Evaluating the unseen five years on

ChatGPT, algorithms and machine learning

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Today's session

01 Why is this topic important?

02 Demystifying the unseen

03 Parameters for evaluating AI-enabled programs

04 Some tips to help you get started

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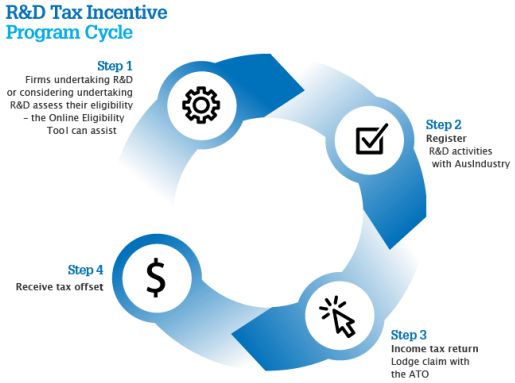
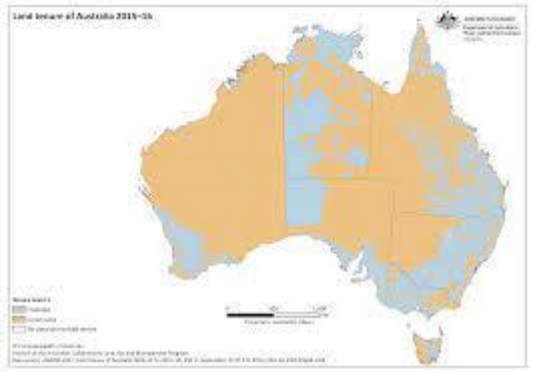
What's my cred?

A decade in evaluation, assurance and governance





SPAT

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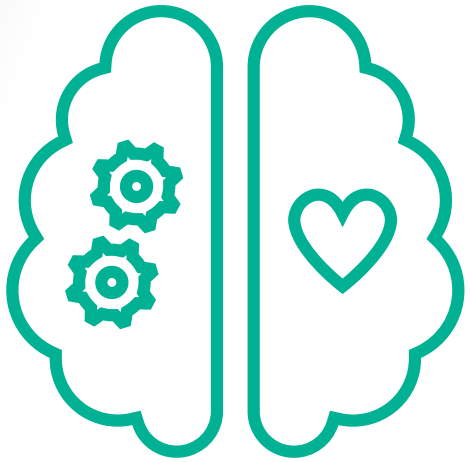
Why is this topic important now?

- ChatGPT released late last year, and upgraded again early this year
- unfettered public access to extremely powerful generative AI LLM and ML
- are we at the singularity?
- locally, Robodebt
- globally:
  - first known AI-enabled suicide
  - Neuralink closing the brain-computer divide
  - most development in private enterprises in the US and China

Before we go too far, an overview

- ADM (automated decision-making)
- AGI (artificial general intelligence)
- LLM (large language models)
- MFM (multimodal foundation models)
- ML (machine learning)



