Submission to the House Standing Committee on Employment, Education and Training inquiry into the Digital Transformation of Workplaces.

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We are four researchers with a longstanding interest and research expertise in digital on-demand 'gig' work in Australia. We have published multiple peer-reviewed journal articles, academic book chapters, Op-eds in the Age, Sydney Morning Herald, and The Conversation, as well as have made multiple submissions to different Commonwealth and State Inquiries. Two of us are also leading Australian Research Council funded Discovery Early Career projects into different facets of the 'gig' economy, one of which is explicitly focused on algorithmic management.

We have been studying the 'gig' economy since 2016, including the use of so-called algorithmic management systems – which are based on self-learning algorithms. These systems are used by platforms in the gig economy to automate and delegate managerial responsibilities to machines, allowing them to make and execute (line) managerial decisions over workers.[5]

It is within this capacity and expertise that we welcome this opportunity to make a submission to the House Standing Committee on Employment, Education and Training inquiry into the Digital Transformation of Workplaces.

A. The benefits for productivity, skills development, career progression and job creation in Australia

The advent and increasing use of artificial intelligence at work is creating new work opportunities but is also causing concern about possible job losses. It is beyond our expertise to speculate on future work and employment numbers as a result of digitation. We do, however, wish to inform the Inquiry towards lessons that can be learned the 'gig' economy, which has been at the forefront of the digitization of work.

In the on-demand 'gig' economy, digitization has given rise to entirely new forms of work, particularly in the online context of cloud-based work. This is work which is often advertised, allocated and performed online. It has created entirely new professions, which can be highly skilled, e.g., data engineers, to extremely low-paid, such as micro-taskers, who are earning cents, or fractions of cents, for completed tasks. Digitisation has also led to new forms of work organisation in sectors like transport, as evident by the growth of ride-share driving and app-based food-delivery platform. While only around since the late 2010s, according to ABS estimates, around 1% (0.96%) of the

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[5] See e.g., Veen, A., Barratt, T., & Goods, C. (2020). Platform-capital's 'app-etite' for control: A labour process analysis of food-delivery work in Australia. Work, employment and society, 34(3), 388-406.

employed population now work via digital platforms.[6] For comparison, the mining industry employs around 2.2.% of working Australians.[7]

What we know about workers in the on-demand economy, is that individuals working via platforms have higher levels of multiple job holdings, are relatively younger, and are more likely to be male.[8] There is further an overrepresentation of individuals from traditionally disadvantaged labour market backgrounds, including migrant workers, people with disability and individuals with caring responsibilities.[9] Gig work, and by association the algorithmic management that underpins much of it, therefore helps provide these groups with opportunity to work and earn money. However, this also raises questions about the structural nature of the broader labour market (i.e., why these groups are underrepresented) and concerns about the quality (rather than just the presence) of these jobs. [10] Indeed, there is a significant and growing body of academic literature pointing to some serious deficiencies with these digital forms of work organisation, including problems associated with the use algorithmic management by, for instance, ride-share and food-delivery platforms.[11]

B. The role of business software and regulatory technology ('Reg Tech') in improving regulatory compliance in the workplace relations system, including their use by regulators, and accountability for errors resulting in non-compliance

Given the ongoing issues with underpayments and wage theft in the Australian workplace relations system,[12] RegTech solutions may help ensure employees are paid their legal entitlements. The technology, however, is only a tool that can help with compliance. Its effectiveness, however, will entirely depend on its inputs – i.e., how the systems are programmed – as well as how they are used – organizational responsibilities cannot be delegated to RegTech.

Critically, in the context of the Australian employment relations regulatory system, this means that there the need to be a skilled workforce of human resource management (HRM) and industrial relations (IR) professionals, supported by labour lawyers to interpret and apply relevant laws and industrial instruments. Moreover, besides expert inputs required for the design of such systems, there

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[6] ABS 2023 Digital platform workers in Australia https://www.abs.gov.au/articles/digital-platform-workers-australia#digital-platform-workers-in-australia

[7] https://www.jobsandskills.gov.au/data/labour-market-insights/industries/mining

[8] ABS 2023 Digital platform workers in Australia https://www.abs.gov.au/articles/digital-platform-workers-australia#digital-platform-workers-in-australia

[9] See McDonald, P., Williams, P., Stewart, A., Mayes, R., & Oliver, D. (2020) Digital Platform Work in Australia: Prevalence, Nature and Impact. Queensland University of Technology, Australia; See, also, Veen, A., Barratt, T., Goods, C., & Baird, M. (2023). Accidental flexicurity or workfare? Navigating ride-share work and Australia's welfare system. Economic and Industrial Democracy, 0143831X231197057.

