



**Written Testimony of Dr. Karin Kimbrough  
Chief Economist at LinkedIn**

**Senate Health, Education, Labor and Pensions  
Subcommittee on Employment and Workplace Safety**

**“Reading the Room: Preparing Workers for AI”**

September 25, 2024

Chair Hickenlooper, Ranking Member Braun, and Members of the Subcommittee: thank you for inviting me to testify today.

My name is Dr. Karin Kimbrough, and I am the Chief Economist at LinkedIn. I lead a team of economists and data scientists dedicated to understanding how the world of work is evolving through what we call the Economic Graph Research Institute (EGRI). We study workplace trends and shifts in the macro economy, identify opportunities for professionals in a wide range of roles and occupations, and strive to understand the relative demand for work across multiple industries worldwide. I have worked in the public and private sectors on macroeconomic research and finance for over 20 years, including nearly a decade at the Federal Reserve Bank of New York, where I was a vice president in the Markets Group.

I appreciate the opportunity to share our insights on how the increased deployment of artificial intelligence (AI) applications in nearly every industry is affecting the workforce and work. LinkedIn is the world's largest professional network with more than 1 billion members in more than 200 countries and territories worldwide. Our data provides us with real-time, granular insights that enable us to conduct extensive research on AI as it relates to jobs, skills, workers, and the emerging global AI economy.

We believe AI holds great promise and potential to enhance the productivity of workers, and to allow workers to focus on more meaningful aspects of their jobs.

There are three broad points which I would like to highlight from our insights and other research, which are relevant to today's hearing.

First, our early observations suggest AI is already impacting jobs and skills; second, employers are placing a premium on AI talent and employer-driven AI training; and third, workers are increasingly realizing the value and benefits of acquiring AI skills.

Finally, I will touch upon the global context of AI supply and demand, and the policies we encourage this Committee to consider to further expand access and opportunities for AI skilling.



## I. AI is Impacting Jobs and Skills

Almost a year ago, this Subcommittee held a hearing focused on AI and the future of work, with the expectation that AI, and Generative AI in particular, would have a growing impact on jobs and workers. Over the past year, we have seen this become a reality.

AI is here, and it is changing the way we work. The earliest indicators of this evolution come from our data around the hiring of AI technical talent – meaning those with AI engineering skills, who are critical to enabling companies to build the right tools for AI implementation and adoption at scale.

LinkedIn hiring data show that there was a 6% increase in hiring for AI technical talent in the United States in the first 12 months after ChatGPT launched. This reflects an acceleration in demand for AI expertise and is an important initial step in firms' success in deploying AI more broadly.<sup>1</sup> This hiring increase coincided with a hiring slowdown in the Technology industry at large (-10% y/y), and the United States overall (-10% y/y).<sup>2</sup> Further, data over the last eight years show that hiring for AI technical talent has increased by more than 300% globally.<sup>3</sup>

Beyond demand for AI technical talent, we see an emerging impact of Generative AI and AI tools on the broader workforce. In particular, the wider accessibility of these new technologies to a non-technical workforce using equipped smartphones and laptops suggests that the speed of diffusion will be faster than prior technological innovations. In other words, the impacts of this technology will be widespread, crossing industries, jobs, and skills.

The extent to which AI has penetrated the global workforce is quite remarkable. Microsoft and LinkedIn released the 2024 Work Trend Index Report, which surveyed 31,000 people across 31 countries, and found that 75% of global knowledge workers report using Generative AI at work. Equally striking is the speed at which this is happening. The survey found that 46% of those AI users report that they started using it less than six months ago.<sup>4</sup>

As AI is becoming more ingrained in our daily work, we're seeing new jobs being created and the skill sets for roles shift. The number of companies with a "Head of AI" position has tripled in the past 5 years and grew by more than 28% in 2023. Globally, 12% of recruiters now say they are creating new roles tied specifically to the use of Generative AI.<sup>5</sup> As an example of how jobs are changing, our data show the skills needed for the average job have changed by 25% since 2015. By 2030, we expect skills to change by more than two-thirds, with tools like Generative AI

---

<sup>1</sup> LinkedIn Economic Graph Research and Insights. See also Stanford University, *Artificial Intelligence Index Report 2024*, [https://aiindex.stanford.edu/wp-content/uploads/2024/05/HAI\\_AI-Index-Report-2024.pdf](https://aiindex.stanford.edu/wp-content/uploads/2024/05/HAI_AI-Index-Report-2024.pdf), and OECD, *OECD.AI Policy Observatory*, <https://oecd.ai/en/data?selectedArea=ai-jobs-and-skills&selectedVisualization=ai-talent-concentration-by-country>.

