

Bond University

# Bond Law Review

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Volume 35

Issue 1

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2023

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# Legal Considerations in Machine-Assisted Decision-Making: Planning and Building as a Case Study

YEE-FUI NG, \* ERIC L WINDHOLZ<sup>+</sup> AND JAMES MOUTSIAS<sup>^</sup>

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## Abstract

*The rise of automated decision-making in government poses both benefits and challenges. This article identifies and examines legal considerations relevant to governments and businesses in automating existing decision-making processes, focussing on planning permits and building approvals as a case study. It examines issues of transparency, algorithmic bias, privacy, data and intellectual property rights, as well as the implications of the use of generative Artificial Intelligence (AI). It also considers legal issues including whether decisions can be automated and if so, whether they are susceptible to judicial and administrative review; legal liability for damage caused by the use of AI in government decision-making; and the admissibility of AI-generated information. It is argued that although the use of AI provides significant benefits in terms of speed, efficiency and quality of decision-making, attention to the considerations of transparency, responsibility, privacy, liability and admissibility is required to minimise the risks of utilising AI systems.*

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\* Associate Professor, Faculty of Law; and Deputy Director, Australian Centre for Justice Innovation, Monash University. This article draws on work on a project funded by the Building 4.0 CRC, as its first project, entitled 'ePlanning and eApprovals – Scoping Study'. Further details are available here: <<https://building4pointzero.org/projects/eplanning-and-eapprovals-scoping-study/>>.

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## I Introduction

In recent years, Australian Federal and State governments as well as private sector organisations have been moving towards implementing machine-assisted decision-making systems.<sup>1</sup> There are obvious benefits associated with moving to digital platforms and introducing automation, towards achieving greater speed, efficiency and quality of decision-making. Achieving efficiency goes towards competency and adequacy of performance and towards attaining a desired effect.<sup>2</sup> This in turn increases the cost-effectiveness, accuracy and precision of decision-making.<sup>3</sup>

While embracing technology, including Artificial intelligence ('AI'), is not only beneficial and in many ways essential to the progress of both the public and private sectors, there are issues that must be considered when designing and implementing these systems, particularly for government. Government decision-making is governed by longstanding principles of administrative law, which is assumed to apply to human decision-makers.<sup>4</sup> Introducing AI into the mix will present a vast array of new complications which, although not insurmountable, require careful consideration before embarking upon this new journey.

This article will examine the legal considerations that governments and businesses should take into account in the move towards machine-assisted decision-making, utilising the planning and building sector (and the State of Victoria's regulation of planning and building permits and approvals) as its case study. The planning and building sector provides an instructive case study. It is a sector where industry is leading the way in the use of digital technology to plan, design and construct buildings, and where governments have sought to reform their processes to facilitate the use of technology; delivering benefits both to industry in terms of quicker and cheaper processes, and to the community in terms of better decision-making and urban infrastructure.<sup>5</sup> It also is an area where decision-making criteria vary

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<sup>1</sup> Will Bateman, 'Algorithmic Decision-Making and Legality: Public Law Dimensions' (2020) 94(7) *Australian Law Journal* 520, 523-4. See eg, Australian Government, *Digital Transformation Agency* (Web Page) <<https://www.dta.gov.au/>>; and Victorian Government, *About the Digital Strategy and Transformation Branch* (Web Page) <<https://www.vic.gov.au/about-digital-strategy-and-transformation-branch>>.

<sup>2</sup> *ASIC v RI Advice Group* [2022] FCA 496.

<sup>3</sup> In an AI context, precision is defined as 'the ratio of system-generated results that correctly predicted positive observations (True Positives) to the system's total predicted positive observations, both correct (True Positives) and incorrect (False Positives)'. Accuracy is defined as 'a ratio of the correctly predicted classifications (both True Positives + True Negatives) to the total Test Dataset'. '4 Things you Need to Know about AI: Accuracy, Precision, Recall and F1 Scores' *Lawtomed Blog*, Web Page <<https://lawtomed.com/accuracy-precision-recall-and-f1-scores-for-lawyers/>>

<sup>4</sup> Bateman, (n 1), 520.

<sup>5</sup> See eg ePlanning and eApprovals – Scoping Study, part of the Building 4.0 Cooperative Research Centre (CRC), an industry-led research initiative co-funded by the Australian

from the objective and quantifiable to criteria that are subjective and qualitative and about which there can be much disagreement and disputation. All of this makes it a rich area from which to explore the benefits and challenges associated with the use of machine-assisted decision-making.

This article proceeds as follows: First, it will outline the different types of AI systems and their use within the planning and building sector (Part II). Following this, Part III will discuss legal issues, such as the adequacy of administrative law principles in dealing with AI, as well as legislative, liability and admissibility considerations. These include issues of transparency, algorithmic bias, privacy, data and intellectual property (IP) rights, the implications of the use of generative AI, as well as doctrinal issues. It is argued that although the use of AI provides significant benefits in terms of speed, efficiency and quality of decision-making, attention to the considerations of transparency, responsibility, privacy, liability and admissibility is required to minimise the risks of utilising AI systems.

At the outset, it is worth observing that this article canvasses a very wide range of legal issues, spanning diverse areas of law. Each issue could be the subject of a separate treatise. However, it is not the purpose of this article to engage in an in-depth analysis of every aspect of each issue. The purpose of this article is more modest: to provide a primer for those considering entering this complex world.

## II Machine-Assisted Decision-Making in Planning and Building

### A *Definitions and Terminology*

Machine-assisted decision-making encompasses a wide-ranging constellation of technologies which include digital platforms and the use of some forms of AI that can make predictions or decisions using machine or human-based inputs.<sup>6</sup> AI itself is a broad term and can be further subdivided depending on the type of model or process used. This section will examine the different AI systems and briefly look at how some of these have been used so far in the planning and building sector.

In this article, we use the term ‘machine-assisted decision-making’ as a broad umbrella term to encompass the following three types of systems:

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Government that aims to develop an internationally competitive, dynamic and thriving Australian advanced manufacturing sector, delivering better buildings at lower cost. The ePlanning and eApprovals scoping study developed a road map for the phased design and implementation of an innovative digital platform to automate planning and building approval processes. See Building 4.0 CRC, *#1 ePlanning and eApprovals – Scoping Study* (Web Page) <<https://building4pointzero.org/projects/eplanning-and-eapprovals-scoping-study/>>.

<sup>6</sup> Australian Human Rights Commission, *Human Rights and Technology: Final Report (2021)* 37.

- Digital platform – where the decision-making process is entirely done by a human decision-maker, but with the use of an online platform.
- AI-assisted decision – where the decision is ultimately made by a human decision-maker but an AI system provides guidance, potentially in the form of reports or recommendations, used by the decision-maker.
- AI-made decision – where the process is fully automated and the decision is made by the AI system itself.

It is important to also distinguish between the types of AI and the way in which they work. AI and its use for decision-making ranges from deterministic systems employing relatively simple binary logic<sup>7</sup> all the way to ‘deep learning’ machines (machine learning systems), which make probabilistic predictions based on complex algorithms that sometimes go beyond what humans can understand.<sup>8</sup>

Deterministic systems are designed by using ‘rules as code’ – that is, a coded version of the rules (or law) that can be understood and used by a computer.<sup>9</sup> This sort of expert system works well with objective criteria in decision-making, as a simple yes/no response will allow it to continue to work towards a decision.<sup>10</sup> An example of this type of system is a simple website chatbot. This tool allows users to type a question and then, based on the words used, it selects from a database a predetermined answer that it has decided fits best with what was asked. This is a relatively simple example, as there can be many more steps involved in the process. However, the features remain the same – there will be a predetermined output depending on the type of input the system receives.

