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THE SKILLS MISMATCH ECONOMY:

INSIGHTS FROM THE WHARTON–ACCENTURE SKILLS INDEX (WASX)

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Executive Summary

The labor market is reorganizing faster than employers, workers and educators can keep pace. Job titles no longer describe how work gets done, and résumés tend to emphasize broad traits such as communication, leadership and problem solving—safe signals that are so common they have little power to differentiate talent. At the same time, AI is accelerating the shift from a role-based labor market to a skills-based economy, sharpening the relevance of the gap between what workers signal and what employers actually reward.

To bring clarity to this transition, Wharton and Accenture developed the Wharton–Accenture Skills Index (WAsX), a recurring, empirical benchmark designed to measure which skills are oversupplied or undersupplied, which skills materially influence wages, how AI is reshaping skill demand over time and how these patterns vary across industries and roles. WAsX gives employers, workers and academic institutions a continuous, evidence-based view of how the talent economy is evolving.

Executive Summary

The Signaling Gap

Oversupply of generalists
Labor market operating in mismatch, workers promote one set of capabilities while employers pay for another.

Why it matters
Workers compete on “safe” signals that no longer differentiate talent. Employers lack, want and reward capabilities that workers under-signal.

WAsX example
Generalist skills appear most frequently in worker profiles, placing them firmly in surplus, while skills such as technical depth, scientific methods, analytical precision, digital execution, and work stewardship are undersupplied.

Skills Have Price Tags

Skill value is role-specific, not universal
A skill correlated to increased pay in one role and/or industry can be correlated to reduced compensation in another.

Why it matters
WAsX challenges the long-standing assumption that some skills are always “high value”, as value is governed by the micro-economy of each role.

WAsX example
Signaling strategic analysis is correlated with validation lead salaries being over $10K lower, while sales representative salaries are nearly $8K higher.

-$10k vs. **+$8k**

AI Is Redistributing Value

AI is reshaping what skills are worth
Gen AI is correlated with reduced demand for routine, structured cognitive work and increased demand for judgment, coordination, compliance, and domain expertise.

Why it matters Instead of automating work away, AI is redistributing economic value across the skills spectrum.

WAsX example
Declining demand for writing and routine analysis; rising demand for regulatory or compliance-related and operations management skills.

Executive Summary

The implication is clear: Employers, workers and universities continue to operate in a role-based world while the economy has moved to a skills-based system. WAsX makes this misalignment visible and gives leaders a way to act on it.

Employers must define the skills that matter most for their human workforce, breaking roles into their underlying tasks and redesign them around human versus AI-augmented capabilities. They also need to align compensation to the real economics of skills by hiring and developing the capabilities that create value while avoiding paying for those they do not need

Employees must redefine their experience not as a series of roles but as a portfolio of specific, high-value skills and target those capabilities to the industries where they are most economically valued.

Educators (or at least business schools) must consider rebalancing curricula away from generalist and toward job-ready, economically scarce skills that strengthen their graduates' employability.

The bottom line is that skills are replacing job titles as the currency of the labor market. And for the first time, with WAsX, we can measure which skills matter, which do not and how quickly the economy is shifting beneath us.

INTRODUCTION

SECTION I: INTRODUCTION

A New Lens on the Labor Market, The Wharton–Accenture Skills Gap Index (WAsX)

The labor market is reorganizing faster than employers, workers and educators can keep pace. Job titles, once reliable proxies for what people do, no longer describe how work actually gets done. And résumés, while still the dominant signaling tool in the workforce, tend to emphasize broad traits such as communication, leadership and problem solving. These are safe, socially reinforced attributes, but they are so universally claimed they have little power to differentiate talent.

At the same time, artificial intelligence (AI) is accelerating a profound shift from a role-based labor market to a skills-based economy. As AI assumes tasks once performed by humans and reshapes how work is structured, the gap between what workers signal and what employers reward becomes increasingly consequential. Machines now handle more capabilities rooted in computation or pattern-based analysis, while human advantage shifts toward judgment, coordination, domain expertise and the execution-level leadership that turns intention into impact.