[10] See, e.g., Dunn, M. (2020). Making gigs work: digital platforms, job quality and worker motivations. New Technology, Work and Employment, 35(2), 232-249; Goods, C., Veen, A., & Barratt, T. (2019). "Is your gig any good?" Analysing job quality in the Australian platform-based food-delivery sector. Journal of Industrial Relations, 61(4), 502-527.

[11] See, e.g., Rosenblat, A. (2018). Uberland: How algorithms are rewriting the rules of work. Univ of California Press; Lata, L. N., Burdon, J., & Reddel, T. (2023). New tech, old exploitation: Gig economy, algorithmic control and migrant labour. Sociology Compass, 17(1), e13028.; Möhlmann, M., Zalmanson, L., Henfridsson, O., & Gregory, R. W. (2021). Algorithmic Management of Work on Online Labor Platforms: When Matching Meets Control. MIS quarterly, 45(4); Veen, A., Barratt, T., & Goods, C. (2020). Platform-capital's 'app-etite' for control: A labour process analysis of food-delivery work in Australia. Work, employment and society, 34(3), 388-406.

[12] See, e.g., Flanagan, F., & Clibborn, S. (2023). Non-enforcement of minimum wage laws and the shifting protective subject of labour law in Australia: A new province for law and order?. Sydney L. Rev., 45, 337; Clibborn, S., & Wright, C. F. (2018). Employer theft of temporary migrant workers' wages in Australia: Why has the state failed to act?. The Economic and Labour Relations Review, 29(2), 207-227.

needs to be regular and systematic oversight, an issue given some of the major payroll scandals that have plagued Australian employers.[13]

RegTech solutions further provide opportunities for bodies like the Fair Work Ombudsman to engage in proactive compliance activities. However, again, this requires a skilled workforce who design these systems, ensure appropriate data is inputted and verify its outcomes.

In our experience as educators in HRM and IR, industry partners inform us they find it difficult to find, attract and retain skilled HRM and IR graduates. This problem is exacerbated as the number of Australian institutions offering these courses have decreased over time. We therefore argue that if Australian employers are to fully leverage the benefits of RegTech to improve compliance and effective functioning of the workplace relations system, there is a need to ensure we are training highly skilled HRM and IR professionals. Given that Australia's workplace relations system is in many ways unique, workers with these skills cannot readily be imported from overseas. Hence, we would strongly advocate for local skilled development, this includes ensuring that specialised HRM and IR education programs and offering at Australian universities retain support.

C. The risks, opportunities, and consequences for the nature of work, including effects on hiring, rostering, work intensity, job design, wage setting, monitoring, surveillance and job quality

While there are many opportunities associated with the digital transformation of work, there are also significant risks. When considering the increasing use of artificial intelligence (AI) in the workplace we draw distinctions between several different technologies and their application.

The major concern, which is extensively debated within the academic literature (and by no means settled), [14] is the issue of AI-job displacement. It does, however, highlight the need to consider their impact both within and beyond the workplace. For instance, there is a need to critically assess whether Australia's social-security system is appropriately geared to deal with possible AI-related job displacement. This assessment would consider how to address structural deficiencies in the system, as well as ensuring effective retraining and redeployment for those whose jobs are displaced by AI.