‘Deep learning’ or probabilistic systems, on the other hand, derive rules from historic data to make inferences/predictions using machine learning.<sup>11</sup> With machine learning, there are models that are interpretable by humans and those that can generate models that are uninterpretable.<sup>12</sup> These deep learning machines are constantly updating their own models as new data comes through, as their learning base changes in step with their use.<sup>13</sup> An example of this system would

<sup>7</sup> Monika Zalnieriute, Lyria Bennett Moses and George Williams, ‘The Rule of Law and Automation of Government Decision-Making’ (2019) 82(3) *Modern Law Review* 425, 432.

<sup>8</sup> Arun Rai, ‘Explainable AI: From Black Box to Glass Box’ (2020) 48 *Journal of the Academy of Marketing Science*, 137, 138.

<sup>9</sup> James Mohun and Alex Roberts, ‘Cracking the Code: Rulemaking for Humans and Machines’ (2020) 42 *OECD Working Papers on Public Governance* 16.

<sup>10</sup> Per Ola Olsson et al, ‘Automation of Building Permission by Integration of BIM and Geospatial Data’ (2018) 7(8) *International Journal of Geo-Information* 307, 317.

<sup>11</sup> Zalnieriute, Moses and Williams (n 7) 427.

<sup>12</sup> Rai (n 8) 138.

<sup>13</sup> Marion Oswald, ‘Algorithm-Assisted Decision-Making in the Public Sector: Framing the Issues Using Administrative Law Rules Governing Discretionary Power’ (2018) 376 (2128) *Philosophical Transactions of the Royal Society* 1, 3.

be a self-driving car.<sup>14</sup> Such a system is programmed with an extensive set of data to be able to recognise patterns and symbols in a way that enables it to interact with the world and improve its performance over time.

### **B Case Study: Use of Machine-Assisted Decision-Making in the Planning and Building Sector**

A useful way to conceive of the difference between these systems is to consider the practical use for each, using the planning and building sector as a case study. To demonstrate this, we will use examples from a Victorian Residential Code, in this case, the Darebin Planning Scheme.<sup>15</sup> Under clause 54.03-2 Building Height, the maximum building height must not exceed 9 metres.<sup>16</sup> This is an *objective* factor that could be automated via a deterministic system of AI, where the input of a proposed building's height would be analysed by the machine; if it were less than 9 metres, it would be approved and, if more than 9 metres, then it would not be approved.

Conversely, clause 54.02 deals with Neighbourhood Character.<sup>17</sup> This clause stipulates that a dwelling's design must 'respect the existing or preferred neighbourhood character'.<sup>18</sup> This is an inherently *subjective* matter, which can have multiple interpretations. A deterministic AI system would not be able to comprehend the uncertainty of the criterion and, as such, a machine learning system that employs an algorithm based on extensive previous data about what matches neighbourhood character would be better equipped to deal with such a decision. Furthermore, this is a situation where an AI-assisted decision may be more appropriate, given that there is no clear 'right or wrong' answer to the question from an objective perspective. It might be useful to have the AI tool indicate a prediction on the matter of neighbourhood character and for a human decision-maker to make the ultimate finding.

Machine-assisted decision-making in the planning and building sector often involves the use of Building Information Modelling (BIM).<sup>19</sup> BIM is the process of creating and using digital models for design, construction and management of projects.<sup>20</sup> BIM allows for

<sup>14</sup> Andrew D Selbst, 'Negligence and AI's Human Users' (2020) 100 *Boston University Law Review* 1315, 1333.

<sup>15</sup> *Planning Scheme – Darebin Planning Scheme* (Vic).

<sup>16</sup> *Ibid* cl 54.03-2.

<sup>17</sup> *Ibid* cl 54.02.

<sup>18</sup> *Ibid* cl 54.02-1.

<sup>19</sup> Kyungha Lee et al, 'An Introduction to South Korea's Knowledge Base Development Project' Conference Paper Presented at Department of Architectural Engineering, Yonsei University, Republic of Korea, 1.

<sup>20</sup> Maria Christina Georgiadu, 'An Overview of Benefits and Challenges of BIM adoption in UK Residential Projects' (2019) 19(3) *Construction Innovation* 298, 299.

projects to progress more quickly and be more cost effective by allowing all members of a project team to have access to data necessary for them to complete their work.<sup>21</sup>

There is scope for the use of BIM to assist in the process relating to building permits.<sup>22</sup> While BIM itself is just a digital data platform, it can be used in conjunction with other AI tools to allow for a streamlined process in the approvals process.<sup>23</sup> Better Regulation Victoria has indicated that a move to a state-wide e-approvals platform would ‘underpin substantial efficiencies’ in the process.<sup>24</sup> It has emphasised the need for the uptake of online platforms for accepting and processing permits and enabling applicants and objectors to track progress.<sup>25</sup>

As the permit process is often long, difficult to track,<sup>26</sup> and can elicit errors,<sup>27</sup> automated methods would improve efficiency on the authority side, and potentially enable owners and developers to carry out their own checks before submitting applications.<sup>28</sup>

BIM can thus be seen as a gateway to partially, and potentially fully, automated decisions in the approval phase of a project.

### C *Specific Planning and Building Laws*

We now outline the planning and building laws in Victoria. These laws provide the context for our subsequent examination of the legal issues that arise from the use of AI in this sphere.

#### 1 *Planning and Environment Act 1987(Vic)*

An application for a planning permit under the *Planning and Environment Act 1987(Vic)* (*‘Planning and Environment Act’*) must be made to the relevant authority in accordance with the regulations.<sup>29</sup> The relevant responsible authority will be either the municipal council, the Minister, or any other person specified in the *Planning and Environment Regulations 2015(Vic)*.<sup>30</sup> It is this authority that decides whether to grant or refuse a planning permit.<sup>31</sup> This suggests that AI-assisted decision-making can be permissible under the current

<sup>21</sup> Her Majesty’s Government, *Building Information Modelling* (2012) Industrial Strategy: Government and Industry in Partnership, 6; Kaleem Ullah et al, ‘BIM Adoption in the AEC/FM Industry – The Case for Issuing Building Permits’ (2020) 24(6) *International Journal of Strategic Property Management* 400, 401.

<sup>22</sup> Olsson et al (n 10) 307.

<sup>23</sup> Ibid 314.

<sup>24</sup> Better Regulation Victoria, ‘Planning and Building Approvals Process Review’ (2019) Discussion Paper 63.

<sup>25</sup> Ibid 43, 50, 56, 58, 63, 64.

<sup>26</sup> Ibid 34.

<sup>27</sup> Ullah et al (n 21) 402.

<sup>28</sup> Olsson et al (n 10) 308.

<sup>29</sup> *Planning and Environment Act 1987(Vic)* s 47.

<sup>30</sup> Ibid s 13.

<sup>31</sup> Ibid s 61.

legislation where the final decision-maker is a human, while AI-made decisions may not be covered within the scope of the legislation unless there is a legislative amendment inserting a deeming provision.

Applications for a planning permit must be made ‘in writing’ with specified information,<sup>32</sup> but this rule does not explicitly state the application must be in the form of paper plans. There is no prescribed application form in the *Building Regulations 2018* (Vic) (*‘Building Regulations’*) for a building permit application. ‘Writing’ is defined as including all modes of representing or reproducing words, figures, or symbols in a visible form.<sup>33</sup> As such, digital representations of plans are likely to fall under the definition of writing for the purposes of both relevant acts.

## 2 *Building Act 1993* (Vic)

Under the *Building Act 1993* (Vic) (*‘Building Act’*), building permit applications are made to a ‘municipal building surveyor’ or a private building surveyor (referred to as the ‘relevant building surveyor’).<sup>34</sup> The form of the application must be as prescribed by Schedule 4 of the Regulations.<sup>35</sup> This form lists specified information that must be given.

The decision to grant or refuse a building permit is to be made in accordance with s 19 of the Act:

(1) The relevant building surveyor (ie a municipal building surveyor or private building surveyor) must decide an application for a building permit by—

- (a) issuing the permit; or
- (b) issuing the permit with conditions; or
- (c) refusing the permit.