SECTION I: INTRODUCTION

A New Lens on the Labor Market, The Wharton–Accenture Skills Gap Index (WAsX)

To bring clarity to this transition, and equip employers, workers and universities with actionable insight, Wharton and Accenture developed the **Wharton–Accenture Skills Index (WAsX).** This empirical benchmark measures the real economics of skills by tracking four critical dynamics:

- **Which skills are in oversupply or undersupply,** reflecting the structural imbalance between what workers offer and what employers need
- **Which skills materially influence wages**, revealing where the market assigns monetary value
- **How AI is reshaping skill demand over time**, as tasks migrate between humans and intelligent systems
- **How these patterns vary across industries and roles**, exposing the micro-economies within job families that traditional labor data often obscures

WAsX provides the first continuous, evidence-based view of how the talent economy is evolving in real time. It reveals where the labor market stands today, where it is heading and what employers, employees and educators must do to adapt.

METHODOLOGY

SECTION II: METHODOLOGY

Methodology

Measuring skill supply, demand, and the gap

To quantify the US labor skill market, WAsX combines labor-market data from Lightcast and employment totals from the US Bureau of Labor Statistics's (BLS) Occupational Employment and Wage Statistics (OEWS). Scraped from ~220,000 job posting websites, the labor market data supplier Lightcast produces two data sets used by the WAsX, job postings and people profiles. Since 2022, Lightcast datasets include over 150 million unique U.S. people profiles and more than 100 million unique U.S. job postings.

Lightcast's existing skills taxonomy has 33,000 unique skills and 442 skill subcategories. In order to generate an intermediate set of skill clusters, LLMs (large language models) and k-means clustering were used to group skills within each preexisting subcategory in skill clusters resulting in ~2,000 total skill clusters. For example, the skill cluster 'MS Office 365 Suite' would consist of the more granular skills: Microsoft Word; Microsoft Excel; Microsoft Powerpoint, etc.

The WAsX uses job function roles definitions from the BLS O*NET classification and industry classification from 4-digit North American Industry Classification System (NAICS). The WAsX analyzes the US labor skill market both overall and at the more granular subgroup "role × industry" level.

A key methodological challenge is representativeness. Both job postings and online profiles skew toward white-collar and managerial populations, which means raw Lightcast counts do not directly reflect the true national magnitude of supply and demand. WAsX addresses this by using OEWS totals as an anchor: it scales the role–industry percentage breakdowns observed in Lightcast to match BLS-reported employment totals, refactoring the processed dataset to reflect the national distribution of O*NET roles.

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Methodology

From this calibrated foundation, WAsX computes skill supply and demand within each role–industry combination: the share of workers (supply) and the share of job postings (demand) associated with each of the ~2,000 skill clusters. It then establishes a national baseline for each skill cluster (the overall prevalence of that skill across the workforce), subtracts that baseline from each role–industry subset to remove broad national trends, and finally computes the skill gap as demand minus supply for each cluster at role–industry granularity. The result is a map of where deficits are structural and where surpluses reflect widespread but weakly valued signaling.

Previously, Accenture developed a Generative AI exposure metric for each O*NET task. O*NET roles have associated tasks and the exposure metric was applied from task to roles. Based on that previous work, each skill cluster was assigned a Generative AI exposure measure and the set of clusters were divided into Generative AI exposure terciles. Using the job posting data (demand) back to 2022 (OpenAI released ChatGPT demo Nov. 2022), the change in skill cluster demand over time was explored by Generative AI exposure.

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Methodology

Putting a dollar value on skills

In a well functioning marketplace, imbalances show up in prices. WAsX treats jobs as bundles of skill clusters and estimates the monetary value—positive or negative—associated with possessing, or not, each skill cluster. Using the Lightcast job posting dataset (where roughly 80% of postings include both skills and salary information), each posting's required skills are translated into the same ~2,000 skill-clusters. A machine-learning model, tested across Gradient Boosting approaches including LightGBM (LGBM) and XGBoost (XGB), predicts job post salaries using a simple feature set: a 0/1 indicator for whether each skill cluster appears in the posting. LGBM was observed to perform best across industries.

To turn model predictions into interpretable skill cluster prices, WAsX uses SHAP values, which attribute how much each skill cluster contributed to a particular salary prediction. Aggregated, the SHAP contributions yield an estimated annual salary dollar value for each skill cluster, both overall and at the role–industry level.