Besides displacement effects, we can identify three major uses of AI in the workplace, each with different implications for the nature of work, namely:

1. AI-job augmentation

AI is reconfiguring the nature of work by altering day-to-day work routines. In this context, AI is primarily used as a (collaborative) tool.[15] One the one hand, it may free up workers from more menial and administrative tasks – lifting job quality. It, however, also has the possibility to deskill work by

[13] See e.g., Barry, M., & Gould, R. (2022). Employer and employer association matters in 2021. Journal of Industrial Relations, 64(3), 380-395; Clibborn, S. (2020). Australian industrial relations in 2019: The year wage theft went mainstream. *Journal of Industrial Relations*, *62*(3), 331-340

[14] C.f., Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation?. Technological forecasting dind social change, 114, 254-280; Coelli, M. B., & Borland, J. (2019). Behind the headline number: Why not to rely on Frey and Osborne's predictions of potential job loss from automation.

[15] See e.g., Allen R and Choudhury P (2021) Algorithm-Augmented Work and Domain Experience: The Countervailing Forces of Ability and Aversion. Organization Science 33(1): 149-169; Kiviat B (2019) The Moral Limits of Predictive Practices: The Case of Credit-Based Insurance Scores. American Sociological Review 84(6): 1134-1158.

limiting the level of discretion that workers have – decreasing job quality. An example of the latter can be found in financial advising, where the discretion of workers is being curbed by AI tools.[16]

2. 'People' or 'HR' analytics

People or HR analytics is the use of information technology for the analysis of "data related to HR processes, human capital, organizational performance, and external economic benchmarks to establish business impact and enable data-driven decision-making." (p. 15).[17] In practice, we find a spectrum of applications ranging from implementing processes for the systemic reporting of HR metrics to using predictive analytics (statistical models to established cause-effect, 'what if' models) for issues such as time to hire, turnover, compensation.[18] Examples of recent AI-based applications include the screening of resumes using AI. This raises questions around the conscious and unconscious biases incorporated in systems, and even whether using such tools may be breaching existing anti-discrimination obligations.[19]

Some companies are also using so-called 'wearables' to track their employees and capture real-time biometric data. While there may be appropriate uses for this technology, in particular in the context of workplace health safety,[20] there are considerable risks associated with employers collating this data.[21] Hence, we argue appropriate regulatory safeguards need to be in place and existing data and privacy laws and regulations in Australia should be strengthened and tailored to workplace contexts.

3. Algorithmic management

Finally, algorithmic management is the use of AI and machine learning to delegate traditional (line) managerial responsibilities to machines, allowing these systems to make and execute managerial decisions.[22] These systems are one of the hallmarks of on-demand 'gig' work[23] and can perform six

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[16] See e.g., Bisht, N. S., Trusson, C., Siwale, J., & Ravishankar, M. N. (2023). Enhanced job satisfaction under tighter technological control: The paradoxical outcomes of digitalisation. New Technology, Work and Employment, 38(2), 162-184.

[17] Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics. The International Journal of Human Resource Management, 28(1), 3-26.

[18] See e.g., Waters, S. D., Streets, V. N., McFarlane, L., & Johnson-Murray, R. (2018). The practical guide to HR analytics: using data to inform, transform, and empower HR decisions (First edition.). Society For Human Resource Management.

[19] Fritts, M., & Cabrera, F. (2021). AI recruitment algorithms and the dehumanization problem. Ethics and Information Technology, 23, 791-801.

[20] E.g., Kritzler, M., Bäckman, M., Tenfält, A., & Michahelles, F. (2015, November). Wearable technology as a solution for workplace safety. In Proceedings of the 14th International Conference on Mobile and Ubiquitous Multimedia (pp. 213-217).

[21] See e.g., Bowman, J. S., & West, J. P. (2019). WEARABLES IN THE WORKPLACE. Human Resources Management Issues, Challenges and Trends:" Now and Around the Corner", 119.

[22] See e.g., Lee, M. K., Kusbit, D., Metsky, E., & Dabbish, L. (2015, April). Working with machines: The impact of algorithmic and data-driven management on human workers. In Proceedings of the 33rd annual ACM conference on human factors in computing systems (pp. 1603-1612); Möhlmann, M., Zalmanson, L., Henfridsson, O., & Gregory, R. W. (2021). Algorithmic Management of Work on Online Labor Platforms: When Matching Meets Control. MIS quarterly, 45(4); Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. Academy of management annals, 14(1), 366-410.

