

AI at Work Report 2025:

How GenAI is Rewiring the DNA of Jobs

The future of work and the role of generative artificial intelligence (GenAI) is not a question of whether GenAI will change jobs, but what kinds of jobs will be most and least changed, why, and how.

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Indeed's AI at Work is a series of research reports from [Hiring Lab](#), Indeed's economic research arm. This research is designed to provide data and new insights into the impact of AI on the labor market to help employers and job seekers better understand and prepare for the changing workforce.

Indeed Hiring Lab creates innovative data insights on the global labor market that inspire new conversations about the state of work. As the economic research arm of [Indeed](#), the world's number one job site, Hiring Lab is driven by a team of leading economists and data scientists who provide thought leadership on global labor market conditions, including hiring trends, salary information, popular skills, and employer benefits. Hiring Lab analyzes millions of data points across time collected from Indeed's job postings, resumes, and job seeker behaviors to reveal emerging trends in the United States and across the world.

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The Indeed GenAI Skill Transformation Index measures how much GenAI could change the way different skills or jobs are done. Instead of measuring if GenAI is capable of fully replacing a human worker, it examines how skills may be applied going forward and how human involvement with those skills and tasks may change. GenAI models evaluated both the cognitive and physical demands required across almost 2,900 work skills, and GenAI's capacity to perform them. Based on this evaluation, skills were grouped into four distinct categories based on their potential to be transformed by GenAI: Minimal transformation, assisted transformation, hybrid transformation, and full transformation.

KEY POINTS

- More than a quarter (26%) of jobs posted on Indeed in the past year could be “highly” transformed by GenAI. But the majority (54%) are likely to be “moderately” transformed, and their evolution will depend on how quickly businesses adopt GenAI, and how well workers adapt and reskill.
- Almost half (46%) of skills in a typical US job posting are poised for “hybrid transformation” by GenAI. Human oversight will remain critical when applying these skills, but GenAI can already perform a significant portion of routine work.
- Some occupations, including software development, are more highly exposed. Roles requiring more physical presence and human interaction, including nursing, are likely to be less impacted, with GenAI primarily changing administrative tasks but not necessarily the core parts of these jobs.
- Earlier versions of this analysis found that zero human work skills were “very likely” to be fully replaced by GenAI. Today, 19 skills (0.7% of all skills analyzed) were assessed to be “very likely” to be fully replaced by GenAI, still small in absolute terms, but a significant signal of progress.

The future of work and the role of generative artificial intelligence (GenAI) is not just about job loss or automation — it's about transformation. Rather than thinking in either-or terms — jobs lost vs. jobs saved — we must understand GenAI's impact along a continuum of transformation. The real question is not whether GenAI will change jobs — it absolutely is, and will. The question is what kinds of jobs

Critically, these are only measures of potential transformation. Any realized impacts will depend entirely on whether and how businesses adopt and integrate GenAI tools.

will be most and least changed, why, and how.

To quantify this shift, Hiring Lab developed Indeed's GenAI Skill Transformation Index (GSTI) — a metric designed to estimate how substantially GenAI could transform a given skill or job, not by assessing replacement likelihood, but

by evaluating the degree of potential transformation. Under this newly designed framework, we found that 41% of almost 2,900 common work skills assessed are exposed to the highest potential levels of GenAI-driven transformation, and roughly a quarter (26%) of all jobs on Indeed appear poised to radically transform in the future.

Critically, these are only measures of *potential* transformation. Any realized impacts will depend entirely on whether and how businesses adopt and integrate GenAI tools — a process that often relies on a foundational level of [digitalization that many firms have yet to achieve](#). It's also important to note that the US labor market has been in a [multi-year slowdown](#), which makes it difficult to identify changes attributable to GenAI from those driven by broader economic trends.

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Understanding the depth of change: The GenAI Skill Transformation Index (GSTI)

Hiring Lab's previous research developed a methodology to assess GenAI's potential across four dimensions: the models' ability to provide theoretical knowledge related to a given work skill, their ability to solve problems using a skill, the importance of physical presence in executing a skill, and overall likelihood that a GenAI model could fully replace a human in performing a skill.

Almost 2,900 skills were evaluated, from aviation to wound care.

dimensions that most directly determine task transformation:

- Problem-solving ability** — The degree to which a skill requires cognitive reasoning, applied knowledge, and practical judgment, and how well GenAI can replicate it.
- Physical necessity** — Whether a skill requires physical execution and thus lies outside the current scope of GenAI. Until general-purpose robotics advances significantly, these tasks remain human-exclusive.

Second, we moved from a single-model evaluation to a multi-model approach. Previously, we relied on assessments generated by one large language model — OpenAI's flagship GPT model. This analysis tested multiple models to understand their consistency and relevance for our research use case. The results were clear: not all models perform equally. Some produced lower-quality outputs or highly volatile responses across multiple runs, and the models' capabilities can and do vary significantly. For businesses seeking to more broadly implement GenAI into their workflows and products, choosing the right model for their specific processes and business cases will be critical in ensuring reliable insights. Ultimately, this analysis was based on the combined, consistent, high-quality results from OpenAI's GPT-4.1 and Anthropic's Claude Sonnet 4.

We also introduced a systematic analysis of the "thinking" processes within each model's evaluation, focusing on selected skill families and occupations. Reviewing not just the outputs but also the models' own explanations of their capabilities and limitations helped us gain a deeper understanding of how GenAI is reshaping the DNA of jobs, showing not only which skills are most/least likely to be replaced by GenAI output, but also how the human performance of those skills could change.

