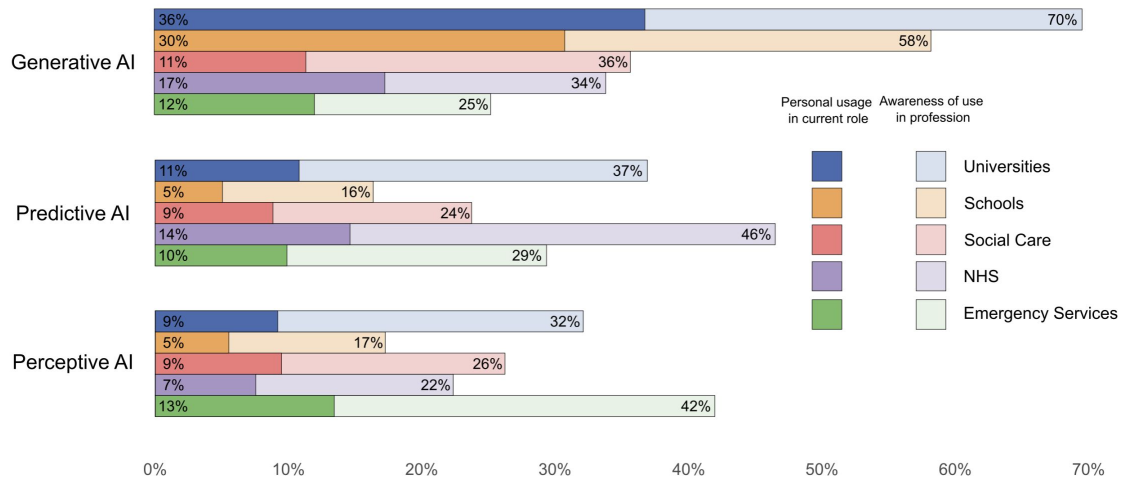
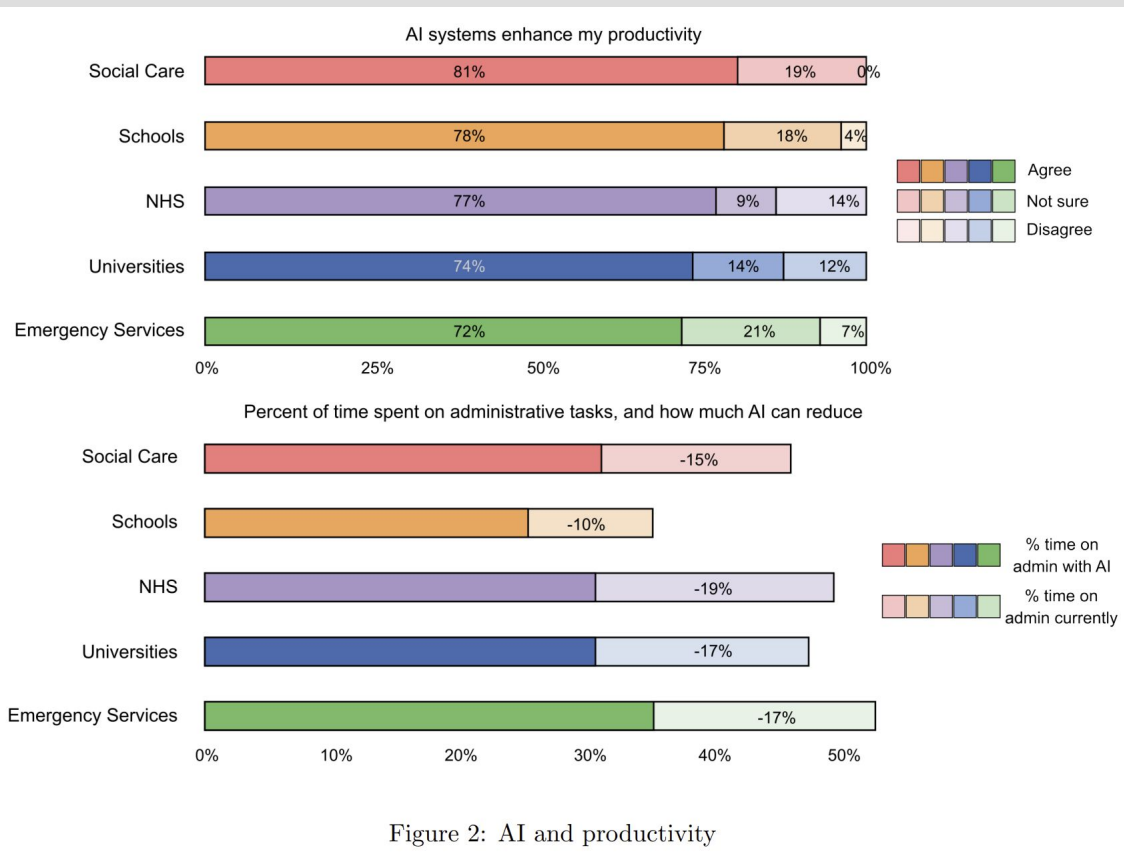