Although the *Building Act* contemplates that a registered practitioner (including building surveyors) can be a natural person or a body corporate,<sup>36</sup> the Act defines municipal building surveyor more narrowly as ‘a person for the time being appointed, employed or nominated by a council as its municipal building surveyor for the purposes of this Act’.<sup>37</sup> As such, the legislation seems to suggest that in the case of a municipal building surveyor, it must be a person who makes the decision to issue/refuse a permit. This implies that AI-assisted decision-making is allowed under the legislation as long as a human makes the final decision, while AI-made decisions may not be permissible unless

<sup>32</sup> *Planning and Environment Regulations 2015* (Vic) r 13.

<sup>33</sup> *Interpretation of Legislation Act 1984* (Vic) s 38.

<sup>34</sup> *Building Act 1993* (Vic) s 17.

<sup>35</sup> *Building Regulations 2018* (Vic) r24; sch 4 Form 1.

<sup>36</sup> *Building Act 1993* (Vic) s 170.

<sup>37</sup> *Ibid* s 3.

there is a legislative amendment inserting a deeming provision that allows the decision to be made by a computer.

Furthermore, if the application is refused, notice must be given 'without delay' to the applicant, along with reasons for the refusal.<sup>38</sup> Accordingly, any AI used in the decision-making process, even with amendments, would have to be able to provide notice and a statement of reasons.

With this overview of Victoria's planning and building laws as context, the article now proceeds to examine legal issues that arise should AI be introduced into the sector.

### III Legal Issues

As observed earlier, machine-assisted decision-making raises a number of administrative law, legislative, liability and admissibility issues. When used as a decision-making tool, AI has some key differences from human decision-making that the law must accommodate. The first is that the reasoning behind the decision is not always discoverable, either because of the nature of the system itself, or because proprietary interests in the AI can hold the inner workings as trade secrets. This is commonly referred to as the transparency problem.<sup>39</sup> The second consideration relates to the training of machine learning programs which has the possibility of ingraining existing biases in the AI (or even of creating new ones). Third, and although not completely unique to AI, there are issues of privacy and data protection presented by such systems that must be considered. Finally, there are a range of administrative law issues that are enlivened by reason of the decision not being made by a person or a group of people. Each of these issues is considered below.

#### A Transparency

There are two main sources contributing to a lack of transparency in automated decision-making: the inherent difficulties in understanding an algorithm and the protection of the inner workings of technology by proprietary rights. These can be classified as the 'technical black box' and the 'legal black box'.<sup>40</sup>

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<sup>38</sup> Ibid s 25.

<sup>39</sup> Warren J von Eschenbach, 'Transparency and the Black Box Problem: Why We Do Not Trust AI' (2021) 34 *Philosophy & Technology* 1607, 1608.

<sup>40</sup> Han-Wei Liu, Ching-Fu Lin and Yu-Jie Chen, 'Beyond *State v Loomis*: Artificial Intelligence, Government Algorithmization, and Accountability' (2019) 27(2) *International Journal of Law and Information Technology* 122, 135.

## 1 *The Technical Black Box: Inherent Difficulties in Understanding*

When it comes to government decisions, it is always desirable for persons affected by a decision to know *why* it was made. Systems need to be understood so that they are accountable.<sup>41</sup> The inexplicability of AI is thus a problem, especially when it comes to giving reasons.<sup>42</sup> It should always be possible to find out the reasons as to why a system made a decision,<sup>43</sup> and whether those reasons are legally relevant. If this cannot be done, then affected persons will be unable to seek judicial review. A lack of reasons (and opaqueness in the system) can also undermine its legitimacy in terms of the system's acceptability and credibility. Furthermore, legislation involving government decision-making often mandates the giving of reasons for reaching a decision,<sup>44</sup> thus decisions that are not accompanied by reasons may be invalid.

This issue has given rise to the desire for 'explainable AI' ('XAI'). XAI is the class of systems that provide visibility into how they make decisions and predictions.<sup>45</sup> There are two issues to address in relation to explainability – inscrutability and non-intuitiveness.

### (a) *Inscrutability*

While deterministic systems can and often do provide a criterion chain that is understandable, machine learning can sometimes fail to do this. Machine learning AI employs complex algorithms that may often surpass a human's ability to review or understand.<sup>46</sup> In these instances, the sophistication of the model, which involves rules that are so numerous, intricate and interdependent that they defy practical inspection mean that it is impossible to comprehend.<sup>47</sup> This is especially prevalent in the case of deep neural network models, which are highly popular but often inscrutable.<sup>48</sup> An example of a system employing deep neural networks is image recognition, used for a wide variety of purposes such as medical diagnostics and facial recognition.

These systems are utilised in spite of their lack of explainability because there is widespread belief that there is a trade-off between

<sup>41</sup> Zalnieriute, Moses and Williams (n 7) 455.

<sup>42</sup> Jennifer Cobbe, 'Administrative Law and the Machines of Government: Judicial Review of Automated Public-Sector Decision-Making' (2019) 39(4) *Legal Studies* 636, 648; Lyria Bennett Moses and Edward Santow, 'Accountability in the Age of Artificial Intelligence: A Right to Reasons' (2020) 94(11) *Australian Law Journal* 829.

<sup>43</sup> Dominique Hogan-Doran, 'Computer Says "No": Automation, Algorithms and Artificial Intelligence in Government Decision-Making' (2017) 13(3) *The Judicial Review* 345, 381.

<sup>44</sup> *Administrative Law Act 1978* (Vic) s 8; *Victorian Civil and Administrative Tribunal Act 1998* (Vic) s 45; *Building Act 1993* (Vic) s 25; *Planning and Environment Act 1987* (Vic) s 65(2).

<sup>45</sup> Rai (n 8) 137.

<sup>46</sup> Selbst (n 14) 1331.

<sup>47</sup> Andrew D Selbst and Solon Barocas, 'The Intuitive Appeal of Explainable Machines' (2018) 87 *Fordham Law Review* 1085, 1094.

<sup>48</sup> Rai (n 8) 137.

transparency and accuracy.<sup>49</sup> As Berk and Bleich have noted, '[f]orecasting and explanation are different enterprises that can work at cross purposes'.<sup>50</sup> This is because more variables and more relationships between them will be both more complex and more accurate.<sup>51</sup> As the algorithm links more and more variables in different ways, it becomes increasingly indecipherable to the point that a human would not be able to effectively explain the AI's reasoning process.

The claim that there is a trade-off between transparency and accuracy has been disputed strongly,<sup>52</sup> with the contention that there just needs to be more work put into building interpretable machines. This is best done in the building stage or learning stage, rather than attempting to create an ad hoc explanation of a system.<sup>53</sup> The methods to combat this, however, are mainly done by limiting both the type of system employed and the type of data to be reviewed by the algorithm.<sup>54</sup> The effect of such steps may be limited, however, given the nature of machine learning itself.<sup>55</sup> As such, while there are arguments that interpretable machines are just as good, they will require more thought and effort to build<sup>56</sup> and, it appears, will not be open to as many uses as their inscrutable counterparts.<sup>57</sup>

### *(b) Non-Intuitiveness*

Another transparency issue is where an AI model is interpretable, but its decisions are based on factors that seem illogical to the end result. In these instances, it is the inability to 'weave a sensible story' to account for the statistical relationships that gives rise to concerns.<sup>58</sup> A particularly confusing aspect of this is where the use of seemingly irrelevant factors can increase the accuracy of an algorithm's output.<sup>59</sup> This is largely due to the way in which machines differ from humans in how they 'think'. The necessarily reductive nature of data means that computers can only measure certain things and that these will often differ from how we as humans assess information.<sup>60</sup> For example, in deciding whether to filter certain emails as 'spam', the algorithm does

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<sup>49</sup> Ibid 138.