As in past years, we began with an Indeed-identified base of almost 2,900 individual work skills commonly found in US job postings, ranging from aviation to wound care. These 2,900 job-related skills were each rated on a 5-point scale on both the problem-solving and physical necessity dimensions. These evaluations were plotted into a 5x5 matrix capturing the relationship between a skill's cognitive and physical demands, and GenAI's capacity to perform it. Based on this structure, we identified four distinct degrees of potential GenAI-driven skill transformation:

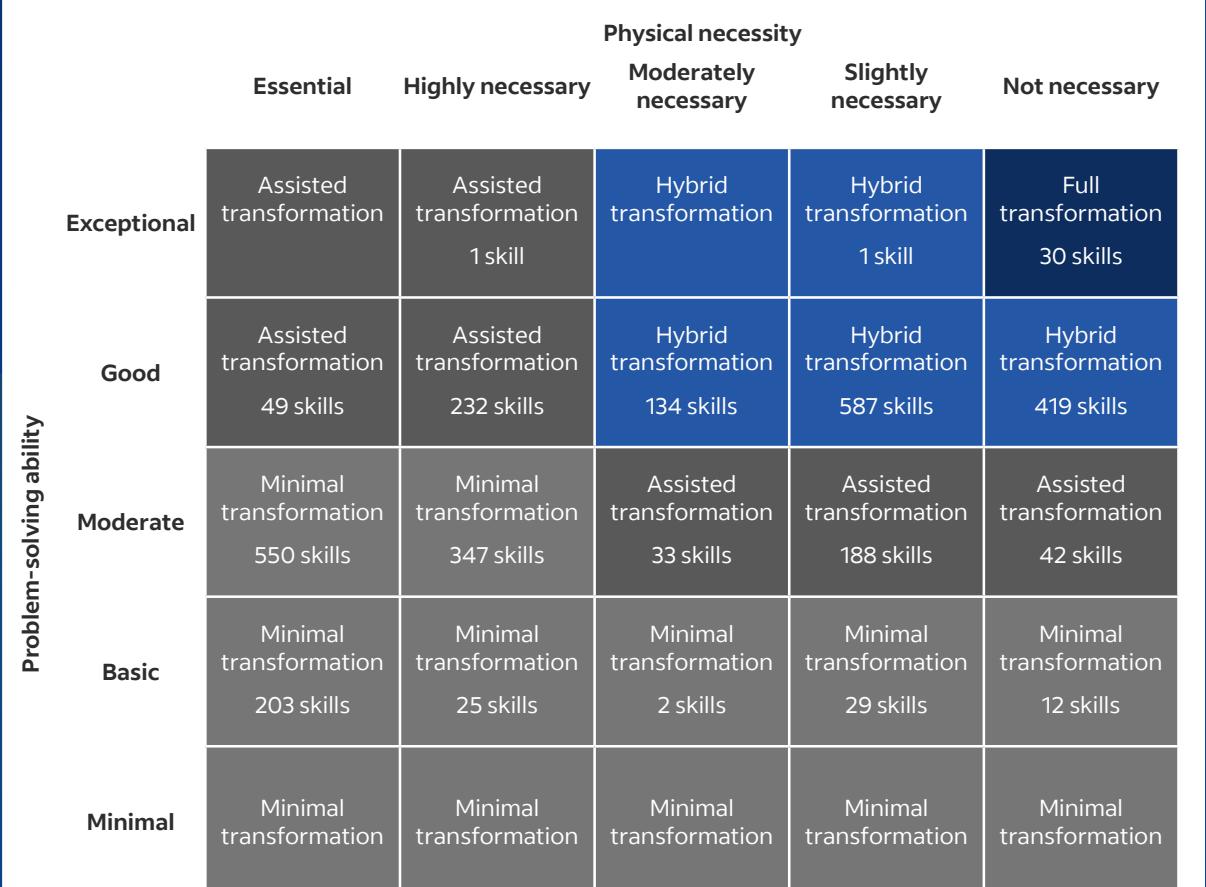
- Minimal transformation:** Through some combination of elevated physical requirements and/or limited reasoning capability, human performance of these skills will likely remain largely unchanged. Skills that fall into this categorization include: patient care, employee relations, and network administration.
- Assisted transformation:** These are skills where GenAI may offer limited or generic support (creating/providing templates, conducting basic research, or suggesting tools/methods), but where humans still need to practically apply the skill. Skills that fall into this categorization include: environmental law, trading, and teaching.

- Hybrid transformation:** GenAI performs the bulk of routine work for these skills, but human oversight (though not necessarily direct execution) remains essential. GenAI can independently execute standard tasks using these skills with high reliability, but humans are still needed to manage exceptions, interpret ambiguous cases, validate outputs, and/or ensure ethical or legal compliance. Skills that fall into this categorization include: medical coding, travel planning, and proofreading.

- Full transformation:** GenAI has the potential to use these skills independently to execute on typically well-structured tasks that could, under the right conditions, be automated end-to-end. However, the potential for full transformation doesn't guarantee that the models will fully displace humans from these skills. Actual transformation depends on model capability, business readiness, and task context. Skills that fall into this categorization include: basic math, prompt engineering, and image classification

The continuum of change: GenAI Skill Transformation (GSTI) categories

Analyzing ~2,900 Indeed skills by problem-solving ability and physical necessity to reveal varying levels of GenAI influence



Source: Indeed

Applying this framework to the ~2,900 skills extracted from US job postings, we found a clear distribution: 40% of skills fall into the minimal transformation category, 19% into assisted transformation, 40% into hybrid transformation, and 1% into full transformation. Notably, technology skills dominate the deeper transformation categories — 54% of skills that fall into the hybrid transformation category, and 57% of fully transformable skills, are technology skills.