How ChatGPT works

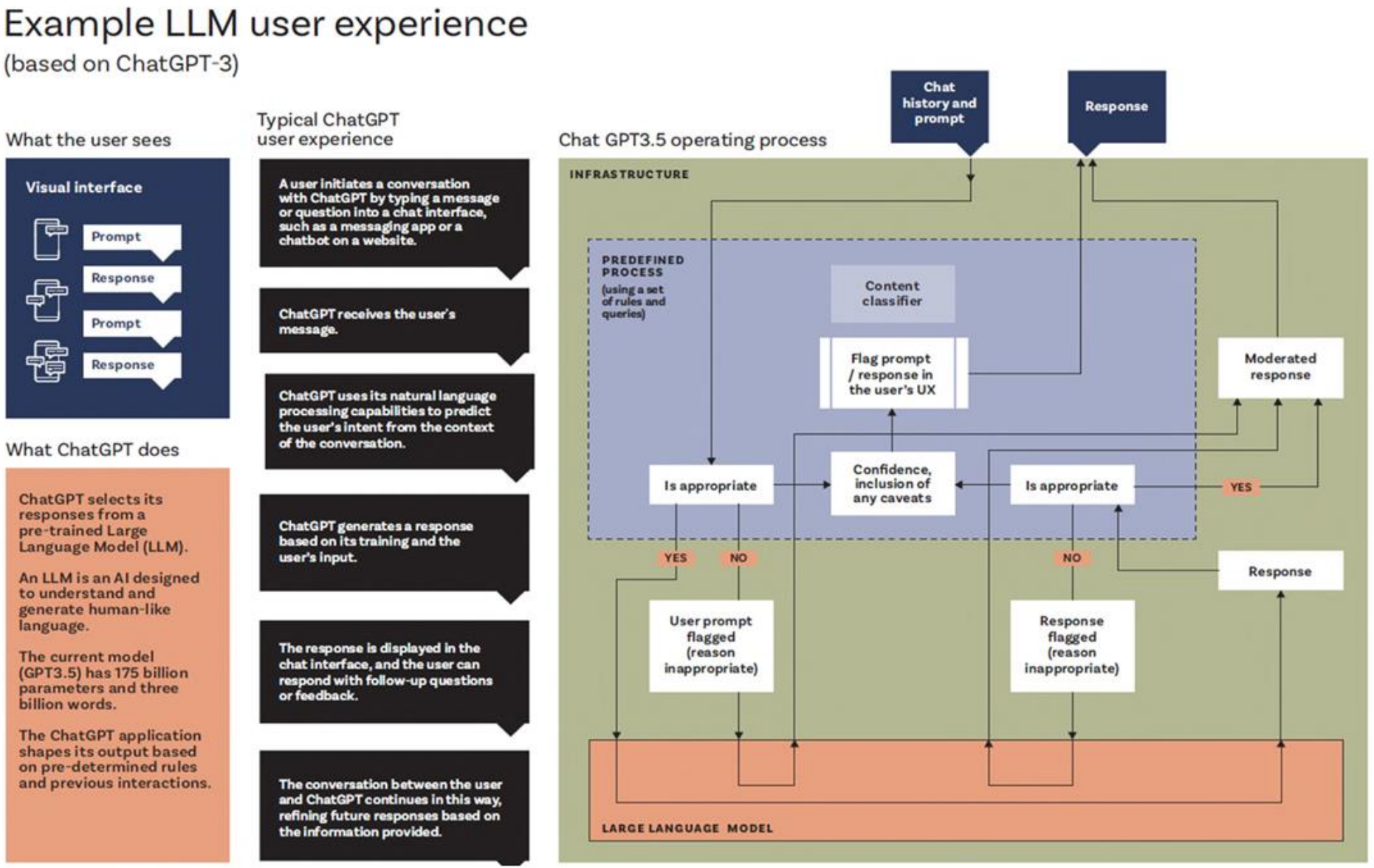
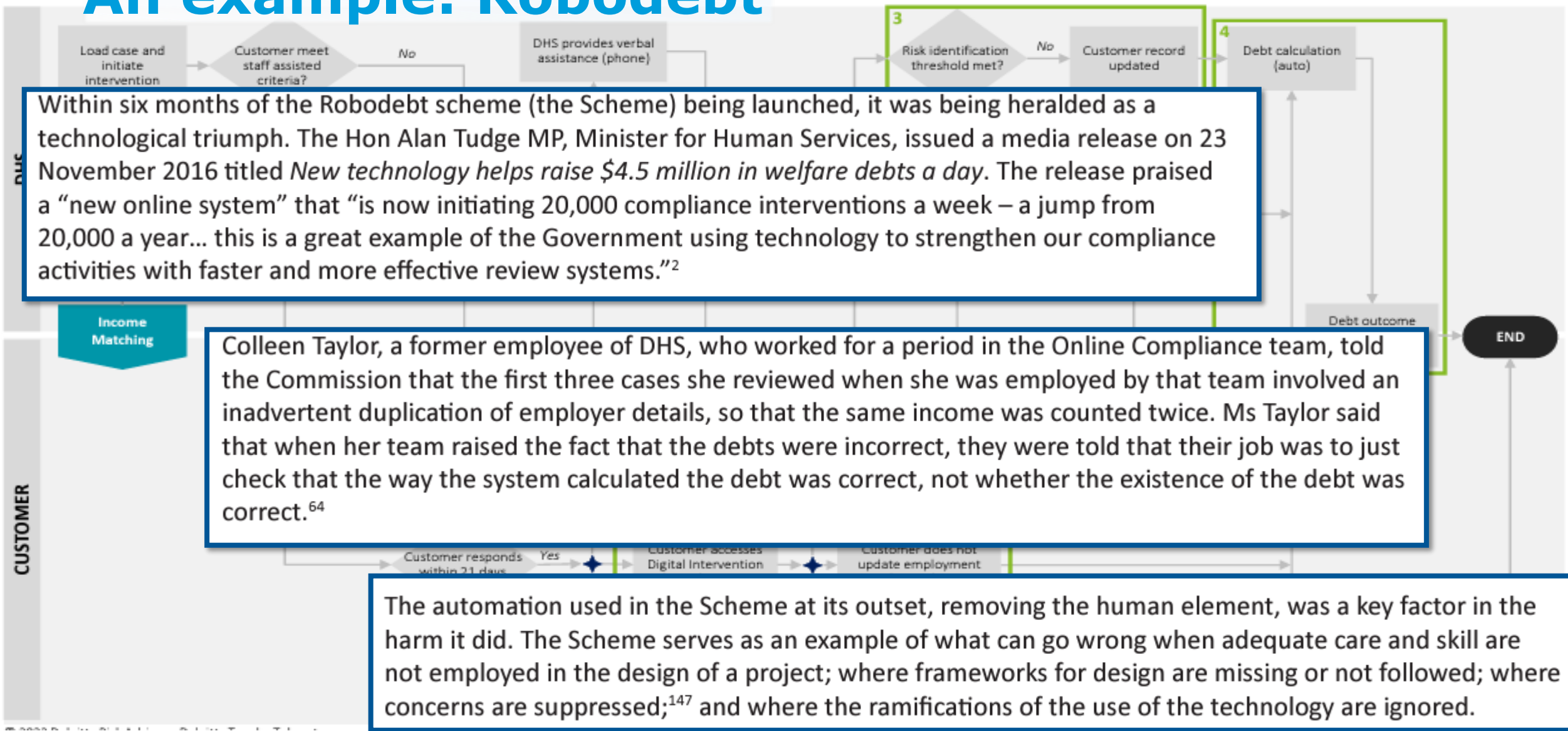