<sup>50</sup> Richard A Berk and Justin Bleich, 'Statistical Procedures for Forecasting Criminal Behaviour' (2013) 12 *American Society of Criminology* 513, 516.

<sup>51</sup> Selbst and Barocas (n 47) 1110.

<sup>52</sup> Cynthia Rudin, 'Stop Explaining Black Box Machine Learning Models for High Stakes Decisions and Use Interpretable Models Instead' (2019) 1(5) *Nature Machine Intelligence* 206.

<sup>53</sup> Ibid.

<sup>54</sup> Selbst and Barocas (n 47) 1111.

<sup>55</sup> David Lehr and Paul Ohm, 'Playing with Data: What Legal Scholars Should Learn About Machine Learning' (2017) 51 *University of California Davis Law Review* 653, 707.

<sup>56</sup> Rudin (n 52) 210.

<sup>57</sup> Selbst and Barocas (n 47) 1123.

<sup>58</sup> Ibid 1097.

<sup>59</sup> Berk and Bleich (n 50) 515.

<sup>60</sup> Selbst (n 14) 1336.

not look at the substance or category of the emails. Instead, it employs a ‘bag of words’ approach based on the appearance and frequency of certain words used in millions of emails that have been classified as spam in the past.<sup>61</sup>

This key difference in reasoning processes may mean that machine learning is not a suitable AI tool for administrative decision-making. Administrative law is concerned with categorising factors into those that must be considered, may be considered and must not be considered. On the other hand, AI typically uses as many factors as possible because, all else being equal, more factors will usually increase predictive performance even when the relevance of such factors seems immaterial or questionable.<sup>62</sup>

The upshot of all of this is that machines will know what shoes to advertise to us based on which breakfast cereal we eat.<sup>63</sup> Such an outcome is perhaps good for marketing companies, but potentially unacceptable when it comes to the legal field. If the inclusion of what would normally be considered – at best irrelevant and at worst improper – is accepted as increasing accuracy, then the decision may be susceptible to legal challenge on the judicial review ground of irrelevant consideration.<sup>64</sup>

### *(c) The Solution*

Ultimately, from a legal perspective, the discussion of whether there is a trade-off between transparency and accuracy, and to what extent, is a moot point. There will need to be, at the very least, a balancing act between performance and transparency so that we are not left with a ‘black box’ problem where those affected by decisions are unable to comprehend how such decisions are being made.<sup>65</sup> Those who design the system need to know how it works, and its reasons must also make sense for non-technical users.<sup>66</sup> In the context of planning and building, this includes applicants, objectors and decision-makers. In order to preserve basic administrative law values, in particular fairness and transparency,<sup>67</sup> and to enable affected persons to challenge decisions, reasons for decisions should be able to be generated by AI systems.<sup>68</sup> As such, there may have to be a choice made in the design process about

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<sup>61</sup> Ibid 1334.

<sup>62</sup> Oswald (n 13) 10-11.

<sup>63</sup> Selbst and Barocas (n 47) 1097.

<sup>64</sup> Oswald (n 13) 11.

<sup>65</sup> Yee-Fui Ng et al, ‘Revitalising Public Law in a Technological Era: Rights, Transparency and Administrative Justice’ (2020) 43(3) *University of New South Wales Law Journal* 1041, 1052-4, 1073.

<sup>66</sup> Cobbe (n 42) 648.

<sup>67</sup> Ng et al (n 65) 1046.

<sup>68</sup> Australian Human Rights Commission, *Human Rights and Technology: Final Report* (2021) 62-3; see particularly Recommendation 5.

the type of AI employed and whether or not to limit its extent so that it can be understood by end users. This includes a consideration of what sort of data to include as factors in the algorithm.

## **2 *The Legal Black Box: Proprietary Secrets***

Even when AI can be understood, there is also the issue of the owner of AI technology claiming a proprietary right to the inner workings of such technology. For example, the Correctional Offender Management Profiling for Alternative Sentences (COMPAS) system in the United States is used to help judges with sentencing by generating a risk score to show the likelihood of recidivism.<sup>69</sup> The company that owns the technology holds proprietary rights and thus the methods employed by the system are not known by the judiciary (and presumably are also not known by the legislature and executive).<sup>70</sup> As such, persons subject to a COMPAS score, and indeed all other parties involved in the sentencing of that person such as judges, defenders and prosecutors, have no means of challenging the score as they cannot point to any particular error in process that the system makes. In Australia, trade secrets are exempt under the *Freedom of Information Act*,<sup>71</sup> thus similar problems are likely to be experienced where the manufacturers of technology do not wish to disclose the algorithms employed.

In both instances of inherent difficulties in understanding and, in the case of trade secrets, the same evidentiary problem arises: how can one mount an effective challenge to a decision without, at the very least, a general gist of the reasons for that decision and the analytical process by which those reasons were reached? Furthermore, how can the government interrogate and evolve the system to meet future needs if it does not have the legal ability to do so?

### **B *Machine Learning and Algorithmic Bias***

As discussed above, there is a difference between deterministic ‘expert systems’ that employ ‘hierarchical rules and variables’ in order to determine a solution<sup>72</sup> and machine learning, which is probabilistic and can ‘mimic a human’s brain’.<sup>73</sup> Machine learning can carry biases and assumptions because the data that is pre-labelled can and usually does reflect its historic context; for example, crime data reflecting negatively

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<sup>69</sup> Liu, Lin and Chen (n 40) 122, 126.

<sup>70</sup> Zalnieriute, Moses and Williams (n 7) 436.

<sup>71</sup> Ng et al (n 65) 1055.

<sup>72</sup> Liu, Lin and Chen (n 40) 136.

<sup>73</sup> Ibid 136.

on minority groups.<sup>74</sup> This is a particular concern, as bias is often embedded in data that is not readily noticeable.<sup>75</sup>

Bias in automated decisions poses notable challenges in administrative law, which has a rule prohibiting decision-makers who have an actual or apprehension of bias against them.<sup>76</sup> In the planning and building context, as each council has its own planning scheme, and may have its own particular approach or interpretation, there may be situations where one council's system is more or less favourable to applications generally. As such, if a council is pro-development, that culture will be burned into the algorithm if the system is trained at council level. Conversely, a council that has a stronger neighbourhood character preservation approach may potentially develop a system whereby applicants are disadvantaged due to that bias being embedded in the AI.<sup>77</sup> This emphasises the importance of:

- the level at which an AI system is to be implemented (ie individual council level or state-wide);
- the nature of the system (ie AI-assisted or AI-made); and
- the way in which training datasets are formulated and how they are used to inform the development of the system.

Moreover, there will be a need to critically evaluate potential biases and continually audit the system so that systematic errors that lead to incorrect categorisation do not occur, or are at least identified.<sup>78</sup>

However, as noted above, in many cases it is difficult to work out exactly how a decision is reached due to the inexplicability of the relevant algorithm<sup>79</sup> and, as such, there are significant issues about knowing if there is a bias in the process. When results do not readily illustrate a problem, even when there is bias in the data, underlying biases within the system may be overlooked as they are difficult to catch.

As such, there are challenges with machine learning and ensuring consistency and equality. However, with proper auditing, and a carefully scrutinised training dataset, machine learning can reduce arbitrary decisions and fix biases by applying criteria only relevant to

<sup>74</sup> Zalnieriute, Moses and Williams (n 7) 434.

<sup>75</sup> Sarah Lim, 'Re-Thinking Bias in the Age of Automation' (2019) 26(1) *Australian Journal of Administrative Law* 35, 44.

<sup>76</sup> *Ebner v Official Trustee in Bankruptcy* (2000) 205 CLR 337, 344-5 (Gleeson CJ, McHugh, Gummow and Hayne JJ). See Anna Huggins, 'Addressing Disconnection: Automated Decision-Making, Administrative Law and Regulatory Reform' (2021) 44(3) *University of New South Wales Law Journal* 1048, 1065-70.