Most skills still out of reach for GenAI

Distribution of ~2,900 skills across GenAI Skill Transformation Index (GSTI) levels.
Derived from GPT-4.1 and Claude Sonnet 4 evaluations.

Minimal transformation



Assisted transformation



Hybrid transformation



Full transformation



Source: Indeed

When our [initial analysis](#) was completed a year ago, no skills were rated as “very likely” to be fully replaced by GenAI. Today, 19 skills (0.7% of all skills analyzed) were assessed to be “very likely” to be fully replaced by GenAI, still small in absolute terms, but a significant signal of progress. GenAI has gotten (and continues to get) smarter. As long as physical execution is not required—an admittedly big caveat—and GenAI capabilities continue to grow, more skills are likely to cross the threshold into realistic automation as work continues to evolve.

The hybrid horizon: Almost half of US job skills are ready for GenAI transformation

Not all companies are at the same point in their AI journey. Some actively integrate GenAI tools and models into their workflows, while others are still early in their digital transformation, or have yet to begin. This critically important reality means that this analysis does not and largely cannot measure transformation itself, but only transformational potential — what

could happen if GenAI were fully integrated into how work gets done.

To explore this potential, we applied the GenAI Skill Transformation Index (GSTI) to skills found across the broad range of occupations

represented by US job postings published on Indeed. For each occupation, we assessed the share of listed skills that fell into one of the four transformation categories (minimal, assisted, hybrid, full).

On average, 46 percent of skills in a typical job posting fall into the categories of hybrid transformation or full transformation.

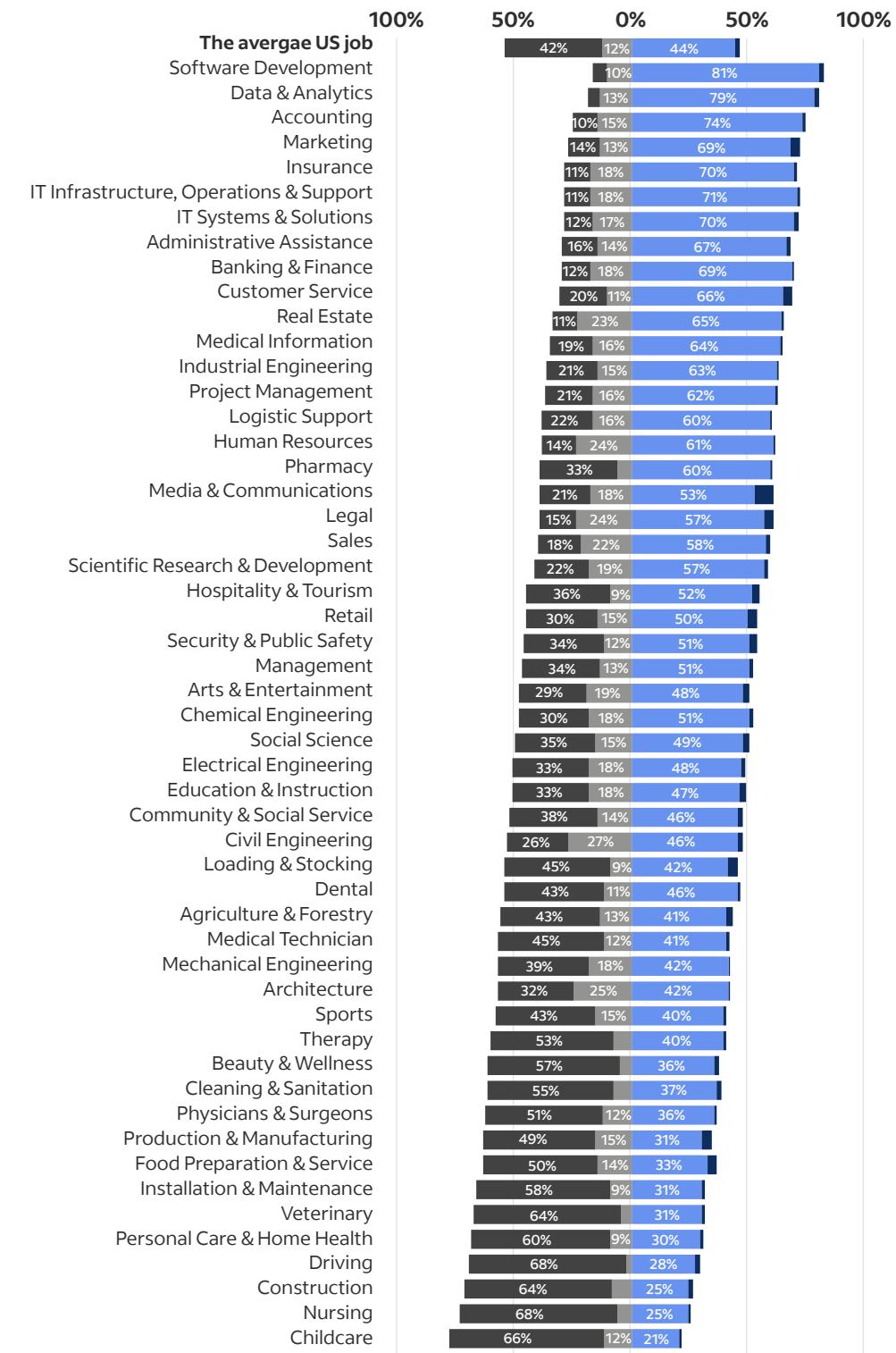
On average, 46 percent of skills in a typical job posting fall into the categories of hybrid transformation or full transformation. In other words, under optimal conditions, GenAI could potentially profoundly reshape almost half the skills needed by a typical worker. Twelve percent of skills in the typical job fall into the assisted transformation category, suggesting areas where human effort will be supported — but not replaced — by GenAI. The remaining 42 percent of skills are expected to remain largely unaffected, at least for now, falling into the minimal transformation zone.