Figure 1: AI in the public sector

And people like it!

“Generative AI is already widespread in the public sector”

<https://arxiv.org/abs/2401.01291>



Top-down vs bottom-up adoption

- Bottom-up adoption is **great** for user satisfaction, but what about rules, standardization?
- What training is needed?
- How to fully exploit the opportunities?

Generative AI framework for HM Government

Created by the Central Digital and Data Office

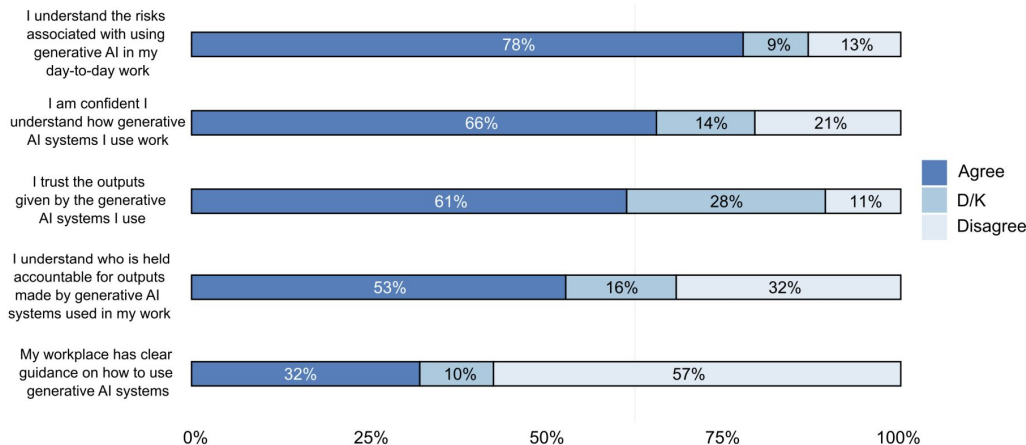


Figure 3: Understanding of Generative AI

Risks and Responsible Innovation

Validation of quality

- Validation of systems is challenging, esp for genAI
- Hard to generate, easy to validate is a good area for use cases

Against Predictive Optimization:

On the Legitimacy of Decision-Making Algorithms that Optimize Predictive Accuracy

Angelina Wang, Sayash Kapoor, Solon Barocas, Avind Narayanan.

FAccT 2023

[Read our draft paper](#)

Our argument

Predictive optimization is a distinct type of automated decision making that has **proliferated widely**. It is sold as accurate, fair, and efficient.

We identify a **recurring set of flaws** that apply broadly to predictive optimization, are hard to fix technologically, and negate its claimed benefits.

Any application of predictive optimization should be considered **illegitimate** by default unless the developer justifies how it avoids these flaws.

What is predictive optimization?

We coin the term predictive optimization to refer to automated decision-making systems where machine learning is used to make predictions about some future outcome pertaining to individuals, and those predictions are used to make decisions about them.