<sup>77</sup> Tobias Baer, *Understand, Manage and Prevent Algorithmic Bias: A Guide for Business Users and Data Scientists* (Apress, 2019) 73.

<sup>78</sup> Administrative Conference of the United States, 'Agency Use of Artificial Intelligence' Conference Statement No 20, December 2019, 3.

<sup>79</sup> Cobbe (n 42) 639.

the decision.<sup>80</sup> This offers the promise of both better and quicker decision-making.

### C *Privacy, Data and IP Rights*

Good decision-making is evidence-based. The evidence invariably involves data belonging to or concerning individual persons or commercial or legal entities. Much has been written about government agencies' responsibility to protect privacy with respect to personally identifiable information in machine-assisted decision-making systems.<sup>81</sup> Victoria is governed by the *Privacy and Data Protection Act 2014* (Vic), which primarily concerns the protection of (1) 'personal information' and (2) public sector data.<sup>82</sup> Personal information has been held to have a narrow interpretation; it includes information from which an individual's identity can be ascertained, and information 'about an individual'.<sup>83</sup>

An eye also should be kept on international developments in this field, which can both impact the flow of data into Australia and influence the future evolution of Australian law.

In the EU, for example, the General Data Protection Regulation (GDPR) provides safeguards for individual privacy. These include the right of 'data subjects' to access the data held by a 'controller' along with the purpose(s) of its processing,<sup>84</sup> and the erasure of personal data once it is no longer needed.<sup>85</sup> The processing of personal data will only be lawful in certain circumstances, including where the 'data subject' has given consent or the processing is necessary for compliance with a legal obligation.<sup>86</sup> In addition, GDPR Article 22 can be used to challenge automated government decision-making through entitling the 'data subject' (the relevant person) to a right not to be subject to a decision based solely on automated processing.<sup>87</sup> Further, in the United Kingdom, the use of AI to gather personal information was found to be a breach of Article 8 of the European Convention on Human Rights (ECHR)<sup>88</sup> where a facial recognition tool was used by police to compare faces with those on a watch list.<sup>89</sup> This contravened the

<sup>80</sup> Zalnieriute, Moses and Williams (n 7) 448.

<sup>81</sup> Administrative Conference of the United States (n 78) 6; Moira Paterson, 'The Uses of AI in Government Decision-Making: Identifying the Legal Gaps in Australia' (2020) 89(4) *Mississippi Law Journal* 647.

<sup>82</sup> *Privacy and Data Protection Act 2014* (Vic) s 1.

<sup>83</sup> *Privacy Commissioner v Telstra Corporation Limited* [2017] FCAFC 4, [63]-[65].

<sup>84</sup> *General Data Protection Regulations*, (EU) 2016/679, Art 13 and 15 ('GDPR').

<sup>85</sup> *Ibid* Art 17.

<sup>86</sup> *Ibid* Arts 6-7.

<sup>87</sup> *Ibid* Art 22.

<sup>88</sup> Claire Hall, 'Challenging Automated Decision-Making by Public Bodies: Selected Case Studies from Other Jurisdictions' (2020) 25(1) *Judicial Review* 8, 14.

<sup>89</sup> *Ibid* 14.

Article's prohibition on public authorities' interference with a person's right to privacy.

The concept of due process in the United States has been used to obtain disclosure of information about the use of AI in decision-making to ensure that the automated decision is accurate, although the extent of information the court requires varies based on the circumstances of the case.<sup>90</sup>

The use of personally identifiable data is not a common feature in BIM and planning and building systems. However, they do rely on collaboration and the sharing of proprietary and confidential data.<sup>91</sup> The use of data was one of the top ranked concerns about the use of BIM raised by key stakeholders in the UK.<sup>92</sup> Such data obtained, received or held by a government agency is referred to as 'public sector data'.

There are two main issues relating to public sector data: first, issues may arise because of the government's use of the data it acquires. Second, issues may arise if a government fails to adequately protect and respect the data thus enabling others to misuse the data (for example, in breach of a third party's trade secret and/or other IP rights).

In terms of the first element of the government's use of data, shared data management has inherent cyber security risks.<sup>93</sup> BIM models may be corrupted during the transfer between design teams or in the transfer to and from the government platform and, as such, allocating responsibility for data protection is vital.<sup>94</sup> This may leave parties, including the government, open to litigation if such a breach occurs and results in loss. It may be that a statutory amendment will be required to shield governments from lawsuits resulting from hacking and other cybercrime.

In terms of the second element, namely governments failing to adequately protect and respect data, sharing models in BIM may result in plagiarism of ideas.<sup>95</sup> Therefore, more protection via intellectual property rights of BIM-generated data may be needed.<sup>96</sup>

Many of the concerns over data usage by government and sharing among other parties will be allayed by the consent of users of BIM AI. There may be a problem, however, of vitiated consent if BIM becomes mandatory.<sup>97</sup> When consent *must* be given to engage with a service, it lacks the essence of true consent. This is especially relevant for smaller

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<sup>90</sup> Eg *State v Loomis*, 881 NW 2d 749 (Wis 2016); *Michael T v Bowling No 2*, 15-CV-09655, 2016 WL 4870284, at 10 (SDW Va 13 Sep 2016).

<sup>91</sup> Olsson et al (n 10) 307.

<sup>92</sup> Robert Eadie, Tim McLernon and Adam Patton, 'An Investigation into the Legal Issues relating to BIM' (July 2015) *Royal Institute of Chartered Surveyors*, Presented at the Australasian Building Educators Association Conference, 7.

<sup>93</sup> Georgiadu (n 20) 305.

<sup>94</sup> Eadie, McLernon and Patton (n 92).

<sup>95</sup> Ibid.

<sup>96</sup> Ibid.

<sup>97</sup> Cobbe (n 42) 644.

and medium sized firms who have so far not taken up BIM at the same rate as larger firms.<sup>98</sup> This, however, can be overcome by a legislative mandate of BIM use.

### D *Implications of Generative AI*

An emerging issue is the implications of generative AI such as ChatGPT, when used by government.<sup>99</sup> Generative AI models are different from other predictive machine learning tools in that they generate new content in the form of text, images and audio in response to prompts.<sup>100</sup> A subset of generative AI is the large language model (LLM), which are trained on a vast array of text data, allowing it to specialise in the generation of human-like text.<sup>101</sup> LLMs, including ChatGPT, are widely utilised for functions ‘ranging from browsing to voice assistants, to coding assistance tools’.<sup>102</sup> There are thus ample opportunities for government to adopt such technologies. However, there remain significant risks for government adopting such technologies, such as the tendency for these technologies to ‘hallucinate’; that is, ‘produce content that is nonsensical or untruthful in relation to certain sources’.<sup>103</sup> Public sector agencies utilising hallucinating AI systems such as ChatGPT have the potential to create significant issues of legal liability. Therefore, caution is needed before such new AI tools are deployed within government.

### E *Administrative Law Issues*

From an administrative law perspective, arguably the most important issue that AI gives rise to is the need for the legislative framework to authorise and support the use of AI decision-making. Laws drafted in a world before AI will not have contemplated its use. Legislative frameworks therefore need to be closely scrutinised to determine if they permit the use of AI and whether legislative reform is necessary. We saw in our examination of Victoria’s planning and building legislation that while it is currently able to accommodate AI-assisted decision-making, it does not authorise or permit AI-made decisions. Legislative amendments will therefore be needed. How this might be done is

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<sup>98</sup> Georgiadu (n 20) 304.

