seek and you shall find

September 2026

AI & Early Careers

How GenAI is changing early-career hiring in Australia



Written by

Blair Chapman, PhD
SEEK Chief Economist

Contents

p3 Summary

p4 Introduction

p6 Current impact of AI on jobs

- The types of jobs impacted
- Non-routine cognitive occupations and GenAI

p12 What SEEK job ads tell us

- How early-career roles are identified
- What the analysis shows
- Findings

p18 Conclusion

p19 Notes & Citations

Summary

The public debate around AI and jobs often assumes entry-level roles will be the first to disappear. This research, based on millions of Australian job ads posted on SEEK between 2016 and 2025, suggests the Australian labour market may be showing something more mixed — and potentially more hopeful.

The research separated two possible ways AI can affect jobs:

- Automation: where AI replaces tasks people used to do
- Augmentation: where AI helps people do their work better or faster

So far, the strongest signal is that AI augmentation may be increasing employer demand for early-career workers in some knowledge-intensive occupations. That is, in the part of the labour market most plausibly affected by generative AI, AI appears to be helping junior workers contribute, rather than wiping out their jobs.

By contrast, this insight does find a smaller negative automation effect, which means there may still be some downward pressure on junior hiring in more automatable roles.

However, the balance between augmentation and automation exposure in each role is an important factor in the model's predicted outcome for a specific occupation.

> **AI may be increasing demand for junior workers in some white-collar roles, especially where AI is more likely to assist workers, rather than replace them outright.**

Introduction

Generative AI (GenAI) is a relatively new technology, even though artificial intelligence as a field has been around for decades.

Because GenAI can now perform some tasks that were once mainly done by knowledge workers, it has prompted bold claims about the future of work. In 2023, Sam Altman the CEO of OpenAI said “jobs are definitely going to go away, full stop”.[1]

ChatGPT, released by OpenAI in November 2022, was one of the first high-profile GenAI tools made widely available to the public. Since then, many studies have tried to understand how GenAI is affecting labour markets, often focusing on the United States.

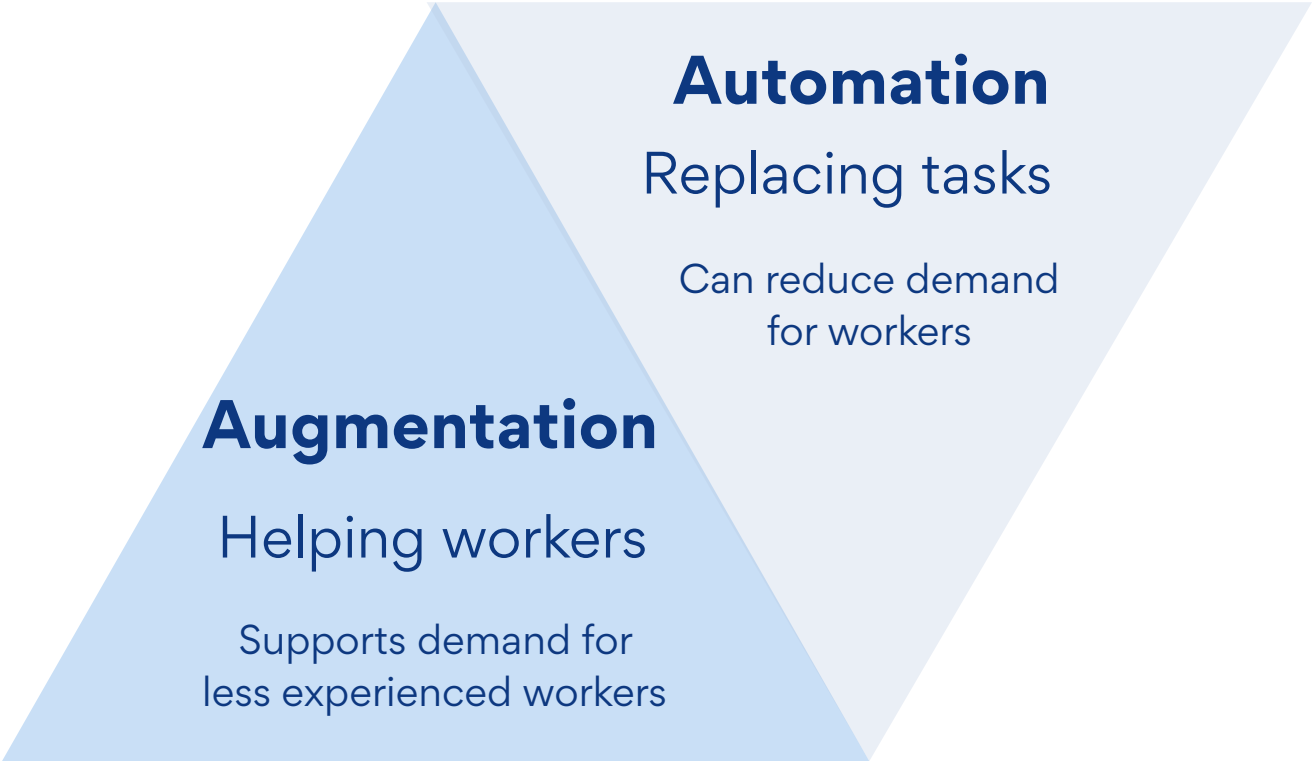
One paper that attracted significant media attention was Canaries in the Coal Mine? Six Facts about the Recent Employment Effects of Artificial Intelligence.[2] It argued that early-career workers in AI-exposed occupations were being hit harder than other workers. The authors later qualified that result, suggesting the apparent AI-related decline is not statistically significant until 2024 once a broader set of factors is considered.[3]