FINDINGS

SECTION III: FINDINGS

The Skills Mismatch: How Worker Signals Diverge from Employer Needs

WAsX reveals a striking and persistent disconnect between what workers choose to signal and what employers truly need to get work done. Across industries, workers overwhelmingly highlight broad, generalist traits: leadership, communication, teamwork, problem-solving. These signals feel safe and familiar, yet they appear so frequently in résumés and online profiles that they offer little power to differentiate talent. In the WAsX surplus–deficit map, these broad skills show up as the most oversupplied in the labor market (Figure 1).

Employers reward a very different set of capabilities. WAsX shows deep and consistent deficits in the specialized, execution-oriented skills that determine whether work moves from concept to completion. These include technical depth, scientific fluency, digital and analytical precision, operational expertise and role-level leadership—the kind that shapes decisions in real time, often within highly technical environments. Employers consistently demand these capabilities, yet workers tend to under-signal them or, in many cases, lack them altogether.

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What Skills Are Worth: WAsX Findings on Skill-based Wage Premiums

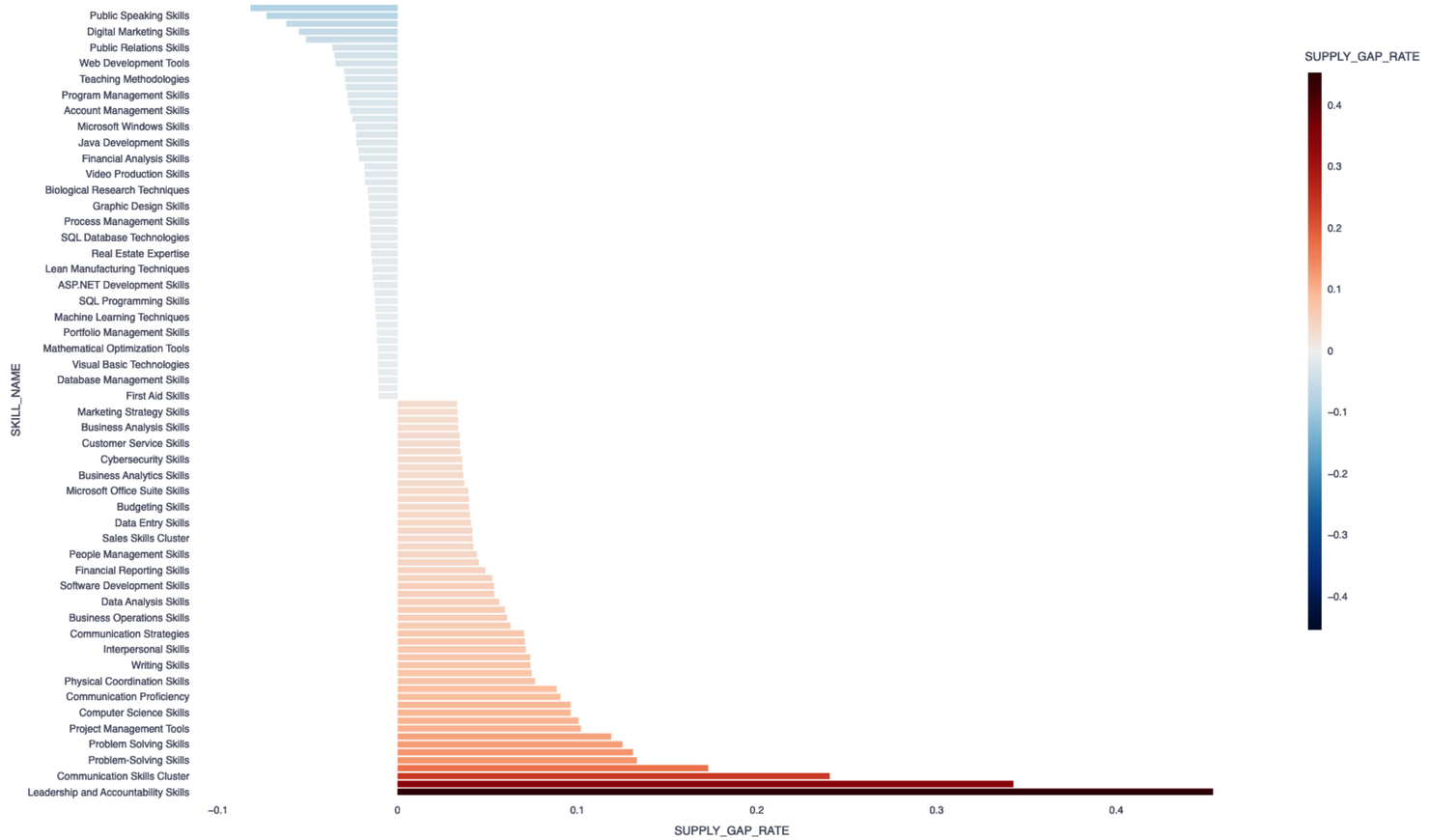

FIGURE 1: CROSS INDUSTRY SKILLS GAP