[23] See e.g., Aloisi, A., & De Stefano, V. (2022). Your boss is an algorithm: artificial intelligence, platform work and labour. Bloomsbury Publishing; De Stefano, V. (2015). The rise of the just-in-time workforce: On-demand work, crowdwork, and labor protection in the gig-economy. Comp. Lab. L. & Pol'y J., 37, 471; Prassl, J. (2018). Humans as a service: The promise and perils of work in the gig economy. Oxford University Press; Rosenblat, A. (2018). Uberland: How algorithms are rewriting the rules of work. Univ of California Press.

managerial functions: monitoring, goal setting, performance management, scheduling/job allocation, remuneration, and job termination.[24]

Much academic scholarship highlights the problems associated with algorithmic management practices in the 'gig' economy,[25] though workers report both experiences of (extreme) control as well as increased autonomy under these systems.[26] This literature calls for opportunities for organisational and institutional recourse and redress when workers perceive that they have been treated unfairly by algorithmic 'bosses', including the ability of workers to act collectively rather than individually.[27] Key issues shaping worker perceptions of these systems appear to be perceptions of 'fairness' and 'transparency'.[28]

As the job quality literature highlights, to assess the quality of work one needs to consider both 'objective' and 'subjective' measures of job quality[29]. To fully appreciate the implications of the three major uses of AI in the workplace it is important to consider the organisational intentions for the usage of the technology, which fundamentally shape worker experiences. If organisational intentions are around increased monitoring or work intensification, it most likely will lead to a degradation in working conditions and worsen the experience of work. If such tools, however, are deployed to assist individuals to work smarter (e.g. reducing administrative burdens), then there can be both productivity dividends and increases in job satisfaction. Given organisational rationales for the use and implementation of technology may differ, it is impossible to either be wholly Pollyannaish or pessimistic about the development. What is critical, however, is that appropriate regulatory safeguards are put in place to manage the digitization of work in Australia.

D. **The effects of these techniques on the scope of managerial prerogative, labour rights, ability for workers to organise, procedural fairness, equality, discrimination, and dignity at work**

The digitization of workplaces in Australia, as in other parts of the world, is invariably an organisationally rather than worker-led development, with organizations, often due to competitive pressures or shareholder expectations, introducing new technology. Technology has the capacity to

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[24] Parent-Rocheleau, X., & Parker, S. K. (2022). Algorithms as work designers: How algorithmic management influences the design of jobs. Human Resource Management Review, 32(3), 1–17.

[25] See e.g., Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. Academy of management annals, 14(1), 366-410.Pignot, E. (2023). Who is pulling the strings in the platform economy? Accounting for the dark and unexpected sides of algorithmic control. Organization, 30(1), 140-167; Möhlmann, M., & Henfridsson, O. (2019). What people hate about being managed by algorithms, according to a study of Uber drivers. *Harvard Business Review*, *30*. https://hbr.org/2019/08/what-people-hate-about-being-managed-by-algorithms-according-to-a-study-of-uber-drivers

[26] See e.g., Meijerink, J., & Bondarouk, T. (2023). The duality of algorithmic management: Toward a research agenda on HRM algorithms, autonomy and value creation. *Human Resource Management Review*, *33*(1).

[27] See e.g., Adams-Prassl, J., Abraha, H., Kelly-Lyth, A., Silberman, M. S., & Rakshita, S. (2023). Regulating algorithmic management: A blueprint. *European Labour Law Journal*, *14*(2), 124-151.; Aloisi, A. (2024). Regulating algorithmic management at work in the European Union: Data protection, non-discrimination and collective rights. *International Journal of Comparative Labour Law and Industrial Relations*, *40*(1).

[28] See e.g., Lee, M. K. (2018). Understanding perception of algorithmic decisions: Fairness, trust, and emotion in response to algorithmic management. Big Data & Society, 5(1), 2053951718756684; Gaudio, G. (2021). Algorithmic bosses can't lie! How to foster transparency and limit abuses of the new algorithmic managers. *Comp. Lab. L. & Pol'y J.*, *42*, 707; Parent-Rocheleau, X., & Parker, S. K. (2022). Algorithms as work designers: How algorithmic management influences the design of jobs. Human resource management review, 32(3), 100838.