Combined with strong claims from AI developers and major tech firms, these early findings have added to concerns about the future of jobs, especially for younger workers and those at the start of their careers.

> **In some occupations, AI appears to support demand for less experienced workers by helping them do tasks more effectively. In others, it appears to reduce demand by doing some tasks itself.**

This report uses SEEK job ad data and GenAI exposure scores from Jobs and Skills Australia (JSA) to explore how GenAI may be changing employer demand for early-career roles in more knowledge-based occupations since the release of ChatGPT.[4]

GenAI can affect jobs in two main ways:



Across the occupations examined in this report, exposure to augmentation is generally greater than exposure to automation. This suggests that, for now, GenAI is more closely associated with increased demand for early-career workers than with reduced demand.

That said, this balance may change over time. As the technology improves and employers adapt, task replacement could become more important. That is why these trends need to be monitored closely.

Current impact of AI on jobs

Many studies on GenAI and jobs look across all occupations in the economy. Over time, GenAI may have broader effects as businesses redesign work, invest in new tools, and find better ways to use the technology. Those wider flow-on effects may eventually show up in the labour market.

But it is still early. For now, it is going to be hard to see these broader, indirect effects clearly in the data.[5]

What is easier to see is that some jobs are much less exposed to GenAI right now than others. For example, GenAI has not replaced plumbers or electricians in Australia. It may help a plumber with invoicing or tax paperwork, but those are not the core tasks of the job. They are also not the reason a plumber hires an apprentice. In the future, AI combined with robotics may change the picture. But that is not the current reality. Indirectly AI could also reduce the demand for accountants because the plumber no longer needs as much help with their accounts.

Jobs are made up of different tasks. One useful way to think about them is along two simple dimensions:

Routine vs non-routine

Routine tasks follow clear steps and are easier to automate. Non-routine tasks are less predictable and harder to reduce to a set of rules .

Manual vs cognitive

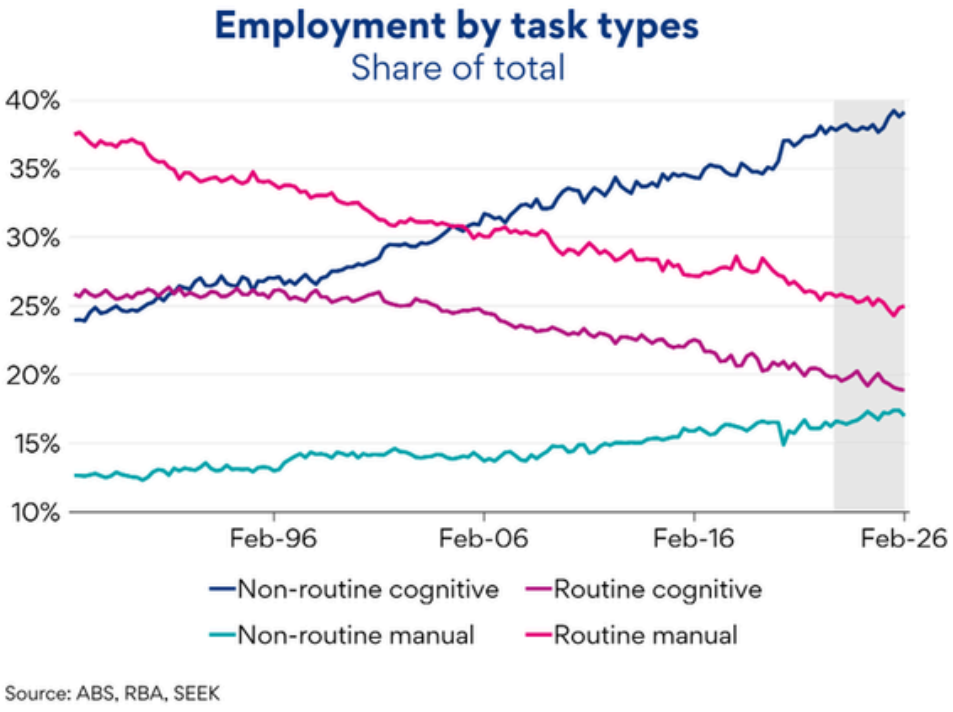
Manual tasks involve physical effort and coordination. Cognitive tasks involve reasoning, communication, analysis or judgment.