<sup>2</sup> *Id.*

<sup>3</sup> Microsoft and LinkedIn, *2024 Work Trend Index Annual Report*, May 8, 2024, <https://www.microsoft.com/en-us/worklab/work-trend-index/ai-at-work-is-here-now-comes-the-hard-part>.

<sup>4</sup> Microsoft and LinkedIn, 2024.

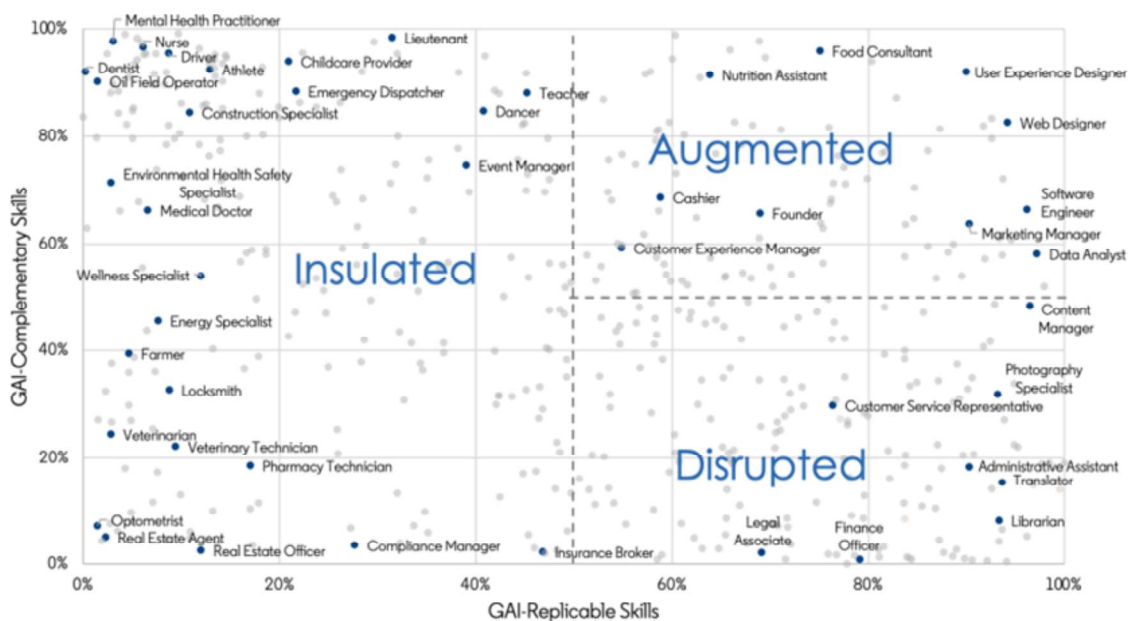
<sup>5</sup> *Id.*

accelerating this change.<sup>6</sup> In other words, for many of us, two-thirds of what we do at work every day will look very different in just a few short years.

We also expect AI and Generative AI to impact a wide number of the jobs and occupations held by workers today. To better understand what this impact is likely to look like, we have analyzed data across our platform to estimate the percentage of occupational skills that are complemented by AI and the percentage of skills that are replicable by AI. What we found, as highlighted in the chart below, is the impact AI will have on jobs will vary considerably. Some jobs, like translator, are likely to experience disruption because a significant portion of the skills can be replicated by Generative AI. As a result, these workers will need extensive training to develop new AI-related skills to effectively integrate AI into their workflows. On the other hand, workers in other occupations, like physical therapists, will be largely insulated from Generative AI because many of the skills they use are complemented by AI, but not replicated by it. However, over time, we do expect that the vast majority of occupations – even ones that appear insulated for now – will eventually incorporate Generative AI into their tasks, with some occupations transforming more than others.<sup>7</sup>