However, the degree of potential transformation varies widely across occupations. For example, a large majority (81%) of skills mentioned in the typical software development job posting fall into the hybrid transformation classifications. By contrast, two-thirds (68%) of listed skills in the typical nursing job posting fall into the minimal transformation category. By analyzing the core skills within these occupations and their relative exposure to GenAI, we can gain insight into those skills and tasks expected to remain more person-forward vs. those which may be taken over by GenAI, and, ultimately, how jobs may change going forward.

Almost half of skills in the typical US job are poised for deep transformation

Share of skills in US job postings on Indeed by transformation level, based on the GenAI Skill Transformation Index (GSTI). Derived from GPT-4.1 and Claude Sonnet 4 evaluations. Job postings from May 2024 to April 2025

■ Minimal transformation (No GenAI impact)
■ Assisted transformation (Human leads, GenAI supports)
■ Hybrid transformation (GenAI leads, human oversees)
■ Full transformation (GenAI acts independently)



Source: Indeed.

Nursing in the GenAI era: Shielded at the core, shifting at the edges

The core of the nursing profession — including skills from the patient care, patient care settings & specialization, and caregiving skill families — requires physical presence, emotional intelligence, and real-time human decision-making. These areas fall firmly within the category of ‘minimal transformation.’ As one of the model’s thinking processes put it: “...the core of patient care is inherently physical and interpersonal.”

The objective among healthcare employers likely won’t be to reduce staff, but instead to deploy GenAI where it improves task allocation.

in our evaluation. For example, GenAI systems already support real-time translation, which is particularly valuable in multilingual care settings. General administrative (14%) and specific healthcare administrative-related skills (9%) are also further along the automation

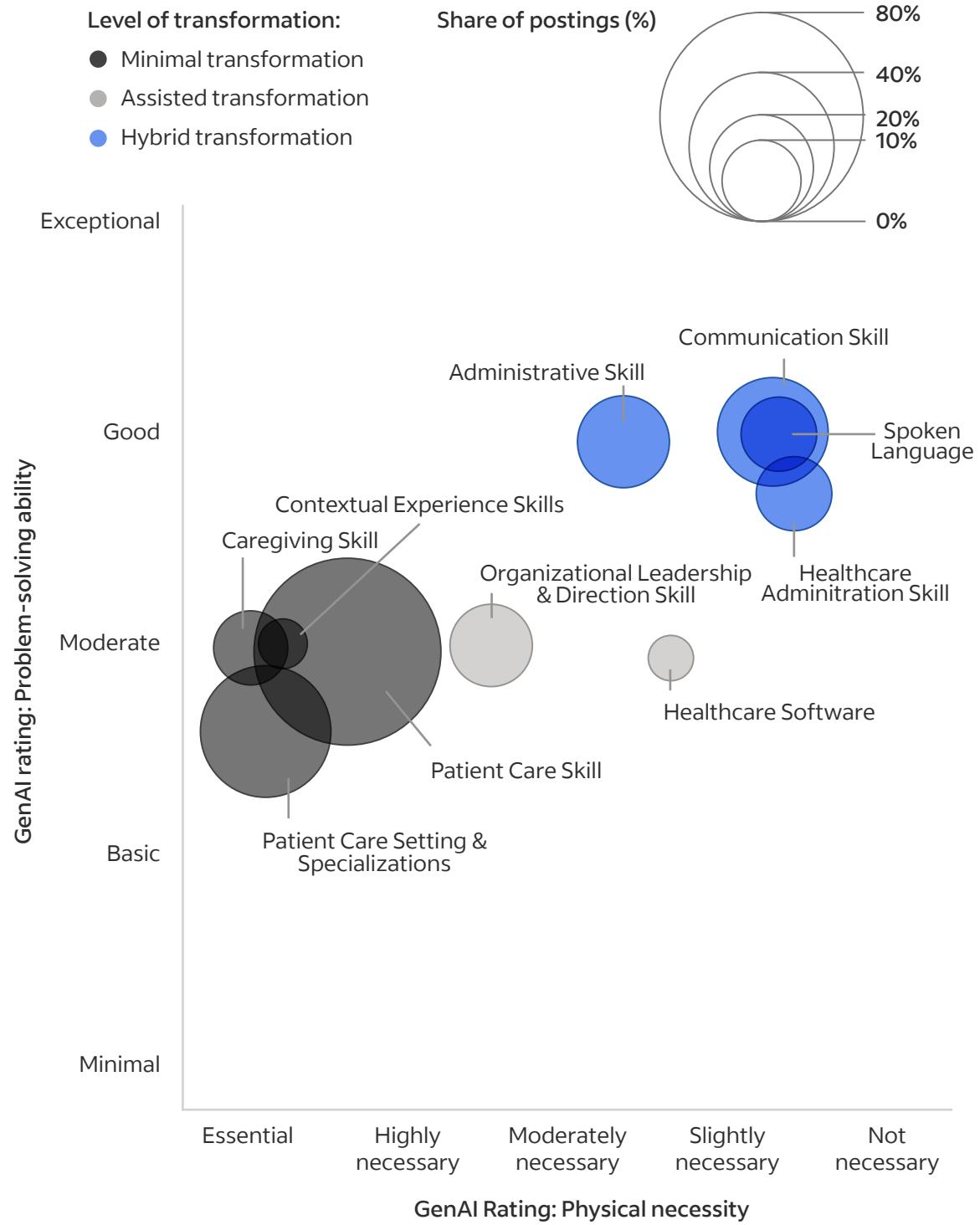
curve. In these areas, GenAI demonstrates strong capabilities in information retrieval, documentation, text processing, and analysis — functions that currently [consume a significant share](#) of caregivers’ time. Drawing directly from our research results, GenAI’s own “thinking” reveals its strengths in these domains. For medical coding, for example, the model explains: “The model can access extensive information about coding systems, rules, and best practices, and can assist with code lookup, documentation review, and error checking.” In nursing administration, GenAI describes its role as providing “theoretical knowledge, policy templates, compliance guidelines, and advice on best practices.”