This chart compares the supply of skills (what workers list on their profiles) with the demand for skills (what employers include in job postings). Blue bars represent skill deficits: the skill appears *more often in job postings than in worker profiles* (undersupply). Red bars represent skill surpluses: the skill appears *more often in worker profiles than in job postings* (oversupply).

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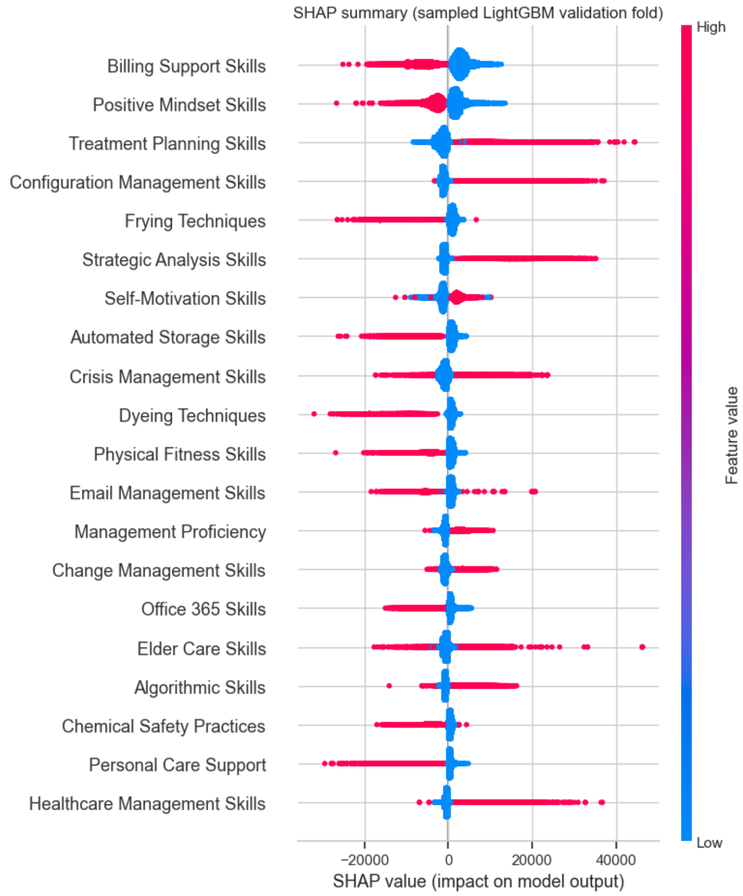

	RED	BLUE
+	Skill increases salary	Skill absence increases salary
-	Skill decreases salary	Skill absence decreases salary

The disconnect in signaling carries real economic consequences. Across industries, WAsX reveals sharp differences in the market value assigned to various skill types. Specialized, technical and management-oriented capabilities tend to correspond with higher salaries, especially when they demonstrate depth, complexity, or responsibility tied to the work.

By contrast, task-based or routine operational skills—those that are easily standardized, widely available, or replicable through automation—tend to correspond with lower salaries. These patterns reflect how employers implicitly value and price different types of contributions: They reward skills that are scarce, consequential, or central to decision-making, and they discount skills that are abundant or easily substituted (Figure 2).