### Exhibit 3. Occupational composition by GAI-replicable and GAI-complementary skills

Normalized percentage GAI-replicable and GAI-complementary skills by occupation



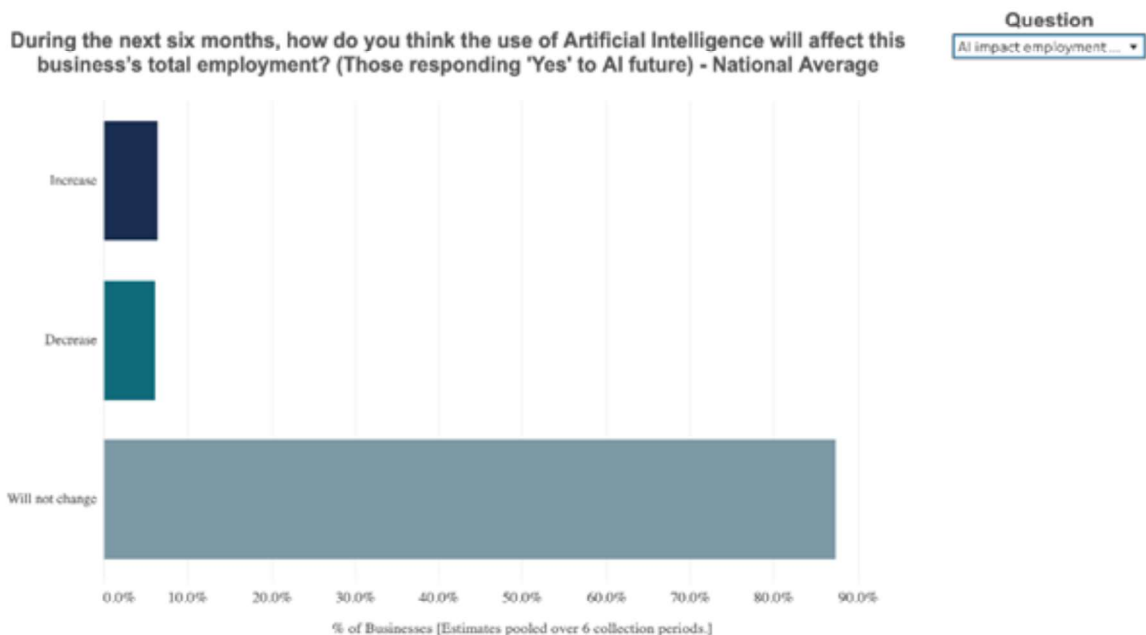
Source: LinkedIn Economic Graph Research Institute

<sup>6</sup> *Id.*

<sup>7</sup> Karin Kimbrough and Mar Carpanelli, *Preparing the Workforce for Generative AI*, August 23, 2023, <https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/preparing-the-workforce-for-generative-ai.pdf>.

By extension, this also means the workforces of certain industries are likely to be more directly impacted by AI than others. For example, we found that 50% of workers in the Financial Services industry are likely to face AI disruption in their jobs, compared to 36% of workers in the Technology industry and just 18% of workers in Accommodation and Food Services.<sup>8</sup> This points to the need for and value of working within sectors not only to better understand the potential impacts of AI, but to address worker needs, which I will discuss further below.

Despite these projected disruptions, to date, recent Federal data suggest that the augmentation and disruption of these skills is not necessarily leading to people losing their jobs. According to recent U.S. Census Bureau data, employers in the U.S. have few plans to reduce their total employment due to AI. In fact, the percentage of employers anticipating an increase (6.5%) in employment edges out those anticipating a decrease (6.1%).<sup>9</sup>



Consistent with these findings, our [research](#) shows that the adoption by firms of GitHub Copilot, a Generative AI powered code completion and automatic programming tool, boosts hiring by about 3 percentage points, particularly for entry- and senior-level engineers, with firms hiring more software engineers overall. It also leads to a 7% increase in job postings for software engineers on LinkedIn, without displacing existing workers.<sup>10</sup>

<sup>8</sup> Kimbrough and Carpanelli, 2023.

<sup>9</sup> U.S. Census Bureau, *Business Trends and Outlook Survey*, 2024, [www.census.gov/programs-surveys/btos.html](http://www.census.gov/programs-surveys/btos.html).

<sup>10</sup> Matthew Baird, Mar Carpanelli, Brian Xu, and Kevin Xu, *GitHub Copilot and the Future of Work: A Working Paper*, September 2023, <https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/github-copilot-working-paper.pdf>.



## II. Employers are Placing a Premium on AI Talent and are Focusing on Training

Employers are starting to see the advantage of AI and its capacity to increase productivity and, therefore, the need to hire workers with technical and broader AI literacy skills, by which we mean the familiarity with and ability to use AI tools. The 2024 Work Trend Index found that 66% of business leaders with decision-making authority said they wouldn't hire someone without AI skills, and 71% said they'd rather hire a less experienced candidate with AI skills than a more experienced candidate without them.<sup>11</sup>

If these global survey results hold true in the coming years, we expect to see the demand for those with AI skills, both in engineering and literacy, to quickly outpace supply given the labor pool largely lacks these skills.