Source: Autor, Levy and Murnane 2003; Acemoglu and Autor 2011

Manual jobs generally cannot be replaced by GenAI on its own. To do that, AI usually needs to be combined with expensive machinery or robotics.[6] By contrast, many cognitive tasks can be done, or partly done, using software alone.

This helps explain a longer-term trend in the labour market. In Australia, employment in jobs with a high share of routine tasks has grown more slowly than employment in non-routine jobs over the past four decades. As a result, routine roles now make up a smaller share of total employment than they once did, even though the number of people in these jobs has still increased over time (Figure 1).[7]

Figure 1: Employment share by task type in Australia over time



Source: ABS, RBA, SEEK

This matters because routine tasks were already vulnerable to computers well before Generative AI (GenAI) arrived. Routine tasks, by definition, do not need GenAI to be completed. In fact, when Autor, Levy and Murnane defined routine tasks in the early 2000s, they were referring to tasks that could be completed by following explicit rules. That idea long predates today's wave of GenAI.

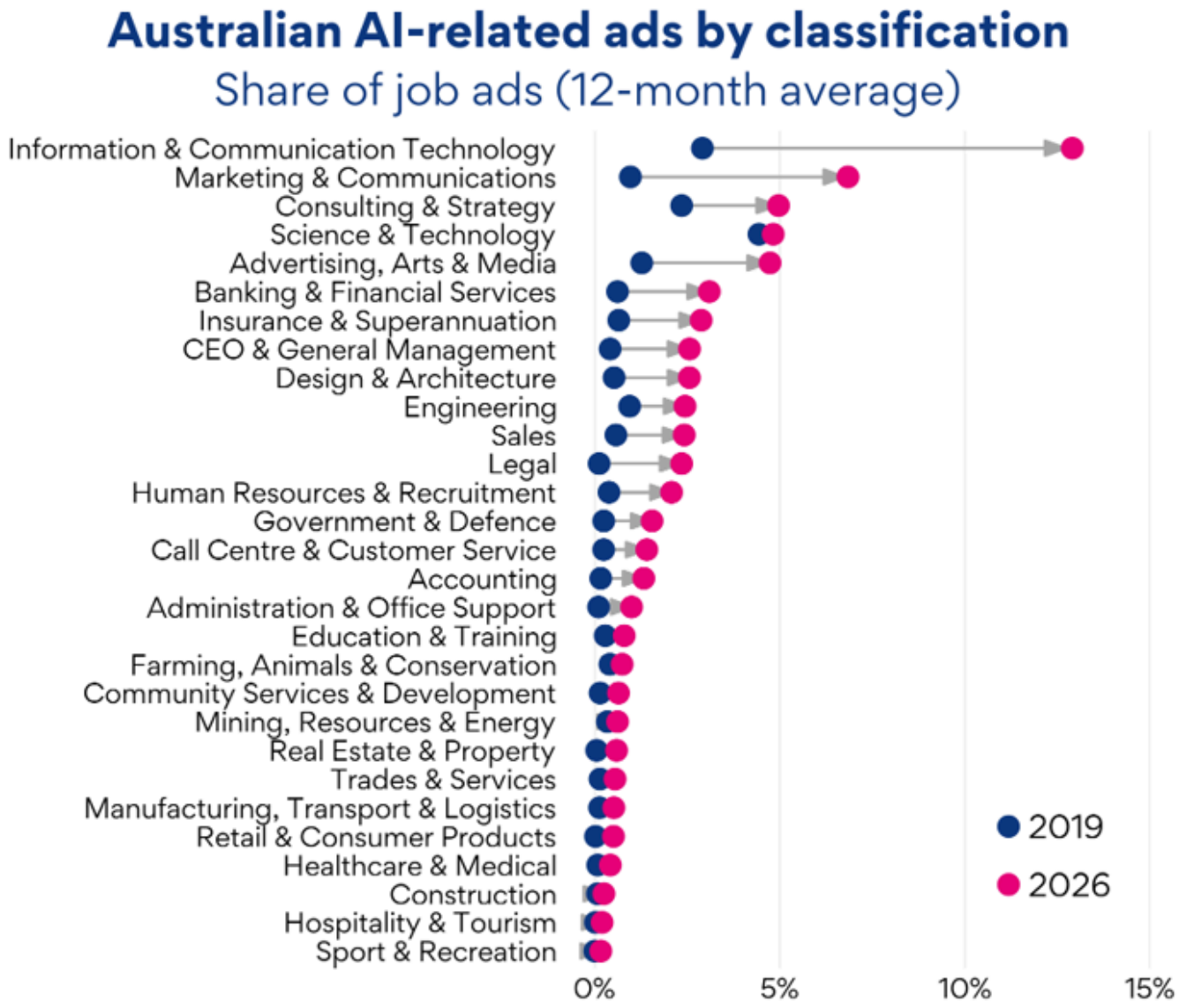
Routine cognitive jobs have therefore been under pressure for decades. Survey interviewers are one example. In the mid-1980s, there were around 20,000 survey interviewers in Australia. Today, there are around 2,000. Computers, email and online services made it much easier for businesses to contact customers directly, reducing the need for in-person interviewers. In a similar way, the move to paperless offices and digital records reduced demand for keyboard operators and filing clerks long before GenAI emerged.