This split between core and peripheral skills is critical. GenAI does not replace nurses, but has the potential to redistribute cognitive and administrative load, freeing time for patient-facing care. As aging populations drive rising demand and nursing shortages persist, this time-saving effect becomes not just beneficial but necessary. From a labor market and employer standpoint, the objective among healthcare employers likely won’t be to reduce staff, but instead to deploy GenAI where it improves task allocation.

However, GenAI is poised to have a larger impact on some peripheral/non-core nursing skills. Communication skills are mentioned as requirements in almost a quarter (23%) of nursing job postings, and are classified as hybrid transformation

Nursing occupations: Peripheral skills have potential for hybrid transformation

Occupation-level share of US job postings mentioning top 10 GenAI Skill Transformation Index (GSTI) skill families (May 2024-Apr 2025)



Source: Indeed. Only transformation levels of the top 10 skill families are displayed.

GenAI is reshaping software development teams — and potentially shrinking them

At the other end of the spectrum, software development stands at the epicenter of potential GenAI-driven workforce transformation, in large part because technical skills (unlike care skills) are among those most exposed to GenAI models' growing capabilities.

Skills including IT & software programming skills (mentioned in 82% of software

Human software developers are likely to shift from “doing the work” to “directing the work”—overseeing AI outputs, solving edge cases, and ensuring quality control.

development job postings) or programming languages and frameworks (59%) are classified as hybrid transformation skills. In practical terms, GenAI is taking over routine, repeatable, and information-based aspects of coding. As one model's thinking process puts it: *“The model can support this skill by providing explanations, code samples, debugging*

help, and architectural advice.” This could mean that as GenAI takes over routine coding tasks, human developers will shift from “doing the

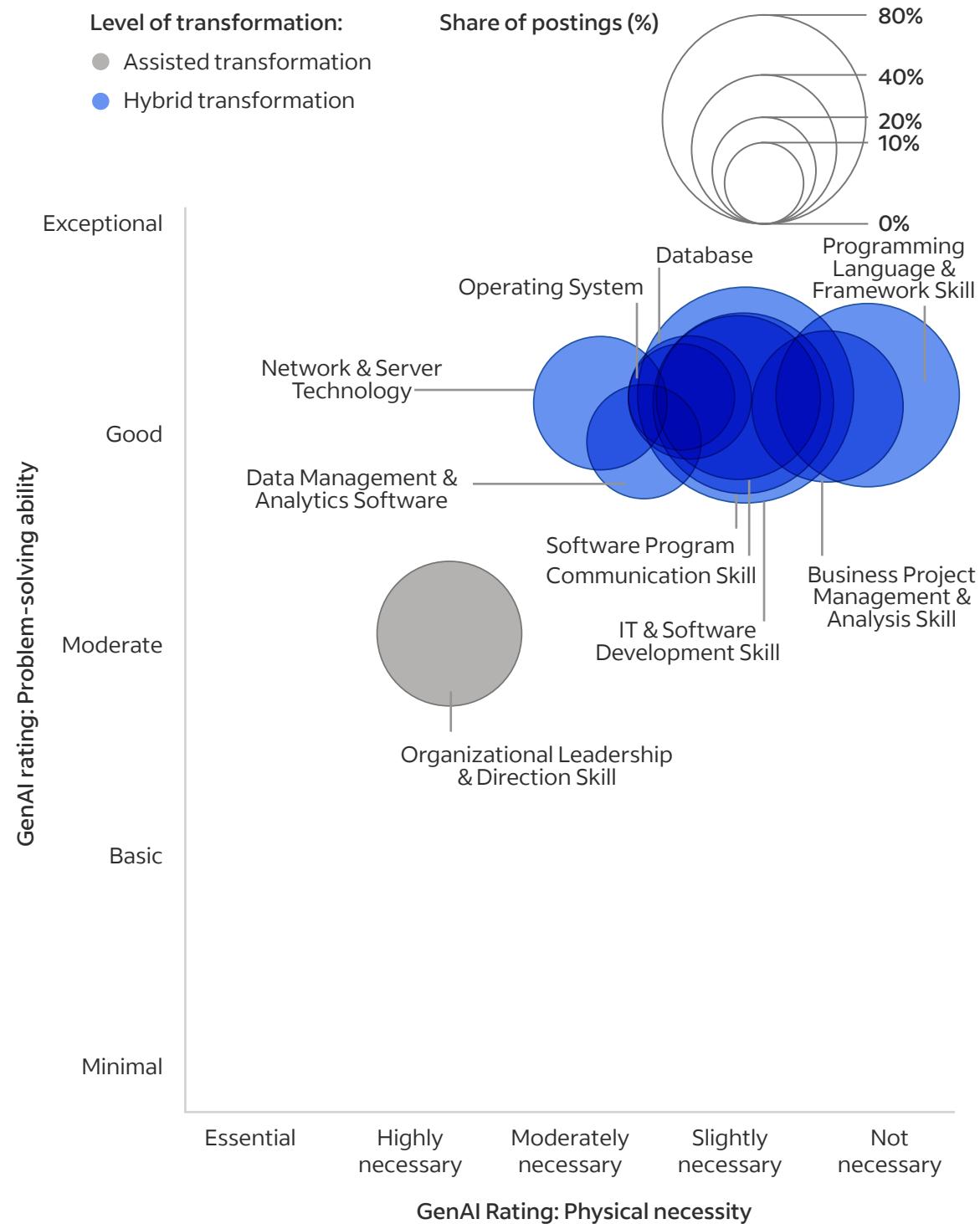
work” to “directing the work”—overseeing AI outputs, solving edge cases, and ensuring quality control. In 9 out of the top 10 skill families most commonly found in software development jobs, GenAI can now potentially lead the process while humans validate, refine, and contextualize outputs.