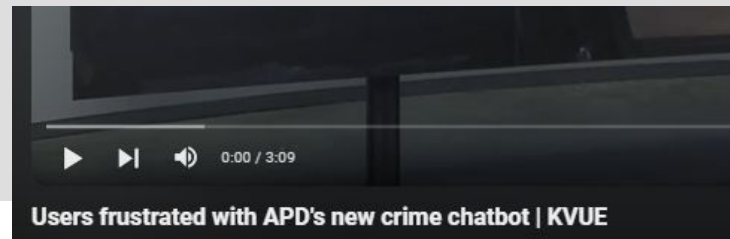
REPORT DETAILS

MACHINE LEARNING IN CHILDREN'S SERVICES: DOES IT WORK?

Official No 10 chatbot answers in French

Trial run 'hallucination' casts doubt on Rishi Sunak's artificial intelligence hopes

By Matthew Field
24 January 2024 • 5:22pm



THE SHIFT

A.I. Has a Measurement Problem

Which A.I. system writes the best computer code or generates the most realistic image? Right now, there's no easy way to answer those questions.

Liability and remedy

- AI systems (like most technology)
will fail sometimes
- Need to be conscious of what happens when failure takes place, what appropriate remedies are

Airline held liable for its chatbot giving passenger bad advice - what this means for travellers

23 February 2024

By Maria Yagoda, Features correspondent

Share



HOME · COMPUTING · NEWS

NY lawyers fined for using fake ChatGPT cases in legal brief



By Trevor Mogg

June 22, 2023

SHARE



Listen to article 3 minutes

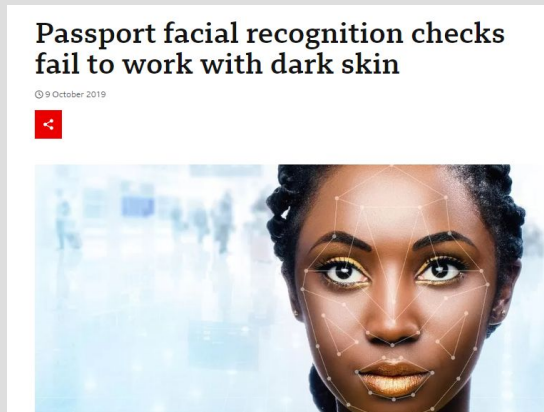


The clumsy use of [ChatGPT](#) has landed a New York City law firm with a \$5,000 fine.

Risks and responsible innovation

Bias and discrimination

Systems that work well for the
'average' person may not work for
everyone



Machine Bias

There's software used across the country to predict future criminals. And it's biased against blacks.

by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica

May 23, 2016

Risks and responsible innovation

Transparency and public trust

People are inherently sceptical about machine decision making

Losing public trust could mean AI ends up like nuclear / GM etc.

About the ICO / Media Centre / Blog: Addressing concerns on the use of AI by local authorities

Blog: Addressing concerns on the use of AI by local authorities

A blog by Stephen Bonner,
Deputy Commissioner –
Regulatory Supervision



California orders Cruise driverless cars off the roads because of safety concerns

OCTOBER 24, 2023 - 4:34 PM ET



Dara Kerr



The move comes after one of Cruise's driverless cars struck a pedestrian in downtown San Francisco earlier this month. The incident involved a woman who was first hit by a human driver and then thrown onto the road in front of a Cruise vehicle. The Cruise vehicle braked but then continued to roll over the pedestrian, pulling her forward, then coming to a final stop on top of her.

Risks and responsible innovation

- Sensible approaches to innovation can mitigate these risks
- Main danger is when they are ignored or thought about only at the end of the process



Guidance

Guidance to civil servants on use of generative AI

Published 29 June 2023

[Home](#) + [News](#) + [Publications & policy submissions](#)

Understanding artificial intelligence ethics and safety

A guide to AI ethics, including responsible design and implementation of AI systems in the public sector

Generative AI is already widespread in the public sector

<https://arxiv.org/abs/2401.01291>

AI for bureaucracy: measuring the automation potential of 143 million government transactions

<https://arxiv.org/abs/2403.14712>

Thanks!

@jonmbright

jbright@turing.ac.uk