Image courtesy of Bell, G., Burgess, J., Thomas, J., and Sadiq, S. (2023, March 24). Rapid Response Information Report: Generative AI - language models (LLMs) and multimodal foundation models (MFMs). Australian Council of Learned Academies.

An example: Robodebt



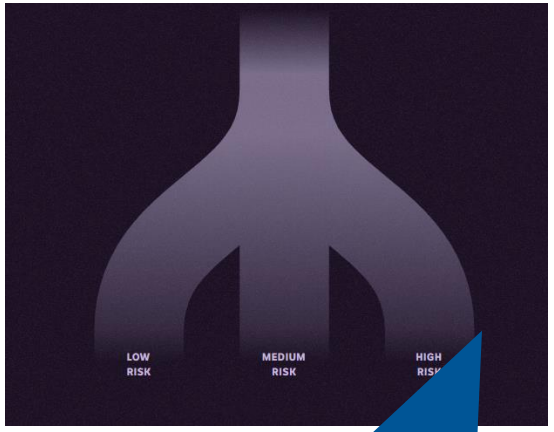
Within six months of the Robodebt scheme (the Scheme) being launched, it was being heralded as a technological triumph. The Hon Alan Tudge MP, Minister for Human Services, issued a media release on 23 November 2016 titled *New technology helps raise $4.5 million in welfare debts a day*. The release praised a "new online system" that "is now initiating 20,000 compliance interventions a week – a jump from 20,000 a year… this is a great example of the Government using technology to strengthen our compliance activities with faster and more effective review systems."[2]

Colleen Taylor, a former employee of DHS, who worked for a period in the Online Compliance team, told the Commission that the first three cases she reviewed when she was employed by that team involved an inadvertent duplication of employer details, so that the same income was counted twice. Ms Taylor said that when her team raised the fact that the debts were incorrect, they were told that their job was to just check that the way the system calculated the debt was correct, not whether the existence of the debt was correct.[64]

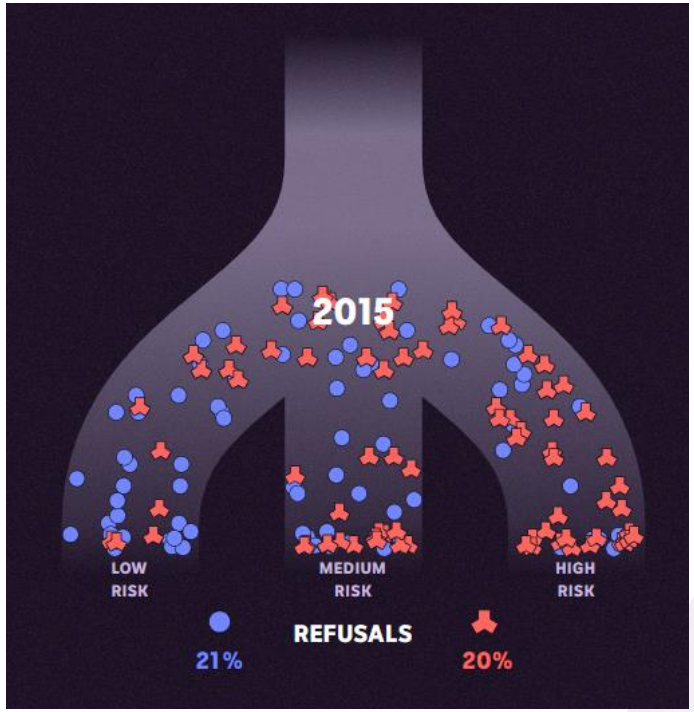
The automation used in the Scheme at its outset, removing the human element, was a key factor in the harm it did. The Scheme serves as an example of what can go wrong when adequate care and skill are not employed in the design of a project; where frameworks for design are missing or not followed; where concerns are suppressed;[147] and where the ramifications of the use of the technology are ignored.