<sup>99</sup> Open AI, ‘GPT-4 System Card’, (PDF, 2023) <<https://cdn.openai.com/papers/gpt-4-system-card.pdf>>; Open AI, ‘GPT-4 Technical Report’ (PDF, 2023) <<https://cdn.openai.com/papers/gpt-4.pdf>>; Andrew Perlman, ‘The Implications of ChatGPT for Legal Services and Society’, *The Practice* (Online, March/April 2023) <<https://clp.law.harvard.edu/knowledge-hub/magazine/issues/generative-ai-in-the-legal-profession/the-implications-of-chatgpt-for-legal-services-and-society/>>.

<sup>100</sup> Australian Government, Department of Industry, Science and Resources, *Safe and Responsible AI in Australia* (Discussion Paper, June 2023), 5.

<sup>101</sup> *Ibid.*

<sup>102</sup> Open AI, *GPT-4 System Card* (n 99)

<sup>103</sup> *Ibid.*

discussed below, together with a number of other administrative law doctrinal issues complicated by automated decision-making: what is seen as constituting a ‘decision’; who is the decision-maker; and what factors and criteria can be used in making a decision?

## 1 *What is a Decision?*

In Australia, judicial review requires there to be a ‘decision’ for which review is sought.<sup>104</sup> This is also the case at the State level in Victoria.<sup>105</sup> While there have not been many cases dealing with fully automated decisions, *Pintarich v Deputy Commissioner of Taxation* (*‘Pintarich’*)<sup>106</sup> considered whether or not a letter from the Australian Tax Office (‘ATO’) that was automatically written after the decision-maker, Mr Celantano, had ‘keyed in’ certain figures, was a decision.<sup>107</sup>

The Court held that a decision required:

1. A mental process of deliberation, assessment or analysis on the part of the decision-maker, and
2. An objective manifestation of the decision.<sup>108</sup>

As Mr Celantano had not undergone the relevant mental process, the Court ultimately found there was not a decision.<sup>109</sup> This has serious implications for automated decisions as it would mean they would not be amenable to judicial review under the *Administrative Decisions (Judicial Review) Act 1977*(Cth) (*‘ADJR Act’*).<sup>110</sup>

The majority judgment in *Pintarich* has been criticised however, for not engaging with the ‘underlying process in its analysis of whether a decision was made’.<sup>111</sup> Indeed it does seem counterintuitive based on the facts of the case – Mr Celantano inputting data to a letter is arguably a mental process,<sup>112</sup> no different from the way many other standard form letters would be written in administrative decisions. There may be, however, a difference between giving mental consideration to the input compared with consideration of the output or consideration of the actual decision. Kerr J in dissent stated that the definition of a decision should recognise that the advances of technology mean decision-making ‘can occur independently of human mental input’.<sup>113</sup> The applicability of

<sup>104</sup> *Administrative Decisions Judicial Review Act 1977*(Cth) s 5.

<sup>105</sup> *Victorian Civil and Administrative Tribunal Act 1998* (Vic) s 48; *Administrative Law Act 1978* (Vic) s 3.

<sup>106</sup> [2018] FCAFC 79 (*‘Pintarich’*).

<sup>107</sup> Ng et al (n 65) 1057.

<sup>108</sup> *Pintarich* [129].

<sup>109</sup> *Pintarich* [140].

<sup>110</sup> Yee-Fui Ng, and Maria O’Sullivan, ‘Deliberation and Automation – When is a Decision a “Decision”?’ (2019) 26(1) *Australian Journal of Administrative Law* 21, 30.

<sup>111</sup> Hall (n 88) 13.

<sup>112</sup> Ng and O’Sullivan (n 110) 28.

<sup>113</sup> *Pintarich* [49].

this decision to future cases remains unclear, especially given the consent orders in *Amato v Commonwealth* (the ‘Robodebt’ case),<sup>114</sup> in which automatically generated debt notices were treated as decisions capable of giving rise to judicial review for being irrational.

The Australian Human Rights Commission has recommended an amendment to the *Acts Interpretation Act 1901* (Cth) to deem the term ‘decision’ as including decisions made by AI.<sup>115</sup> A deeming provision is a legislative section that states which statutory functions will be (deemed as) ‘decisions’ for the purposes of review. This seems the most sensible approach given the obvious problems that would arise were *Pintarich* to extend to all administrative decisions. This could be given effect in Victoria by amending the *Interpretation of Legislation Act 1984* (Vic) with a similar amendment, or by inserting deeming provisions into the relevant Acts as required.

However, the effectiveness of these provisions has been questioned in reference to the *Pintarich* case, where the Full Federal Court has cast doubt on whether automated decisions are reviewable under the *ADJR Act*.<sup>116</sup> This is because Moshinsky and Derrington JJ held that a ‘decision’ made under the *ADJR Act* has to involve a mental process of deliberation.<sup>117</sup> Despite the *Pintarich* case, it may be argued that these deeming provisions mean that Parliament intended to preserve review rights and to enable enforcement action for such automated decisions.

Another issue relating to the definition of ‘decision’ is whether an interim report produced by AI, in relation to making a decision, is itself reviewable. Reviews can only be made by the Victorian Civil and Administrative Tribunal (VCAT) where the statute itself allows for it, such as in cases of refusing, granting or failing to grant permits.<sup>118</sup> As such, reviews to VCAT will not be permissible for interim reports made by AI systems. In the case of review under the *Administrative Law Act 1978* (Vic), a ‘decision’ is defined as:

a decision operating in law to determine a question affecting the rights of any person or to grant, deny, terminate, suspend or alter a privilege or licence and includes a refusal or failure to perform a duty or to exercise a power to make such a decision.<sup>119</sup>

This definition is unlikely to include interim matters, as there needs to be a direct effect on the rights of the affected person.<sup>120</sup> For example, a

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<sup>114</sup> Order of Davies J in *Amato v Commonwealth* (Federal Court of Australia, VID611/2019, 27 November 2019).

<sup>115</sup> Australian Human Rights Commission, *Human Rights and Technology: Final Report* (2021) 62 – Recommendation 6.

<sup>116</sup> Ng and O’Sullivan (n 110) 31.

<sup>117</sup> See for further discussion, *ibid* 21.

<sup>118</sup> See *Planning and Environment Act 1987* (Vic) Pt 4 Div 2.

<sup>119</sup> *Administrative Law Act 1978* (Vic) s 3.

<sup>120</sup> *Neoen Australia v Minister for Planning* [2019] VSC 162, [16] – deferral of decision to a later date was held not to be a decision.

letter from a Secretary indicating an intention to cancel a licence was held not to be a decision.<sup>121</sup> However, it has been suggested that a determining factor is whether or not an interim measure precludes the reconsideration of the matter at stake.<sup>122</sup> As such, if the AI system produced a report that *necessitated* the making of a particular decision, it may be considered a decision under this definition. This is different to the position under federal law, which allows for review of ‘conduct’ in relation to the making of a decision.<sup>123</sup> Legislative amendments similar to deeming provisions can clear up this confusion by explicitly stating which decisions and parts of a decision are reviewable or deemed to be decisions.

## **2 Accountability/Responsibility – Who is the Decision-Maker?**

There has always been a presumption that an administrative decision will be made by a human or a body comprised of humans, so that in turn there will be a responsible party.<sup>124</sup> In the case of AI-assisted decisions where technology is used in the process of making a decision, or to sort specific data, this should not be an issue, as ultimately there will still be a person who is clearly the decision-maker.

When it comes to fully automated decisions, however, it becomes less clear. One option is to borrow from the EU’s GDPR.<sup>125</sup> Article 22 only allows for fully automated decisions in certain circumstances:

- Where it is necessary to enter into, or execute, a contract,
- Where it is authorised by a Member State law that also provides suitable measures to safeguard the subject’s data, or
- Where it is based on the subject’s explicit consent.<sup>126</sup>

In this case it is still necessary to have a responsible officer who can deal with affected persons that wish to question or challenge the decision. In Sweden, for example, the National Board of Finance, which manages financial aid to students, uses AI to make the decisions. An officer of government will then edit (and presumably review and adopt) the default form produced by the AI by signing it and thus becoming the one deemed responsible for the decision.<sup>127</sup>

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<sup>121</sup> *AB v Lewis* (1980) VR 151.