Even so, there are limitations in this hybrid environment where humans and machines work hand-in-hand. As one of the models' thinking processes told us: *“Successful implementation requires significant human interaction, facilitation skills, organizational change management, and the ability to adapt to unique organizational contexts and politics.”*

This new way of working should be expected to bring noticeable gains in speed and efficiency. However, it also raises unavoidable questions about the future size and shape of software development teams. The reality is that GenAI's productivity lift virtually guarantees that fewer people will be needed to achieve the same results—though more workers may be needed if output is expected to increase, not just stay the same. The early-career software development pipeline—[already under pressure](#)—will need to be reimagined in order to cultivate the higher-level critical thinking and AI-oversight skills that GenAI cannot replicate.

Software development occupations: Hybrid transformation dominates 9 out of the top 10 skill families

Occupation-level share of US job postings mentioning top 10 GenAI Skill Transformation Index (GSTI) skill families (May 2024-Apr 2025)



Source: Indeed. Only transformation levels of the top 10 skill families are displayed.

The middle majority: Half of all jobs poised for moderate transformation

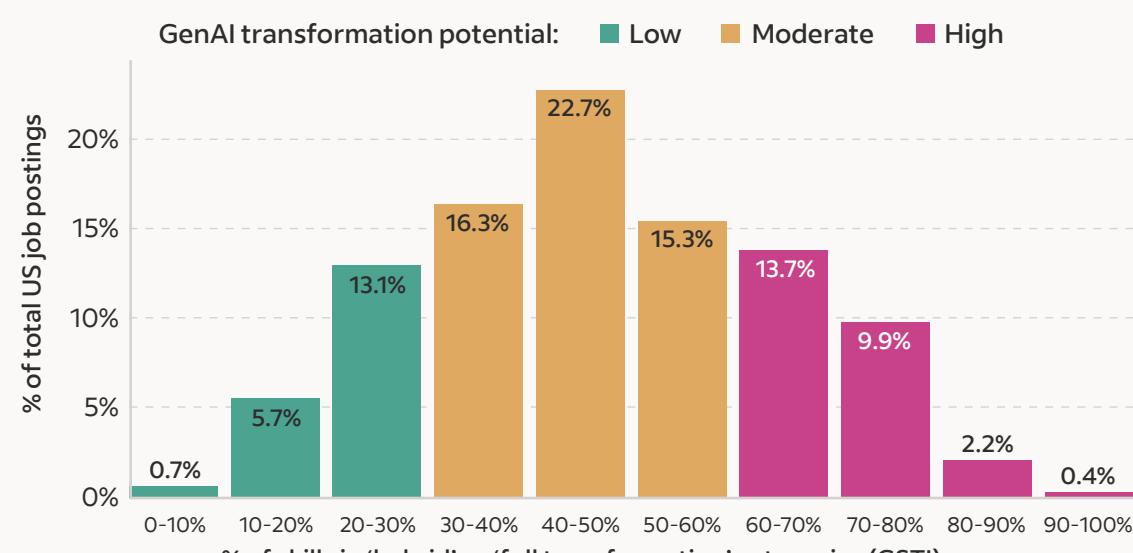
Job postings represent the shape of work as it is evolving, not just as it exists today, and Indeed data allow us to see in real time how demand is shifting for various roles. Occupations most exposed to significant GenAI transformation — those with the highest combined share of skills in the hybrid transformation and full transformation classifications — accounted for about 26% all job postings on Indeed over the past year. On the other end of the spectrum, the occupations with the lowest exposure to significant transformation — and the highest share of skills classified as minimal and assisted transformation — make up 20% of all job postings. That leaves 54% of job postings that fall into the moderate transformation category. These jobs may not be radically redefined overnight, but are positioned to evolve meaningfully under the right conditions as GenAI adoption rises.