FIGURE 2: HOW SKILLS IMPACT SALARY

The SHAP analysis shows how different skill clusters influence predicted salaries in job postings, holding all other factors constant. Red points represent job postings where the skill was present, and their position on the horizontal axis indicates whether the skill pushes salaries higher (right side) or lower (left side). Several skill clusters show a consistent positive impact on salaries when they appear in job postings. These include *Treatment Planning, Configuration Management and Healthcare Management*. In contrast, several skill clusters are associated with a negative impact on salaries. These include *Frying Techniques and Dyeing Techniques*, which appear predominantly on the left side of the distribution.

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What Skills Are Worth: WAsX Findings on Skill-based Wage Premiums

The Life Sciences sector offers a particularly vivid example to see how these dynamics play out in practice. It shows how WAsX distinguishes between surplus and deficit skills, quantifies wage drivers and exposes how the economics of skill value diverge dramatically at the role level, even within the same field. In Life Sciences, the gap between what workers signal and what employers need stands out sharply, and the variation in value assigned to specific skills reveals how the labor market is reorganizing around depth, precision and execution. Life Sciences professionals overwhelmingly emphasize broad traits such as communication, accountability and high-level leadership.

In the WAsX surplus–deficit map, these generalist signals appear in substantial surplus: workers frequently list them, yet employers rarely treat them as meaningful differentiators. Employers instead struggle to find the specialized capabilities that advance scientific work. These include scientific methods and lab techniques, analytical chemistry and data-rich experimentation and environmental and hazardous materials management. They also require execution-level leadership to guide teams at the bench and across cross-functional workflows. These shortages form bottlenecks that slow research productivity and scale-up operations (Figure 3).

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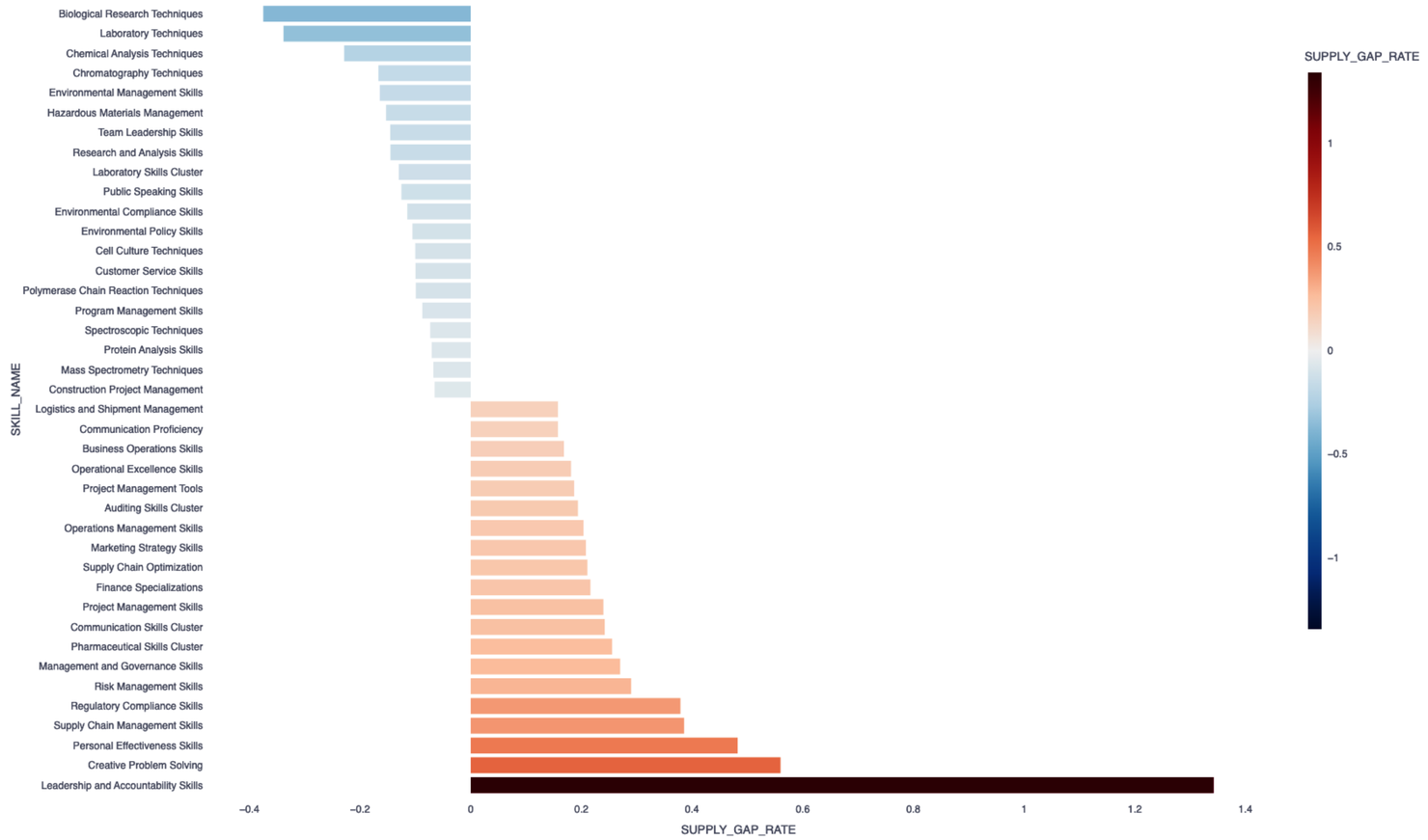