Taken together, mechanisation, computerisation, digitisation and online services have already reduced the share of employment in routine jobs, whether manual or cognitive. This means the main area where GenAI is likely to have an early observable impact is in non-routine cognitive roles, especially jobs that rely on language, analysis, communication or judgement.

SEEK's AI Gauge points in the same direction. Job ads mentioning AI-related skills, software and techniques are concentrated in more knowledge-based and language-based industries, rather than manual ones. Outside Information & Communication Technology (ICT) roles, AI-related skills are mentioned most often in Marketing and Communications. At the other end of the spectrum, they are rarely mentioned in more manual occupations (Figure 2).

This analysis focuses on non-routine cognitive occupations, where the early effects of GenAI are most likely to show up.

Figure 2: Share of job ads mentioning AI-related skills and software by SEEK classification



Source: SEEK

Non-routine cognitive occupations and GenAI

Non-routine cognitive occupations now account for close to 40% of employment in Australia, after growing strongly over the past two to three decades. Most of these jobs are managerial, professional and other knowledge-based roles. Table 1 shows the 15 largest non-routine cognitive occupations in 2025.

Table 1: The top 15 non-routine cognitive occupations by employment in 2025

		Employment growth			
ANZSCO Occupation Group	2025 employment ('000s)	20 years	3 years	Automation exposure score	Augmentation exposure score
Retail Managers	250	25%	14%	48%	73%
Accountants	223	61%	7%	54%	73%
Software & App Programmers	188	161%	19%	63%	77%
Primary School Teachers	167	26%	2%	32%	63%
Secondary School Teachers	166	27%	11%	35%	60%
Advertising, PR & Sales Managers	160	38%	2%	38%	72%
Construction Managers	128	163%	5%	33%	70%
Solicitors	103	174%	16%	34%	61%
Management & Organisation Analysts	103	194%	4%	53%	73%
Advertising & Marketing Professionals	101	173%	12%	54%	79%
Other Hospitality, Retail & Service Managers	91	88%	-14%	38%	70%
Human Resource Managers	89	172%	-24%	36%	66%
GPs & Resident Medical Officers	88	147%	15%	34%	70%
ICT Managers	88	122%	16%	38%	70%
Human Resource Professionals	85	95%	-2%	51%	68%