https://robodebt.royalcommission.gov.au/system/files/2023-09/rrc-accessible-full-report.PDF

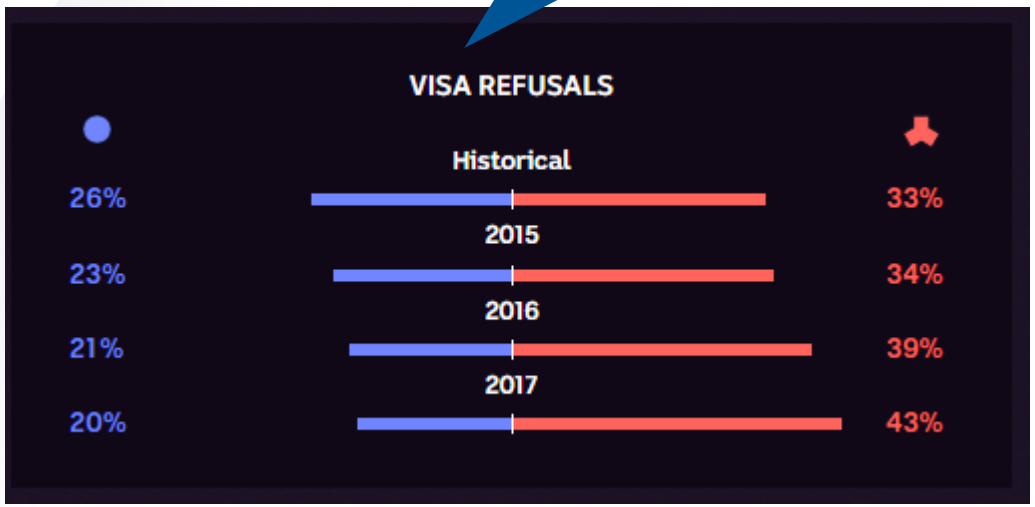
An example: the UK Home Office



Risk factors included your skin tone in your photo – darker skin tones were reported to be flagged as having “poor image quality”



With all other variables held constant, the algorithm resulted in applicants from Country B being significantly more likely to have their visa refused



Overview and image credit to: https://www.abc.net.au/news/2022-12-12/robodebt-algorithms-black-box-explainer/101215902

What does this mean for evaluation?

more and more AI and ADM used in programs

we need to understand how the technology works not only to evaluate it, but to be part of the ethical safeguards surrounding its proper use

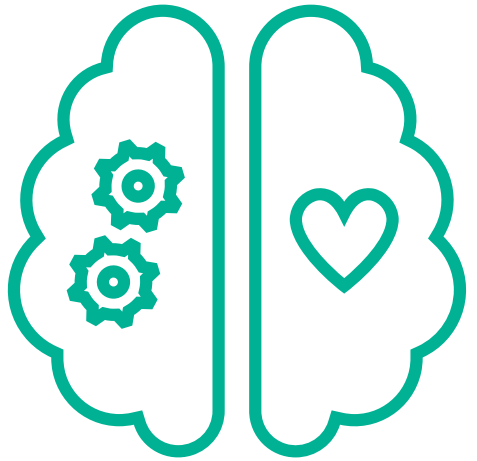
Parameters for evaluating AI-enabled programs

1. evaluate at all stages of the program lifecycle:
   - model design
   - training
   - testing
   - implementation
   - post-implementation

2. evaluate more than usual to understand where the human is in the system, and how oversight, governance and the avoidance of bias is being managed (also with special attention paid to the training data)

3. determine the impact as you would for any other evaluation, but with a particular focus on:
   - the quality of the training and/or input data
   - the decision-making process
   - the impact on the human, considering both positive and negative outcomes

4. but this only works if you understand the technology yourself



Some tips

- it's always handy to have a sense of better practice, so that you can assess the program under evaluation against better practice features
- in this context, be aware of and familiar with:
  - Australia's AI Ethics Framework and Principles
  - eSafety Commissioner's Safety by Design approach, including principles and assessment tools
  - DTA and DISR's Interim guidance for agencies on government use of generative Artificial Intelligence platforms
  - IBM Policy Lab Precision Regulation for Artificial Intelligence recommendations
  - OECD AI principles and recommendations
  - EU AI Act
- a lot to be across?
  - just work on building your knowledge slowly and finding resources that are of use to you
  - webinars are really useful for immersion on the topic. CSIRO's National AI Centre is a great place to start!
  - jargon is jargon, no matter the field – remember how complicated program evaluation is to a layperson? And yet you've learned that, you can learn this too

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Free resources to help you

DIY Program Evalution

Build capacity and culture

Build your own monitoring and evaluation framework

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Quality Outcomes.

More free resources

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We would love to connect!

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