What makes this middle segment so important is its potential to tip in either direction. Unlike high- or low-exposure roles, where the trajectory is relatively straightforward, moderate-exposure jobs are more sensitive to decisions made by employers, policymakers, and technology providers. Whether these roles shift toward greater automation or remain primarily human-led will depend on how organizations adopt GenAI tools, how quickly workers are reskilled, and how job design evolves.

These jobs are not niche — they are mainstream. Their share of total postings means that what happens in this segment will shape the experience of GenAI in the workplace for a large portion of the labor force. And because the transformation potential is not fixed but context-dependent, they also offer the greatest opportunity for strategic action.

A quarter of US jobs are highly exposed to GenAI transformation

Based on US job postings on Indeed (May 2024-Apr 2025). Occupations are evaluated using the GenAI Skill Transformation Index (GSTI); chart shows share of job postings with skills in the high-impact categories



Source: Indeed.



Conclusion

It's tempting to think that as GenAI improves, more skills will simply migrate into the "fully transformable" zone. But the overall picture of GenAI is more complex. Our analysis shows that only 1% of skills fall into the "fully transformable" category today, and even those tend to be sub-skills within larger workflows, like parsing XML, classifying text, or performing basic calculations. On their own, these skills may be automatable. But in practice, they exist within broader systems that demand human judgment, contextual understanding, and quality control.

This is where the distinction between assisted transformation and hybrid transformation becomes critical. In assisted transformation, the human remains the lead actor, with GenAI offering support. In hybrid transformation, GenAI handles the bulk of execution, but the human oversees, evaluates, and intervenes when needed. Importantly, work skills themselves won't change, but how they are applied almost certainly will. Less hands-on coding, for instance, but a greater need for humans who can manage complexity, steer the system, and solve the edge cases GenAI can't. This shift helps to raise the bar, not lower it. To oversee GenAI effectively, workers will very likely need to be able to outperform it in reasoning, domain expertise, and context.



What we are witnessing now is not a temporary phase; it's the structural shift that underpins how GenAI is beginning to rewire the DNA of jobs.

Full transformation, then, remains more of a theoretical ceiling than the current norm. Our research shows that not all large language models are equally capable (or equally suitable) for every task. Performance varies by provider and use case, and choosing the right model is as much a strategic decision as a technical or even budgetary one. Infrastructure, process readiness, and risk appetite will all shape how far and fast companies can go.

What we are witnessing now is not a temporary phase; it's the structural shift that underpins how GenAI is beginning to rewire the DNA of jobs. Hybrid transformation is not a bridge to full transformation — it is, for many roles, the destination.

Methodology

This analysis is based on Indeed's skill database, which includes 2,884 distinct skills commonly found in US job postings and a definition of those skills. We evaluated how GenAI may transform humans' performance of these skills using generative artificial intelligence itself.

GenAI's capability was assessed along three core dimensions: its ability to offer theoretical knowledge about the skill, its ability to apply that skill in problem-solving, and the significance of physical presence in effectively carrying out the skill. Each of these dimensions was rated on a 5-point scale, where a score of 1 represented minimal or no capability in that dimension, and a score of 5 signified high proficiency. These scores were then considered by the model in an ultimate determination of the overall likelihood that GenAI could replace human involvement across any of the ~2,900 individual skills, using a similar 5-point rating system.

The results from the problem-solving ability and physical necessity ratings form the foundation of the GenAI Skill Transformation Index (GSTI) — our classification system that

assigns each skill to one of four transformation categories: minimal transformation, assisted transformation, hybrid transformation, or full transformation. These categories were designed to capture the nature and depth of GenAI's potential impact, from limited influence to full task automation.

Unlike previous years, which relied on a single model, our 2025 evaluation adopts a multi-model approach to improve robustness and reflect variance in LLM capabilities. We tested several leading models and observed substantial variation in output quality and consistency. Some models produced unstable or overly confident results across repeated runs. To ensure reliability, we selected the two best-performing models: GPT-4.1 (OpenAI, version 2025-04-14) and Claude Sonnet 4 (Anthropic, 2025).