In the face of this challenge, a growing number of employers are realizing the need not only to seek out new workers with AI skills, but more importantly, to develop their own AI workforce – including both AI technical and AI literate talent.

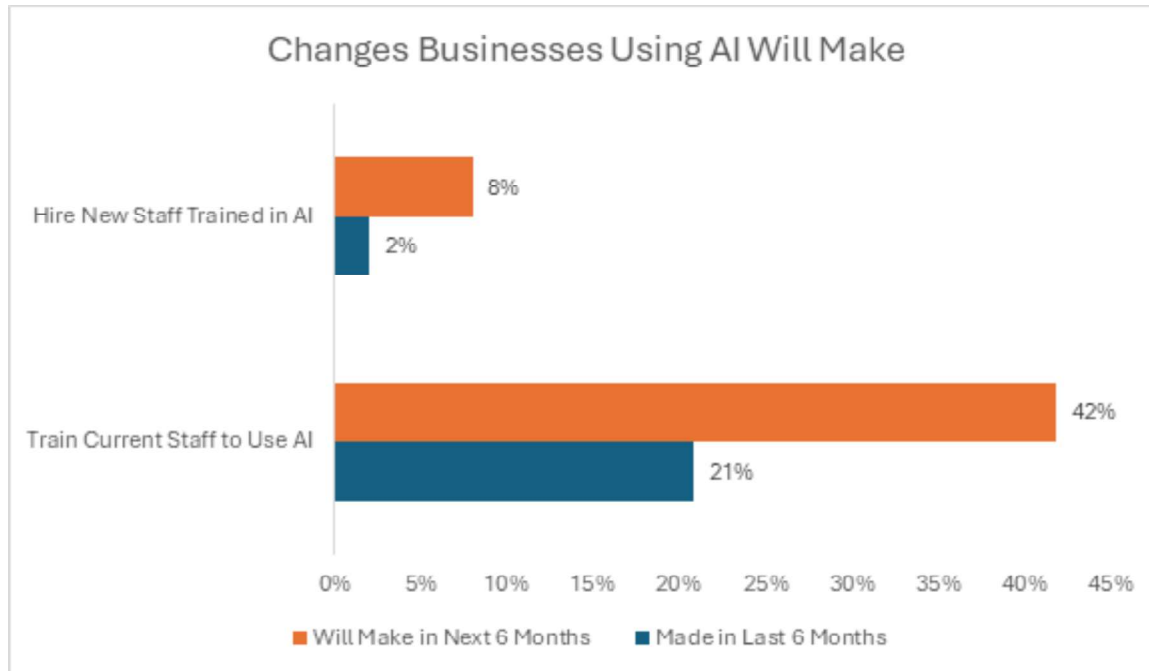
As an example, NIQ, a U.S.-based marketing research firm out of Chicago that uses LinkedIn Learning, has been working to train their workers on AI. In the last 12 months, NIQ employees have watched more than 73,000 total hours of LinkedIn Learning content and, when looking at the types of courses NIQ employees are taking, five of the top ten courses are on AI. Additionally, more than 1,900 employees registered for NIQ's AI Learning challenge – during which employees watched more than 18,000 hours of AI learning content.

Recent data from the U.S. Census Bureau point more broadly to this trend. The Business Outlook and Trends Survey found that the percentage of companies reporting plans to hire staff already trained in AI in the next six months will quadruple compared to those who reported hiring trained staff in the past six months. While this change is significant, this trend is dwarfed by the percentage of companies who report planning to offer AI training to their workers, which will double from 21% reporting having trained current staff in the past six months to 42% planning to provide training in the next six months. This tells us that companies know they need to train their own workers in AI because outside talent is still skilling up and not yet available in large numbers.<sup>12</sup>

---

<sup>11</sup> Microsoft and LinkedIn, 2024.

<sup>12</sup> U.S. Census Bureau, 2024.



Source: U.S. Census Bureau, Business Outlook Trends Survey<sup>13</sup>

While this data points to a positive trend, the fact remains that employers in the U.S. could be doing more to ensure their employees have the AI skills necessary to fully adopt AI into their work. In fact, we found that only a quarter of Learning and Development teams globally plan to offer training programs on how to use Generative AI this year.<sup>14</sup>

Business leaders who fail to devote the resources necessary to reskill and upskill their AI talent risk falling behind companies who are making these investments and seeing productivity gains from leveraging this technology.