FIGURE 3: LIFE SCIENCES INDUSTRY SKILLS GAP

This chart compares the supply of skills (what workers list on their profiles) with the demand for skills (what employers include in job postings). Blue bars represent skill deficits: the skill appears *more often in job postings than in worker profiles* (undersupply). Red bars represent skill surpluses: the skill appears *more often in worker profiles than in job postings* (oversupply).

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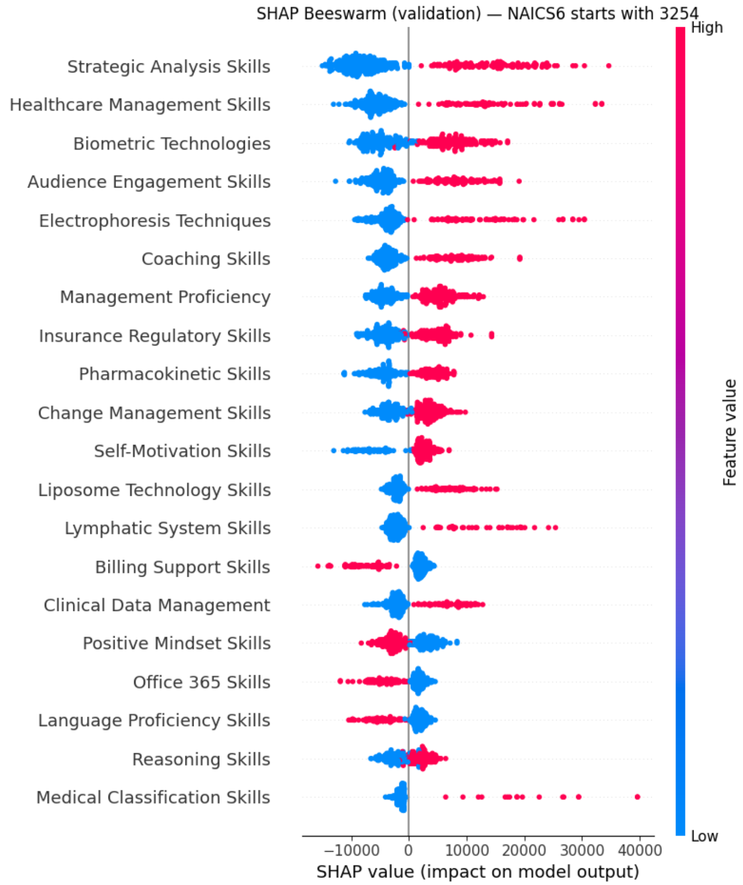

	RED	BLUE
+	Skill increases salary	Skill absence increases salary
-	Skill decreases salary	Skill absence decreases salary

WAsX also quantifies how the market prices skills across the industry. Technical scientific depth and strategic or management-oriented skills command a clear wage premium. Managerial skills such as strategic analysis and healthcare management, and technical scientific skills such as biometric technologies, electrophoresis and advanced lab procedures correspond with higher predicted salaries, reflecting their scarcity and impact. Meanwhile, administrative or widely available productivity skills (billing support, basic office tools, or language proficiency) tend to lower predicted wages, underscoring their abundance and susceptibility to automation (Figure 4).