<sup>122</sup> Mark Aronson, Matthew Groves and Greg Weeks, *Judicial Review of Administrative Action and Government Liability* (Lawbook Co, 6<sup>th</sup> ed, 2017) 38 [2.50].

<sup>123</sup> *ADJR Act* s 5.

<sup>124</sup> Oswald (n 13) 379.

<sup>125</sup> 2016/679.

<sup>126</sup> GDPR Art 22.

<sup>127</sup> Zalnieriute, Moses and Williams (n 7) 439.

A further method of ensuring there is a designated responsible party for a decision is to insert a deeming provision. However, the issues with this approach are discussed in Part III E(1) above.

### 3 *Scope of AI Use in Decision-Making*

As noted above, there is a difference in legal implications for AI-assisted decisions and AI-made decisions. When it comes to the AI making decisions itself, it is important to note the type of decision and the factors legally required to be considered. In Part II(b) for example, we discussed objective factors that do not require discretion, such as building height, which can be managed easily by AI.<sup>128</sup> However, there are other factors to consider when deciding to approve or refuse, for example, an application for a building or planning permit. That is, under the objectives of Planning Victoria, all objections received, and any significant effects of the development on the environment or to the social aspects of the area, are factors that must be considered under the *Planning and Environment Act*.<sup>129</sup>

These sorts of discretionary factors will require more complex machine learning AI technology to ensure fairness and consistency. As such, the legislation should clearly set out the scope of AI use, such as which decisions the AI system is allowed to make, or be used for, and the criteria that it will assess. While not a common practice to date, there is strong support for this to be explicitly recognised in relevant legislation.<sup>130</sup>

### F *Liability for Damage Caused by AI Use in Administrative Decisions*

Where a government decision causes loss or damage to an individual, liability in negligence is an important aspect of accountability for public authorities.<sup>131</sup> The Victorian scheme is set out in the *Wrongs Act 1958* (Vic) Part XII. There is a recognised general duty to perform any act under statute in a 'careful manner'.<sup>132</sup> In determining whether there is a duty of care, and if such a duty has been breached, a court will consider the authority's functions, resources, general procedures and standards for the exercise of its functions.<sup>133</sup> Just because a decision was made

<sup>128</sup> Ibid 22.

<sup>129</sup> *Planning and Environment Act 1987* (Vic) s 60.

<sup>130</sup> Australian Human Rights Commission, *Human Rights and Technology: Final Report* (2021) 56.

<sup>131</sup> Daniel Montoya and Alice Rummery, 'The Use of Artificial Intelligence by Government: Parliamentary and Legal Issues' E-brief 02/2020 *NSW Parliamentary Research Service*, 17; Freya Kristjanson and Stephen Moreau, 'Regulatory Negligence and Administrative Law' (2012) 25(2) *Canadian Journal of Administrative Law and Practice* 103, 105.

<sup>132</sup> Lexis Advance, *Halsbury's Laws of Australia* (online at 10 July 2021) 65 Building and Construction IV(B) Negligence in Building Projects [65-1935].

<sup>133</sup> *Wrongs Act 1958* (Vic) s 83.

ultra vires (that is, the decision was not made lawfully) does not mean the authority acted negligently.<sup>134</sup>

The use of AI in such decision-making adds a layer of complexity to the determination of liability of a public authority in the exercise of its statutory functions. Firstly, a distinction can be made between wholly automated decisions and AI-assisted decisions. In the case of injuries arising out of wholly automated decisions, it has been suggested that product liability is the best framework to determine liability.<sup>135</sup> Given that the manufacturers of AI systems are the only ones who have some ability to control the outcome, and there is no intervening ‘decision-maker’, this seems to make intuitive sense. This approach, however, leaves open the question of who the fault lies with in the manufacturing process – the programmer, the expert who provided the knowledge base and training, the manager of the project and so on.<sup>136</sup> This emphasises the importance of the contract between the government and manufacturer, which will likely set out the terms on which party will be liable.

There is also the question of the suitability of this sort of decision-making in administrative law, especially for machine learning AI. The self-learning capacity of such tools interferes with the ability of manufacturers to predict future actions,<sup>137</sup> and, as such, these systems may need constant auditing to ensure they are making decisions properly. It also begs the question: which version of the AI system is making each decision? If the AI system was working as expected before it was released but went beyond the scope of what was previously foreseeable in the design stage, manufacturers may not be liable.<sup>138</sup>

Negligence may thus be a better alternative framework for both fully AI-made decisions and AI-assisted human decisions.<sup>139</sup> In the planning and building sector, there is a wide scope for injuries and damage that can be linked back to the administrative body, including approval of a design or granting an inspection approval,<sup>140</sup> where, for example, the building then collapses due to a structural fault or is subject to

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<sup>134</sup> Lexis Advance, *Court Forms, Precedents, and Pleadings*, N Moshinsky (online at 10 July 2021) ‘Negligence Commentary’ [49], [345].

<sup>135</sup> Selbst (n 14) 1320.

<sup>136</sup> John Kingston, ‘Artificial Intelligence and Legal Liability’ (2018) 28(3) *Australian Product Liability Reporter* 31, 33.

<sup>137</sup> Caroline Cauffman, ‘Robo-Liability: The European Union in Search of the Best Way to Deal with Damage Caused by Artificial Intelligence’ (2018) 25(5) *Maastricht Journal of European and Comparative Law* 527, 527.

<sup>138</sup> Office of the Victorian Information Commissioner, *Closer to the Machine: Technical, Social and Legal Aspects of AI* (2019) 128.

<sup>139</sup> Selbst (n 14) 1320.

<sup>140</sup> Lexis Advance, Halsbury’s Laws of Australia (online at 10 July 2021) 65 Building and Construction IV(B) Negligence in Building Projects, [65-1935].

flooding.<sup>141</sup> Indeed, depending on the mandatory statutory factors to consider, which may include a number of environmental factors, there could be a relatively large scope of potential liability.<sup>142</sup>

When it comes to AI-assisted decisions, therefore, it would seem that the decision-maker should carry a duty of care to those reasonably likely to be affected by their decisions. This would be in line with the current law and would allow those injured as a consequence of decisions to be able to find compensation. However, a primary hurdle with this approach is that AI tools are becoming far more advanced than simple calculators and computer programs. AI can now surpass human abilities to such a degree that whoever is responsible for decision-making may be unable to adequately check whether the tool has made an error in real time.<sup>143</sup> This is problematic, as it leaves two options:

- Leave part of the discretion to the AI (which would allow for errors to go unchecked); or
- Have humans check all processes (which would defeat one of the purposes of having AI in the first place - efficiency).

No theory of negligence would assign liability where the alleged wrongdoer could not have prevented the harm through greater care.<sup>144</sup> As such, there will only be a breach of duty where there is a coherent level of care that a person can exercise when using AI.<sup>145</sup> This demonstrates a potential need for modifying the standard of care in legislation.<sup>146</sup> This should be set out as clearly as possible in a legislative direction on the use of AI.

Another problem, however, arises when we examine how AI actually makes decisions. While deterministic systems can leave a clear audit trail, machine learning systems are often inherently non-intuitive.<sup>147</sup> The epistemic limitations lead to a lack of a principled basis to contradict AI predictions.<sup>148</sup> This is because AI that employs machine learning does not make decisions in the way humans do. This fact reinforces the need for interpretable AI, as discussed above in Part III(a). We need to understand AI to have a sensible application of negligence and foreseeability. Even in this instance, such cases may be

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<sup>141</sup> Justine Bell-James and Anna Huggins, 'Compliance with Statutory Directives and the Negligence Liability of Public Authorities: Climate Change and Coastal Development' (2017) 34(5) *Environmental and Planning Law Journal* 398, 398.

