

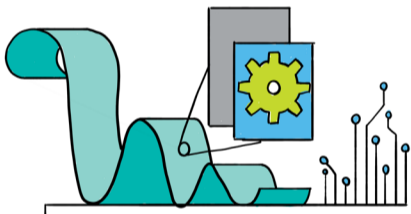


## WHAT ARE ALGORITHMS?

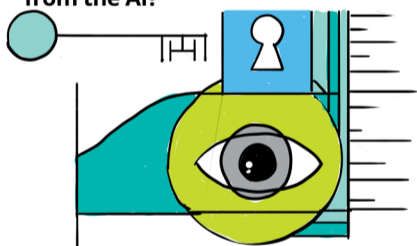
Have you increasingly found yourself hearing terms like 'AI', 'machine learning' or 'coding'. Now, more than ever, algorithms are driving decisions and outcomes in everyday life and business, sometimes in an unseen, unchecked way.

Algorithms, by means of programmed outputs or artificial intelligence (AI), have become integrated into the business processes of organisations, governments and societies. This increased dissemination of algorithms warrants assurance and governance, which enables your algorithms to be leveraged to enhance efficiencies, accuracy, quality and security.

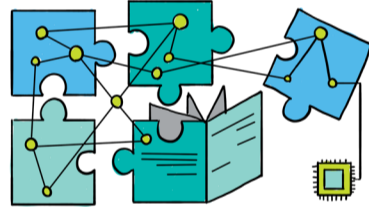
## WHAT SHOULD I BE THINKING ABOUT?



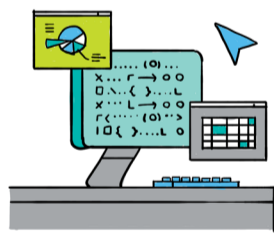
Can you explain how the underlying algorithm driving the AI works? Is there unintended bias in the results from the AI?



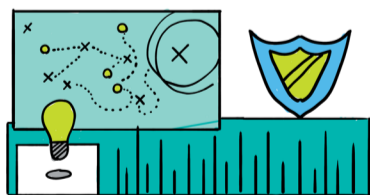
Are you compliant with the regulatory requirements associated with your organisation's use of AI?



Have you challenged or assessed the outputs from the AI? Has adequate testing been performed?



Do you have an inventory of the algorithms in use at your organisation? Have you identified risks associated with AI?



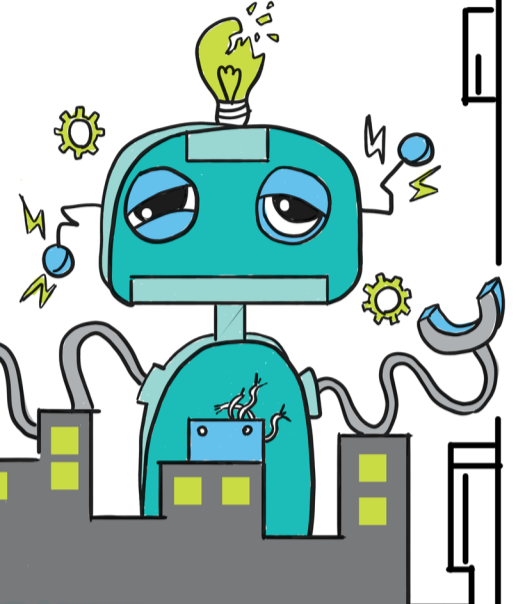
What lines of defense do you currently have over your AI? Are adequate controls in place?



Algorithms and AI can bring many benefits to your organisation, but these benefits come at a risk.

The potential consequences of defective, outdated or non-compliant algorithms include everything from lawsuits, regulatory fines, reputational damage and destruction of shareholder value.

## WHAT HAPPENS WHEN THEY MALFUNCTION?



**\$200M+**

The SEC fined a multinational insurance company \$200+ million for investor losses caused by a known error in investment algorithm

**\$1.5B+**

A class action lawsuit due to a faulty Income Compliance algorithm resulted in \$1.5+ billion settlement

**\$2M+**

A major bank was required to write-off over \$2m in loan balances due to a programming error in their automated serviceability calculator

**\$10M**

The SEC charged a stock exchange \$10 million for "poor systems and decision making"

**20,000**

A stock exchange's computer malfunction caused almost 20,000 erroneous trades, that were later cancelled

**\$7B**

An error in the trading software of a financial services company resulted in the accidental purchase of almost \$7 billion shares within an hour

**Gender Discrimination**

A machine learning recruitment tool was found to be biased against women

**Racial Discrimination**

Racial bias in a medical algorithm was found to favour attending to white patients over sicker, black patients

## WHAT ARE THE REGULATOR'S EXPECTATIONS?

### International Regulation

On April 21 2021, the European Commission proposed the **first legal framework on AI ever**, which addresses the risks of AI and was introduced in recognition and overall agreement of the need for action to regulate the algorithmic environment.

How it intends to achieve that...

Ensuring legal certainty that encourages innovation and investment into AI by creating AI Regulatory Sandboxes.

Incorporating a single standard across the EU to prevent fragmentation.