FIGURE 4: HOW SKILLS INFLUENCE SALARY IN LIFE SCIENCES ROLES

The SHAP analysis shows how different skill clusters influence predicted salaries in job postings, holding all other factors constant. Red points represent job postings where the skill was present, and their position on the horizontal axis indicates whether the skill pushes salaries higher (right side) or lower (left side). Blue points represent job postings where the skill was absent, and their position on the horizontal axis indicates whether the absence of the skill pushes salaries higher (right side) or lower (left side).

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What Skills Are Worth: WAsX Findings on Skill-based Wage Premiums

The picture becomes even more revealing when WAsX shifts from the industry level to specific roles, where the value of a skill becomes highly contextual.

Consider the Validation Lead, a technical execution role central to pharmaceutical preparation. WAsX quantifies the exact wage impact of each skill associated with this position. Technical and domain-specific capabilities such as catalytic reactor techniques, liposome technologies and enterprise coaching show large positive contributions, reflecting the high premium placed on specialized scientific and engineering competencies in validation work. These roles rely heavily on deep process knowledge, method development and system-level understanding: skills that remain scarce and command higher wages. On the other side, several strategic and analytical skills including strategic analysis, regulatory or healthcare management knowledge and broader market-facing skills tend to pull the salary prediction downward. This underscores that, in highly technical engineering roles, domain depth is more economically valued than general strategic capability.

The pattern shifts when we move to the Hospital Specialty Sales Representative role. Here, the skills that increase salary are more aligned with commercial execution, such as crisis management, specification management, concurrent engineering understanding and pharmacokinetics knowledge. These skills reflect the hybrid nature of modern specialty sales roles, which often require a mix of technical and scientific fluency and customer-facing problem-solving. In contrast, salary-decreasing skills for sales roles again include more strategic and administrative capabilities (like strategic analysis, digital payment solutions, billing support and routine productivity tools) which suggests that employers do not differentiate candidates based on these skills and may even associate them with lower-value responsibilities (Figure 5).

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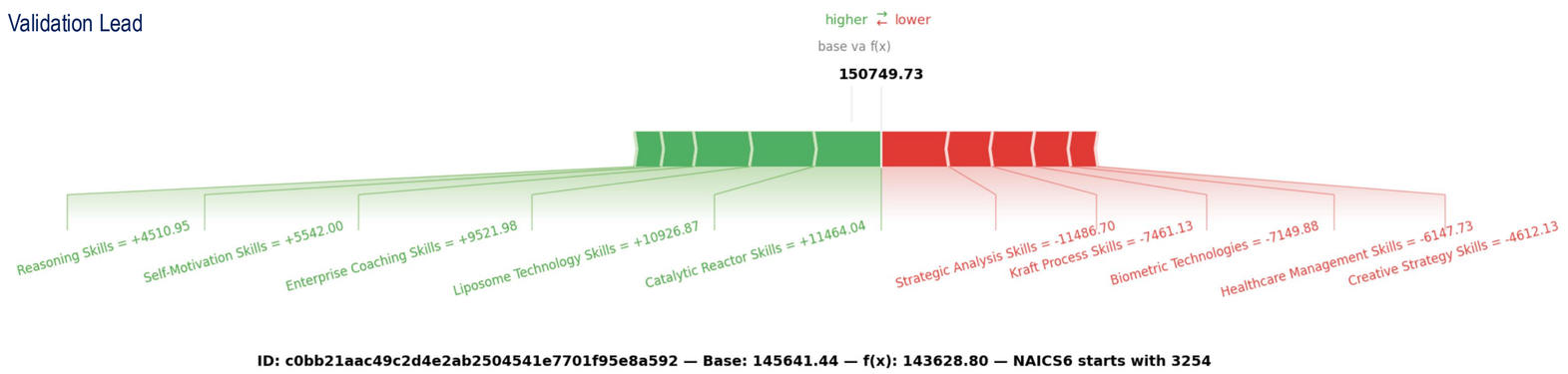
What Skills Are Worth: WAsX Findings on Skill-based Wage Premiums