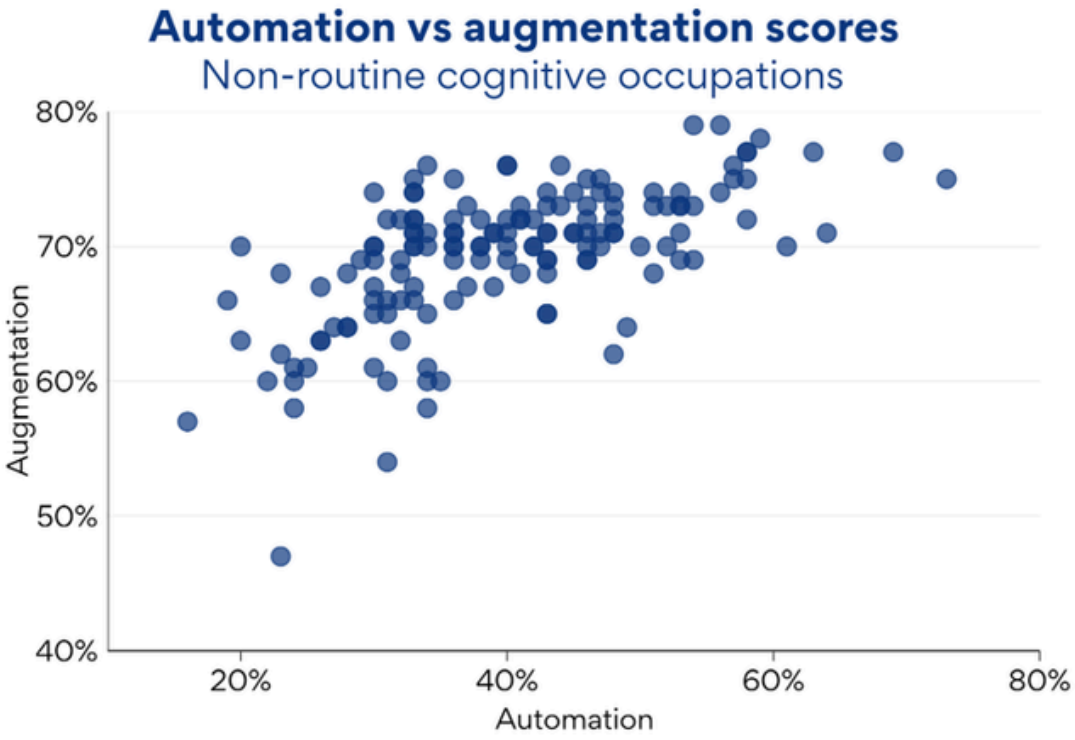
Source: ABS, JSA, SEEK

Of these 15 occupations, only Software & Applications Programmers has a JSA automation exposure score above 60%. Outside the top 15, the other non-routine cognitive occupations with automation exposure scores above 60% are Tourism & Travel Advisers, Financial Dealers, and Technical Sales Representatives. Together, these three occupations accounted for 67,000 jobs in 2025, or less than 0.5% of total employment.

While most non-routine cognitive occupations have automation scores below 60%, many have relatively high augmentation scores. In other words, GenAI is more likely to help people do tasks in these roles than to do the tasks itself.

Across all occupations, jobs with higher automation exposure also tend to have higher augmentation exposure. The same pattern appears within non-routine cognitive occupations, although the relationship is weaker.[8]

Figure 3: Jobs & Skills Australia AI exposure scores for non-routine cognitive occupations



Source: JSA, RBA, SEEK

Overall, this suggests that in most non-routine cognitive occupations, GenAI is currently more likely to assist with tasks than fully automate them.[9]

That does not necessarily mean demand for workers will rise. If AI helps people work much more efficiently, employers may still need fewer workers overall. But it could also change the mix of workers employers need. For example, if GenAI makes less experienced workers more productive, employers may be able to hire more junior staff to do work that previously required more experience.

What SEEK job ads tell us

Having identified the occupations where the early effects of GenAI are most likely to appear, we can use SEEK job ad data to look for signs of changing demand for early-career workers in those roles.

SEEK job ads are useful for this analysis because they broadly reflect the Australian labour market by occupation.[10] That means they are a reasonable source for examining how demand may be shifting in jobs that are more exposed to GenAI. SEEK job ads also tend to move in line with the Australian Bureau of Statistics (ABS) Job Vacancy Survey.[11]
Since November 2022, millions of ads for non-routine cognitive roles have been posted on SEEK. This provides a large sample for examining how demand for these jobs may have changed since the release of ChatGPT.

Each SEEK job ad includes details such as: [12]

- the type of advertiser, such as recruiter, corporate, government and small & medium enterprise (SME).
- the type of role, such as full-time, part-time, contract, or casual.
- the advertised salary range.

SEEK job ads also include job titles, descriptions and other details. These can be used to classify each ad into an occupation using the Australian and New Zealand Standard Classification of Occupations (ANZSCO). Once that is done, each ad can be matched to JSA's GenAI exposure scores for that occupation.