### Domestic Regulation

Australian Government Department of Industry, Science, Energy and Resources: AI Ethics Framework

Reliability and safety

Human, social and environmental wellbeing

Contestability and accountability

Transparency and explainability

Fairness

Privacy protection and security

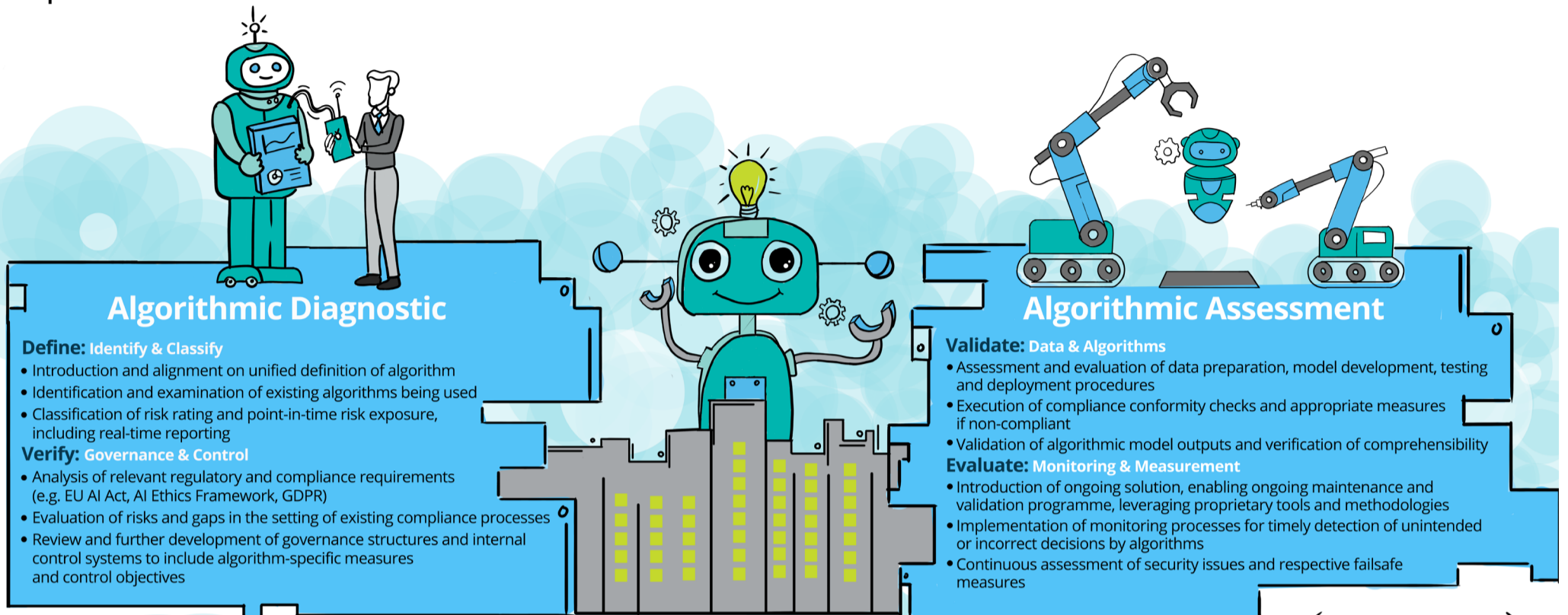
Human-centred Values

HOW WE REGULATE ARTIFICIAL INTELLIGENCE SYSTEMS IS ONE OF THE MOST URGENT QUESTIONS FACING HUMANITY

# DELOITTE'S TOOLKIT

We like to think of your algorithms as another resource in your business. Personnel receive hands on and dedicated support, including through structured reporting lines, training, performance reviews, development and annual leave allowance. Algorithms are often built and then left to operate alone without guidance or support.

Just as we do for our people, we should treat our algorithms with the care and support that they deserve and help them to perform their best!

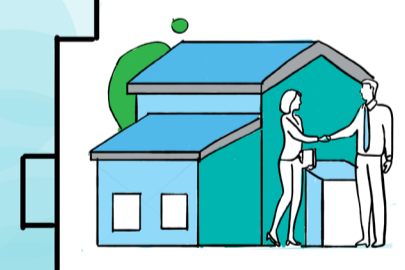


## WHAT WE HAVE DONE

Deloitte has already helped clients gain confidence in their data, algorithms and processes across sectors and industries



**Financial Services**  
We conducted a review of the processes, data, and underlying algorithms used by a bank to classify home loans into 'owners' and 'investors'. We identified there was a discrepancy in the logic underpinning the algorithm's classification of 'owner' and 'investor' and the bank's expectation.



**Property**  
We reviewed the process and underlying algorithms that a property management group implemented to assess the rent relief they were required to provide tenants throughout the COVID-19 period. We identified that their process was effective, and the rent relief they provided tenants was proportionate.



**E-Commerce**  
We tested the algorithmic product recommendation engine of a health insurance comparison and recommendation service. We identified a bias built into the algorithm that contradicted the marketing message of the business.



**Healthcare**  
We analysed 100% of transactions for a health services provider to confirm that the revenue generated through the automated billing algorithm was in line with the contractual arrangements in place.

## DELOITTE AI INSTITUTE

DELOITTE NAMED A LEADER IN THE WORLDWIDE AI BUSINESS SERVICES 2021 VENDOR ASSESSMENT BY INTERNATIONAL DATA CORPORATION



In line with our efforts, as a leading provider of assurance services relating to AI, Deloitte has developed the AI Institute. Deloitte AI Institute's mission is to guide the development of trustworthy, powerful AI solutions by fostering a network of like-minded organisations and facilitating cutting edge knowledge-sharing to accelerate Australia's AI agenda.

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