[29] Goods, C., Veen, A., & Barratt, T. (2019). "Is your gig any good?" Analysing job quality in the Australian platform-based food-delivery sector. Journal of Industrial Relations, 61(4), 502-527.

enhance managerial prerogative and control of work and production processes – indeed these debates have persisted for ages.

What is different with the latest technological advancements, especially the usage of AI in the workplace, is that it has become increasingly difficult for workers and their representatives to understand how managerial decisions are made – whereby it can be argued that organisational leaders themselves may not fully comprehend the systems that they are deploying.

In turn, this raises new questions around procedural fairness, equality, discrimination as well as to what extent there are genuine opportunities for employee voice. It is well documented how the use of algorithmic and AI-based system may reinforce and even exacerbate existing societal biases and lead to discriminatory outcomes.[30] A major problem within the context of workplaces is that companies developing AI tools are reluctant to disclose the inner workings of their proprietary algorithms, given it is their intellectual property, whereas third-party users of Software-as-a-Service (SaaS) systems will lack the capacity (and rights) to so. Hence, here regulatory interventions can play a critical role. An example would the European Union's General Data Protection Regulation (GDPR)[31] (discussed in more detail below).

E. Appropriate safeguards or regulatory interventions to guide responsible implementation in the workplace, including the digital skills and resources necessary for employers to appropriately utilise these technologies

From an international comparative perspective Australian is lagging behind when it comes to providing workers, and its citizens more broadly, with appropriate regulatory protections. We wish to point The Inquiry towards various initiatives undertaken elsewhere that may help the Committee to formulate appropriate standards for Australia.

The EU provides workers with much greater insights than Australia about the usage of AI-tools as rights with relations to which data organizations can capture. In turn, this directly affects the way organizations can use People/HR analytics and algorithmic management applications. From a worker perspective, the two most notable developments are the General Data Protection Regulation (GDPR)[32] and the platform work directive.[33] From a small business perspective it is also worthwhile considering the Platform to Business (P2B) Regulation, which helps to address issues around market dominance of large digital platform organizations.[34]

One of the challenges with GDPR is that rights around the ability to request data from organizations (including employers and intermediary platforms) rests with individuals. In this respect, the Committee may want to also consider the Spanish Riders Law, which regulate the use of algorithmic management in Spanish the app-based delivery sector. The Riders Law goes beyond the informational rights of the GDPR and has made it possible for employee representatives like trade unions to make

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[30] See e.g., Noble, S. U. (2018). Algorithms of oppression: how search engines reinforce racism. New York University Press.

[31] https://gdpr.eu/

[32] https://gdpr.eu/

[33] https://www.europarl.europa.eu/news/en/press-room/20240205IPR17417/provisional-deal-on-first-eu-wide-rules-for-platform-workers

[34] https://eur-lex.europa.eu/eli/reg/2019/1150/oj

data requests[35] – which would be registered organizations in the context of the Australian workplace relations system.[36]

The Commonwealth can play a leading role in ensuring that there is responsible use of AI in Australian workplaces, and across different part of society more broadly. In this respect, we also wish to point to the executive order that was issued by President Biden in 2023. It sets standards for the usage of AI-based application for and by the US government as well as focuses on the required capacity building needed for different government agencies to adequately respond, and be able to deal with, AI-applications.[37]

F. The effects on gender equality, job security, small businesses, Closing the Gap and disadvantaged and vulnerable cohorts of workers

While it is difficult to fully anticipate the impacts on these groups, the outcomes will very much depend on the regulatory landscape and safeguards that are in place to guide the uptake of new technologies. In conclusion, we suggest that in its consideration of these issues The Inquiry looks beyond short-term organisational bottom lines and individual experiences of AI at work and instead consider the broader societal implications of not '*whether*' but '*how and on what terms*' this technology is adopted.

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[35] Todoli-Signes, A. (2021). Spanish riders law and the right to be informed about the algorithm. European Labour Law Journal, 12(3), 399-402.
[36] https://www.fwc.gov.au/registered-organisations/find-registered-organisation
[37] https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/