How early-career roles are identified

SEEK does not collect demographic information on candidates, and employers in Australia are generally not allowed to ask a candidate's age when hiring. So, rather than use age to define early career roles it uses advertised salaries. This is based on a simple idea: pay usually rises with experience, especially in the earlier stages of a career. That means less experienced workers are more likely to appear toward the lower end of an occupation's salary range.[13]

A wealth of research supports this approach. Wages tend to increase with both experience and time in a role, and Australian data show the same general pattern.[14]

Using this idea, early-career roles are defined as ads in the bottom quarter of the real advertised salary distribution for each occupation. A pre-ChatGPT baseline is then used to compare how the number and share of these ads change over time.[15]

This approach has two advantages:

- it allows the definition of early-career work to differ across occupations.
- it keeps that definition fixed over time, based on the pre-ChatGPT period, so changes can be tracked consistently.

What the analysis shows

To examine how early-career hiring has changed in non-routine cognitive occupations since ChatGPT was released in November 2022, this analysis compares occupations with different levels of AI automation and augmentation exposure.[16]

It asks a simple question:

After ChatGPT launched, did occupations that are more exposed to AI see different changes in the share of early-career job ads than occupations that are less exposed? [17]

The analysis looks at both AI automation and augmentation exposure, while controlling for the other, and also adjusts for some other factors that could affect hiring patterns. These include differences between occupations that tend to stay fairly constant over time, such as education or licensing requirements, as well as economy-wide pressures such as high inflation. It also includes a measure to account for changes in employers' willingness to offer work-from-home arrangements.

This is important context because the results should not be interpreted as proof that AI caused the changes. The analysis does not meet all the conditions needed for a causal claim. What it shows is a statistically meaningful relationship between AI exposure and changes in the share of early-career job ads after ChatGPT was introduced.

Findings

The results suggest a mixed picture, with occupations exposed to AI through two channels.

1 **For occupations with a higher exposure to AI helping workers do tasks (augmentation) there has been an increase in the share of early-career job ads, compared with the pre-ChatGPT period.**

2 **For occupations with a higher exposure to AI doing tasks itself (automation) there has been a decline in the share of early-career job ads.**

For a given occupation, the overall effect depends on the balance between its augmentation and automation exposure.

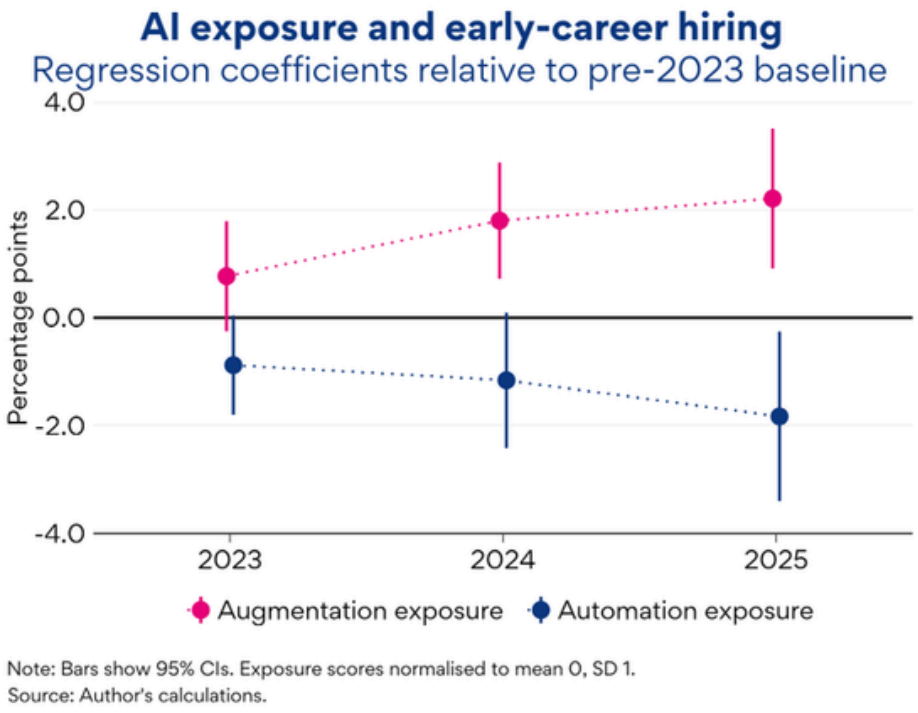
Rather than looking only at the average change since ChatGPT launched, the analysis also looks at how this relationship has changed over time. To make the pattern easier to interpret, the monthly results are grouped into calendar years.