<sup>142</sup> *Ibid* 408.

<sup>143</sup> *Selbst* (n 14) 1331.

<sup>144</sup> *Ibid* 1321.

<sup>145</sup> *Ibid* 1331.

<sup>146</sup> Hannah R Sullivan and Scott J Schweikhart, 'Are Current Tort Liability Doctrines Adequate for Addressing Injury Caused by AI?' (2019) 21(2) *AMA Journal of Ethics* 160, 163.

<sup>147</sup> *Selbst* (n 14) 1362.

<sup>148</sup> *Ibid* 1339.

rare, depending on the level of checking required by decision-makers.<sup>149</sup>

Another suggestion is to give AI ‘personhood’, allowing it to be sued directly.<sup>150</sup> This removes any issues with the chain of causation and limitation of liability to the owner.<sup>151</sup> Under this approach, all AI would need to be insured so as to be able to pay out claims.<sup>152</sup> Such a mandatory insurance scheme has been considered by the European Parliament and involves contribution to a common fund from manufacturers, with registration to be included.<sup>153</sup> This approach would solve the potential problem of attempting to assign manufacturer liability when many different entities contribute to an AI project, with some being far removed from the end result.<sup>154</sup>

## **G Admissibility**

When disputes arise in relation to AI decisions - be it by way of judicial review or actions for breach of statutory duty or negligence - there will be a question of what evidence relating to the making of the decision will be allowed in court.

AI decisions and all associated data would likely fall under the broad definition of ‘document’ contained in the *Evidence Act 2008* (Vic):

‘document’ means any record of information, and includes—

- (a) anything on which there is writing; or
- (b) anything on which there are marks, figures, symbols or perforations having a meaning for persons qualified to interpret them; or
- (c) anything from which sounds, images or writings can be reproduced with or without the aid of anything else; or
- (d) a map, plan, drawing or photograph.<sup>155</sup>

A document is allowed to be adduced by tendering it.<sup>156</sup>

### **1 Presumption of Reliability**

Evidence of a document produced wholly or partly by a computer process carries with it a presumption that, in producing a particular outcome, it was the system that produced the outcome.<sup>157</sup> For example, Facebook’s timestamps on comments and messages have been found to

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<sup>149</sup> Ibid 1362.

<sup>150</sup> Sullivan and Schweikhart (n 146) 164.

<sup>151</sup> Montoya and Rummery (n 131) 11.

<sup>152</sup> Sullivan and Schweikhart (n 146) 164.

<sup>153</sup> Cauffman (n 137) 528.

<sup>154</sup> Sullivan and Schweikhart (n 146) 163.

<sup>155</sup> *Evidence Act 2008* (Vic) sch 2.

<sup>156</sup> Ibid s 48(1)(a).

<sup>157</sup> Ibid s 146.

be admissible and presumed to be true and correct, given they were produced by the Facebook system of recording times and dates.<sup>158</sup> This presumption applies in cases of ‘notorious scientific instruments’. This has been held to include GPS data and does not exclude complex devices or processes.<sup>159</sup> It can be extrapolated from this that any information resulting from the use of an AI system will be admissible under the same rules and also have the same presumption in favour of it. This presumption is rebuttable, but there will likely need to be expert evidence challenging the accuracy of the output of the system.<sup>160</sup> In order to do this, evidence relating to the process itself – that is, the inner workings and algorithm used by the system – will also need to be admitted by the side opposing admission.

If, however, it is held that the statutory presumption does not apply, then it can still be admitted into evidence with the aid of expert testimony.<sup>161</sup> Expert evidence that states:

- a) the AI is within a class of instruments generally accepted as accurate; and
- b) that if the AI is handled properly, it produces accurate results;

will give rise to a presumption of accuracy.<sup>162</sup> Thus, if the particular AI was handled properly and read by a trained operator, then the AI data will be held to have been accurate.<sup>163</sup>

Furthermore, where the actual accuracy of the measurement can be inferred from all of the proved circumstances, it is not necessary to rely upon the presumptions that the AI system is within a class of instruments generally accepted as accurate and that if the AI system is handled properly, it produces accurate results.<sup>164</sup> As such, evidence of the responses of an AI system may need to be given by an expert user who has a deep understanding of the system and is able to interpret and explain its workings in court (this may also be necessary to avoid the hearsay rule discussed below).<sup>165</sup> Such a person would need to qualify for an exception to be able to give opinion evidence – that is, they would need to be able to show that their training, study, or experience has given them specialised knowledge in order to comment on the AI system in question.<sup>166</sup> This is particularly relevant where the

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<sup>158</sup> *Stevenson v R* [2020] VSCA 27, [54], [69-77].

<sup>159</sup> *Yatno v R* [2018] NTSC 53, [18].

<sup>160</sup> *Ibid* [79].

<sup>161</sup> *R v Ciantar* (2006) 16 VR 26, 30.

<sup>162</sup> *Mehesz v Redman (No 2)* (1980) 26 SASR 244, 252, cited with approval in *R v Ciantar* (2006) 16 VR 26.

<sup>163</sup> *Ibid*.

<sup>164</sup> *Ibid*.

<sup>165</sup> *Evidence Act 2008* (Vic) s 59.

<sup>166</sup> *Ibid* s 79. Note that in the US, the Daubert principle allows a judge to exclude expert evidence on technical matters if it does not have sound scientific methodology as a background. However, there is no Daubert principle equivalent in Australia.

information from the system is extensive and complex, in which case a summary may be provided and may need to be explained.<sup>167</sup>

## 2 Hearsay Rule

Depending on the interpretation of the hearsay rule, AI-generated documents may or may not be considered hearsay. The hearsay rule prevents evidence of past representations being given in court, unless the person who made such representations is available as a witness to be cross-examined. This is so that all evidence can be tested or challenged by the opposing side. Information contained in a document would normally constitute a previous representation.

The hearsay rule only applies to previous representations made ‘by a person’,<sup>168</sup> thus there is a question of whether or not the human input of data that ultimately leads to an AI output will meet this definition. Jason Harkess suggests that even if a representation is computer-generated, human input into the automated process *will* constitute it being made by a person.<sup>169</sup> If this is the case, then the ‘author of the evidence’ (being the person inputting the data, or otherwise a user of the AI system) will need to give evidence in order for the data to be tendered. Given the underlying principles of hearsay evidence, it is likely that there must be at least one human witness who can be cross examined in relation to any AI data.

## IV Conclusion

The scope of AI use in administrative decision-making is vast and has the potential to improve a large variety of processes. In the planning and building sector, we can see the obvious benefits of moving to digital platforms and introducing automation to achieve greater speed, efficiency and quality of decision-making.

While the positives are apparent, there still remain a significant number of issues that must be considered when designing and implementing these systems. We need to ensure AI systems are transparent and understandable, and are therefore accountable, in order to adhere to administrative and civil law principles. AI systems must be built and designed in a way that ensures fairness and discretion are maintained and that everybody receives equal treatment. The increased risk of data and privacy misuse must also be monitored and the law must ensure that the rights of parties are outlined clearly.

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<sup>167</sup> Ibid s 50.

<sup>168</sup> Ibid s 59.

<sup>169</sup> Jason Harkess, ‘Admissible Hearsay in Business Records: Section 69 of the *Evidence Act 2008*’ (Seminar Paper, Victorian Bar, 4 December 2018) <<https://www.vicbar.com.au/file/7585/download?token=Ur-4vWgy>>, 1.

The government has a major part to play, by defining the rights of all parties through legislative change. Statutes must expressly state where AI can be used, and how, in order to avoid confusion, and allow for decisions to be amenable to judicial review. The law should also state, as clearly as can be done, who will be accountable for decisions and the circumstances in which such liability will be afforded.

The potential for improvements generally and, within the planning and building sector in particular, once the uptake of AI begins is limitless, however, ensuring compliance with the law is a necessary step along the way.