### III. Workers are Increasingly Seeing the Value of Acquiring AI Literacy Skills

Our data show that workers recognize the value of AI skills in an increasingly competitive labor market. We observe this keen interest by workers to upskill firsthand in our own LinkedIn Learning data. LinkedIn Learning currently offers over 1,000 courses on AI, from learning basic AI principles, concepts, and applications to advancing skills in machine learning. Since January 1, 2023, the number of people taking LinkedIn Learning courses on AI has grown by 13 times.<sup>15</sup> As of earlier this year, the use of LinkedIn Learning courses designed to build AI literacy skills spiked 160% among non-technical professionals, with workers in roles like project managers, architects, and administrative assistants looking to skill up the most.<sup>16</sup>

<sup>13</sup> *Id.*

<sup>14</sup> LinkedIn Learning, *LinkedIn Workplace Learning Report 2024*, [www.learning.linkedin.com/content/dam/me/business/en-us/amp/learning-solutions/images/wlr-2024/LinkedIn-Workplace-Learning-Report-2024.pdf](http://www.learning.linkedin.com/content/dam/me/business/en-us/amp/learning-solutions/images/wlr-2024/LinkedIn-Workplace-Learning-Report-2024.pdf).

<sup>15</sup> LinkedIn Learning, 2024.

<sup>16</sup> Microsoft and LinkedIn, 2024.



Workers recognize that acquiring Generative AI and other AI skills not only makes them more competitive but also can render work more productive, safer, and potentially more interesting. According to the Work Trend Index, workers who are using AI tools report that AI helps them save time (90%), focus on their most important work (85%), be more creative (84%), and enjoy their work more (83%).<sup>17</sup>

Workers also understand the value of making it known to their current or prospective employers that they have acquired these competencies. Our data show there are now 142 times as many members with AI literacy skills on their LinkedIn profiles than there were last year.<sup>18</sup>

While it is encouraging that so many workers are able to seek out their own training opportunities, we know this is not enough. There are still barriers in place that prevent access to these opportunities across multiple occupations. We believe a more coordinated and widespread effort is necessary to ensure that all workers have the ability to gain the necessary AI skills.

### **The Global Context**

With respect to AI skills globally, we see that the US has 31% of the world's AI technical talent and that other countries are picking up the pace. For instance, the concentration of this talent in the US increased by 13% from 2022 to 2023. Over the same period, the growth in AI technical talent was faster in the United Arab Emirates (29% y/y), India (24% y/y), Saudi Arabia (21% y/y), the United Kingdom (16% y/y), and Canada (15.4% y/y). The pace of growth of AI technical talent was relatively modest in Germany (9.5% y/y) and France (2.1% y/y).<sup>19</sup>

Similarly for members with AI literacy skills, over 30% of members with these skills are in the United States, closely followed by India at 29%.<sup>20</sup> We expect demand for this talent to continue to grow in the US and around the world.

### **Policy Considerations**

I commend this Subcommittee for seeking to better understand the impact and opportunities of AI. As you continue your work in this area, we would encourage you to consider policies that accelerate AI adoption across our nation, and ensure it benefits those who don't have access to training or who need additional support to gain these skills.

The Committee's current effort to reauthorize the Workforce Innovation and Opportunity Act (WIOA) provides one way in which to support such individuals from across all sectors, as the economy shifts towards an AI-driven future.

---

<sup>17</sup> Microsoft and LinkedIn, 2024.

<sup>18</sup> Karin Kimbrough, *AI at Work Has Arrived*, May 8, 2024, <https://economicgraph.linkedin.com/blog/ai-at-work-has-arrived>.

<sup>19</sup> LinkedIn Economic Graph Research and Insights. See also Stanford University and OECD.

<sup>20</sup> *Id.*



Congress can also promote the adoption of skills-based hiring as a way to provide more opportunities to those who may have in-demand AI skills but may lack a traditional 2- or 4-year degree. Skills-first hiring allows companies to tap into a broader talent pool, including individuals who have gained relevant skills through non-traditional pathways such as bootcamps, online courses, or self-study. This approach can be particularly beneficial in rapidly evolving fields like AI, where the demand for specific skills often outpaces the supply of formally qualified candidates.

We appreciate the opportunity to work with Members of the Subcommittee on this and other legislation and look forward to collaborating on support for workers and employers who seek to take advantage of the benefits AI has to offer, including small businesses, many of which may benefit from the potential for AI tools to increase efficiencies and productivity.

Finally, we would encourage you to consider how to bolster Federal data, including through public-private partnerships, to better understand how AI is impacting the workforce.

Thank you for the opportunity to join you here today and I look forward to answering any questions.