This year-by-year view suggests that the relationship has grown stronger over time for both types of AI exposure (Figure 4). The estimated increase in the share of early-career ads for an occupation where AI helps do tasks has grown, while at the same time the decline in the share of early-career ads where AI does tasks itself has also grown.

This gradual strengthening matters. It suggests the effects are still unfolding, rather than happening all at once. One possible explanation is that businesses and workers are still learning how to use AI tools and gradually building them into everyday work.

That interpretation is also consistent with what we know about how new technologies are adopted. Their effects are often slow at first, then become more visible as firms invest in training, adjust workflows and integrate new tools more fully. This may be especially true for task replacement, which is likely to require bigger changes to how work is organised than task assistance.

Figure 4: Year-by-year effects on early-career share of occupation ads



Note: Bars show 95% CIs. Exposure scores normalised to mean 0, SD 1.
Source: Author's calculations.

Figure 4 shows this pattern in percentage-point terms. It shows how much the early-career share of job ads changes for an occupation with AI exposure one standard deviation above average. For example, the Advertising & Marketing Professionals occupation group has an AI augmentation score 1.6 standard deviations above average and an AI automation 1.2 standard deviations above average. So, in 2025 the model suggests that the early-career share of job ads will have increased on net by approximately 1.3 ppts by 2025, relative to the pre-2023 baseline.

Important limitations to keep in mind

There are several reasons to treat these results with caution.

First, the analysis shows an association, not proof that AI caused the changes.[18] Other factors may also be influencing hiring patterns.

Second, job ads are an imperfect measure of labour demand. They provide a useful signal, but they are not the same as actual hiring or employment. For example, one ad may represent a single role or several vacancies.

Third, this analysis focuses on occupations that account for less than half of total employment. That is a limitation if the goal is to describe the whole labour market. But it may also be a strength at this early stage, because these are the occupations where GenAI is most likely to be affecting demand already.

Conclusion

Using SEEK job ad data and AI exposure measures from JSA, this report looks at non-routine cognitive occupations in Australia from 2016 to 2025.

The results suggest that GenAI may be affecting early-career hiring in two opposing ways. On one hand, it may increase demand for less experienced workers by helping them perform tasks more effectively. On the other, it may reduce demand by automating some tasks itself.

So far, the first effect appears stronger than the second. But the negative effect has grown over time, and the year-by-year results show no clear sign that these changes have settled.

> **This suggests that the labour market effects of AI are still unfolding**

Technological change has always reshaped the workforce. New tools make some tasks easier, reduce the need for others, and create new ways of working. GenAI is the latest example, but it is entering an area of work that many earlier technologies could not easily reach: tasks involving language, communication and knowledge work.

Even so, it is important not to overstate what GenAI has done so far. The most useful approach is to focus on the parts of the labour market that GenAI could plausibly be affecting already, rather than assuming it explains every recent change in hiring or employment. Many organisations are still in the early stages of adoption, and other long-running trends such as digitisation and online services are also likely to be shaping demand for some occupations.

That said, GenAI is continuing to improve, and the range of tasks it can perform is expanding. This means its effects on hiring and job design may become more significant over time across all occupations.

Notes & Citations

[1] Does Sam Altman Know What He's Creating? The Atlantic (2023)

[2] Canaries in the Coal Mine? Six Facts about the Recent Employment Effects of Artificial Intelligence, Brynjolfsson, Chandar and Chen (2025) and Canaries, Interest Rates, and Timing: More on the Recent Drivers of Employment Changes for Young Workers, Brynjolfsson, Chandar and Chen (2026).

[3] See Canaries, Interest Rates, and Timing: More on the Recent Drivers of Employment Changes for Young Workers, Brynjolfsson, Chandar and Chen (2026). In contrast,Labor market impacts of AI: A new measure and early evidence, Massenkoff and McCrory (2026) finds no systematic increase in unemployment for highly exposed workers since late 2022, though they find suggestive evidence that hiring of younger workers has slowed in exposed occupations. While The Broken Ladder: AI, Remote Work, and Early-Career Hiring, Lambert and Schindler (2026)suggests all the decline could be attributed to work-from-home rather than AI. More recently in Australia, AI and employment in Australia, DEWR (2026) find no evidence to date of an AI driven upheaval of the labour market.

[4] See Our Gen AI Transition Analysis, JSA (2025) for a discussion of JSA's AI exposure scores.