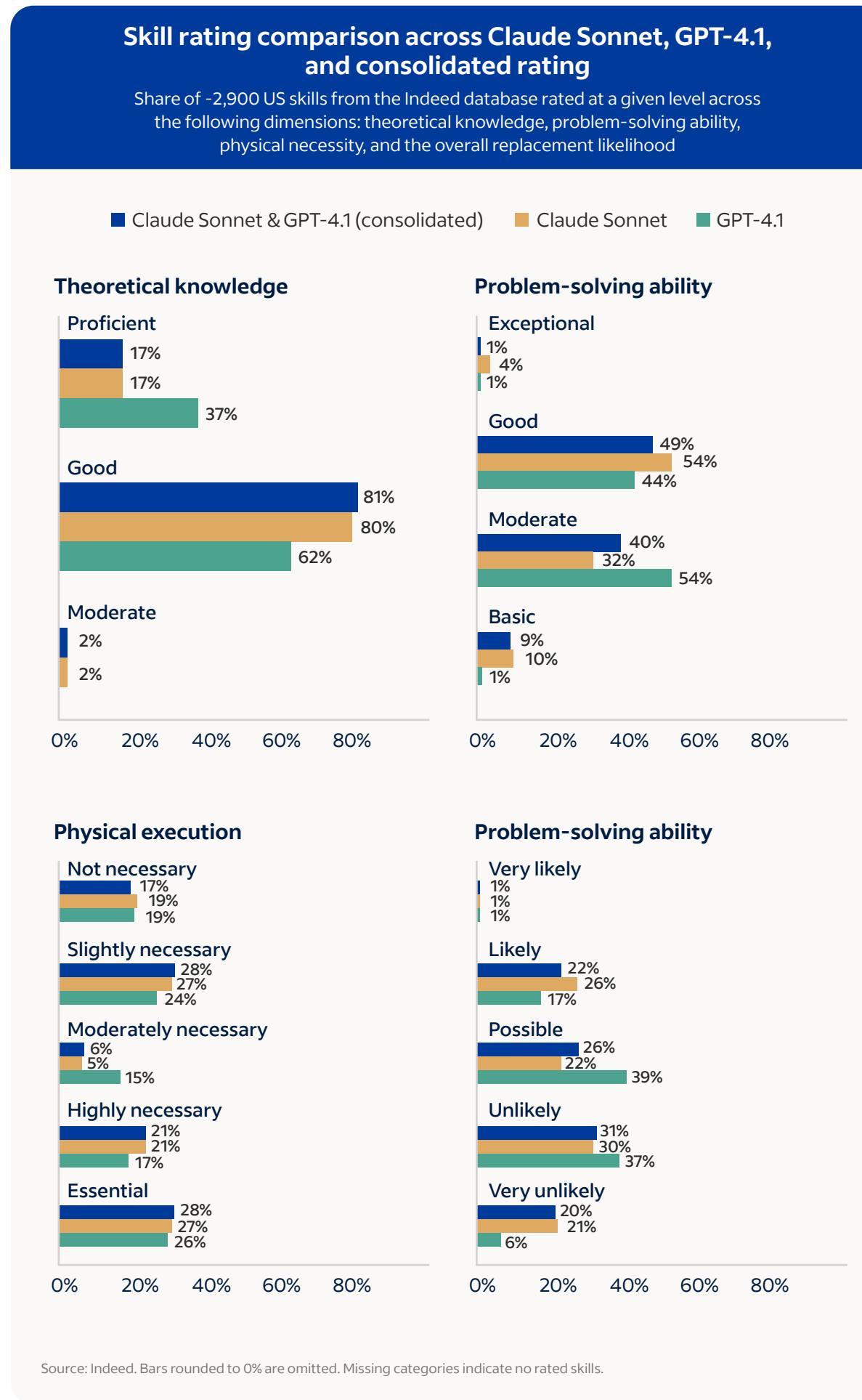
Each model independently rated all 2,884 skills 15 times, using a temperature of 0 for determinism. We consolidated these runs by taking the mode (most frequent score) for each skill. In case of a tie, we applied a conservative rule: selecting the lower value.

To further strengthen robustness, we created a combined rating, pooling all 30 runs (15 per model) into a single distribution. Final scores were again derived using the mode, with the same tie-breaking rule. This combined model forms the basis of the transformation ratings presented in this report.

All outputs were reviewed and validated by human analysts to ensure consistency, neutrality, and plausibility. We found no evidence of sycophantic model behavior or rating distortion in the model versions used.

In comparing the 2024 evaluation (based on GPT-4.0) with our updated 2025 assessment, we observed a consistent upward shift in model-rated capabilities. To ensure this shift reflects real improvements — not definitional changes — we reviewed all skill definitions. Of the 2,884 skills, only 11 had minor updates. Only one (HTML) showed both a definition change and a significant rating shift, and the change of the definition was minimal. We are confident that the broader trend reflects genuine gains in GenAI's applied capability.

We also note that theoretical knowledge is no longer a meaningful differentiator in GenAI's true ability to perform a skill — GenAI performs reliably in this area across nearly all skills. What varies is its problem-solving ability and whether physical execution is required.



Finally, we mapped each skill's transformation rating to more than 53.5 million US job postings published on Indeed between May 2024 and April 2025, allowing for estimates of transformation exposure at the occupational level. Results are segmented using the sector classification framework from [Indeed's Job Posting Index \(JPI\)](#).

In addition to structured ratings, this year's analysis incorporates a new qualitative dimension: a systematic review of the "thinking" processes and reasoning behind the LLMs' evaluations. For selected skill families and occupations — including programming and software development, as well as patient care and healthcare administration in nursing — we examined not only the model's ratings outputs, but also the underlying thinking process by the models themselves. This approach allows us to offer a deeper and more nuanced assessment of how GenAI is reshaping jobs.

This analysis reflects a deliberately conservative estimate of GenAI's labor market potential. We use general-purpose models and apply strict rating consolidation. Domain-specific or fine-tuned models may perform better in specific tasks. Under ideal conditions of GenAI adoption, GenAI infrastructure optimization, GenAI workforce education and more, the GSTI should be interpreted as a baseline index of transformation potential, not an upper bound. But these are all very complicated variables that may unfold in many unforeseen ways, each of which is likely to notably impact GenAI performance in a professional environment.

The Indeed logo is located in the bottom right corner of the slide. It consists of the word "indeed" in a lowercase, sans-serif font. A small, thin curved line or swoosh is positioned above the letter "i".