[5] Labor market impacts of AI: A new measure and early evidence, Massenkoff and McCrory (2026) highlight that the observed usage of AI, even in 2026, is far from its theoretical capabilities. Agentic AI assistants, like Claude Code, were not introduced until 2025 so evidence of the productivity impact and flow on effects may be also limited before then.

[6] Taxi driver is a good example of a manual role that could be replaced by AI technology, like deep-learning and neural networks, but also requires very specialised video-processing hardware and heavily modified vehicles. Automated taxi services like Waymo, that use such technology, predate the release of GPTs and GenAI by several years.

[7] The calculated employment shares are based on the ABS' Labour Force Survey detailed ANZSCO occupation group employment estimates and the RBA's ANZSCO occupation group to task classification. For another example where this classification has been used see Heath (2019).

[8] The Spearman correlation of automation and exposure scores for non-routine cognitive occupations is also the weakest among the different occupation groups.

[9] GenAI and GPTs are evolving so these scores could change in the future, but they were current as of 2025 and likely an overestimate of GenAI's ability in 2023.

[10] For discussions of how representative SEEK's job ads are in Australia and their exposure to AI, see SEEK - Rise of the Machines - ad volume downside, Macquarie Equity Research (2026) and SEEK Limited: Assessing the impact of AI on the jobs market. the E&P Financial Group (2026).

[11] See Indicators of Labour Demand, RBA (2018) for a short discussion of the relationship between SEEK job ads and other indicators of labour demand like the ABS job vacancies series.

[12] To ensure that the sample of job ads being used for the analysis reflect changes in the underlying demand for the roles and not budgetary decisions by government or changes in contractual arrangements on SEEK, I restrict the analytical sample to corporate and SME customers only. Similarly, to ensure the changes do not represent temporary fluctuations in labour needs, the sample is restricted to full-time jobs only, excluding contract, casual and part-time jobs.

Notes & Citations

[13] Depending on how you define early career, age may not be appropriate anyway. For example, it is highly unlikely that an early career university professor will be less than 25 given the typical educational requirements of both an undergraduate and post-graduate degree. Similar arguments could be made for GPs and several other roles. Using age to identify early career roles also ignores the reality that people may switch career paths throughout their lifetime.

[14] See Schooling, Experience, and Earnings, Mincer (1974) for a seminal paper on experience and earnings and Specific Capital, Mobility and Wages: Wages Rise with Job Seniority, Topel (1991) for a slightly more recent discussion on tenure and earnings. For the Australian context see Returns to Education in Australia, Leigh (2024).

[15] An examination of the distribution of advertised salaries for any single occupation for a single month shows that there is a tendency for advertised salaries to bunch around certain levels, consistent with different salary levels for different experience levels. The results discussed are broadly robust to changing the early-career definition to exclude the bottom 5% of advertised salaries or expanding the upper bound slightly.

[16] More explicitly, I estimate a two-way fixed effects (TWFE) regression with a continuous treatment, similar to the framework discussed in Callaway, Goodman-Bacon and Sant'Anna (2024).

[17] A key assumption for this analysis to be valid is that all non-routine cognitive occupations would have had similar changes in early-career job ads if ChatGPT had never been introduced. This is commonly referred to as the "parallel trends" assumption and is tested by examining the trends in early-career job ad shares prior to the introduction of ChatGPT.

[18] That is, the estimates reported above are best understood as average treatment effects on the treated (ATT-type parameters) rather than causal response parameters.

About Blair Chapman, PhD

Dr Blair Chapman is SEEK's Chief Economist. Blair undertakes economic analysis and forecasting of the Australian and New Zealand economies and labour markets. He leverages SEEK's data to develop unique insights about the economies SEEK operates in.

Blair's economic analysis and forecasting skills have been honed across both private and public organisations including ANZ, Deloitte Access Economics, the Reserve Bank of Australia (RBA) and the Australian Bureau of Statistics (ABS). While at the RBA, he was their representative on the ABS's Labour Statistics Advisory Group for several years.

Blair holds a PhD in Economics from Johns Hopkins University where his studies concentrated on macroeconomics and labour. He completed his undergraduate studies at Monash University, where he majored in Economics, Econometrics and Accounting.

About SEEK Economist Insights

These insights aim to inform hirers, candidates and the broader public about the economy, and particularly the labour market. The insights draw on SEEK's unique data, at times combined with other data from trusted sources, to provide a unique perspective on the labour market.

See more SEEK Economist Insights here.