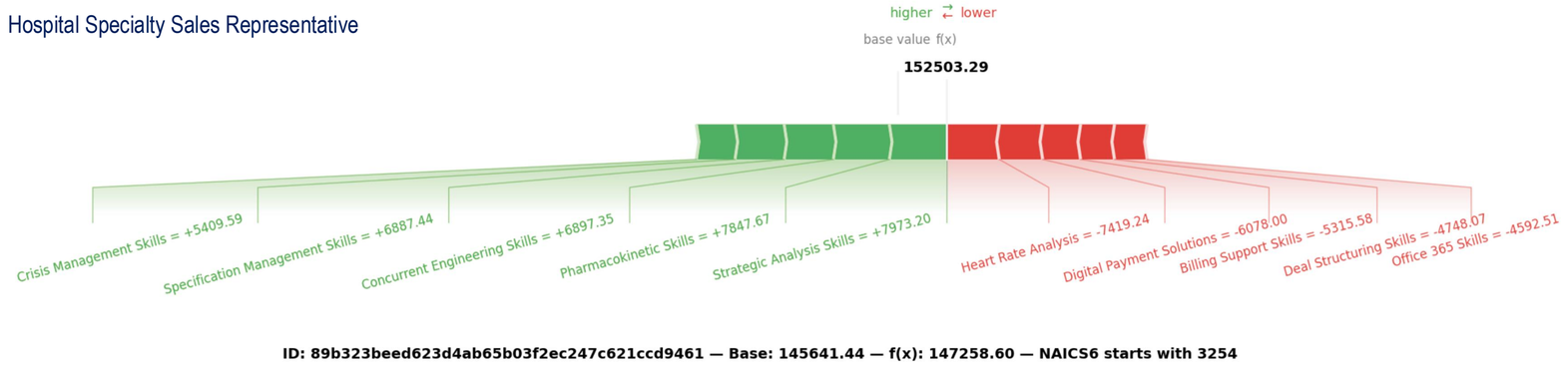


FIGURE 5: SALARY DRIVERS ACROSS LIFE SCIENCES ROLES

Each bar represents a skill cluster and its contribution to the predicted salary for the role. Green bars show skills that increase the model's salary prediction. Red bars show skills that decrease the model's salary prediction. The length of each bar indicates the size of the effect, and labels show the approximate dollar impact.

SECTION III: FINDINGS

AI's Talent Reset: The New Economics of Skill Demand

The disconnect between what workers signal, what employers need and what the market rewards becomes even more consequential as advanced AI reshapes how work gets done. The same forces that create skill surpluses and deficits today also influence how rapidly AI reweights the talent landscape instead of merely automating tasks. WAsX tracks this shift by measuring changes in demand for different skill clusters over time, revealing clear patterns in how AI is reshaping the labor market.

Demand is falling most sharply in skills tied to routine content creation and structured, repeatable cognitive work. Writing, routine analysis and segments of software development show early declines as generative AI tools take on these tasks quickly and at scale. These patterns signal the beginning of a broader recalibration in how organizations source and deploy cognitive labor. At the same time, WAsX highlights steady or rising demand for capabilities rooted in judgment, coordination, compliance and domain-specific execution. Regulatory and compliance-related skills continue to gain traction. Operations management skills that require contextual decision-making and real-time coordination remain resilient. Relationship-driven capabilities such as sales and communication hold strong (Figure 6).

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AI's Talent Reset: The New Economics of Skill Demand

Together, the early signals point to a clear shift: AI is redistributing economic value across the skills spectrum. As certain categories of work become more easily augmented or automated, the market is placing greater emphasis on the capabilities that sit beyond AI's immediate reach and are grounded in expert judgment, contextual understanding and hands-on execution. WAsX provides a way to measure these changes as they unfold, helping employers, workers and educators anticipate where demand—and scarcity—is likely to grow and guiding the following actions each group must take to navigate this shift.

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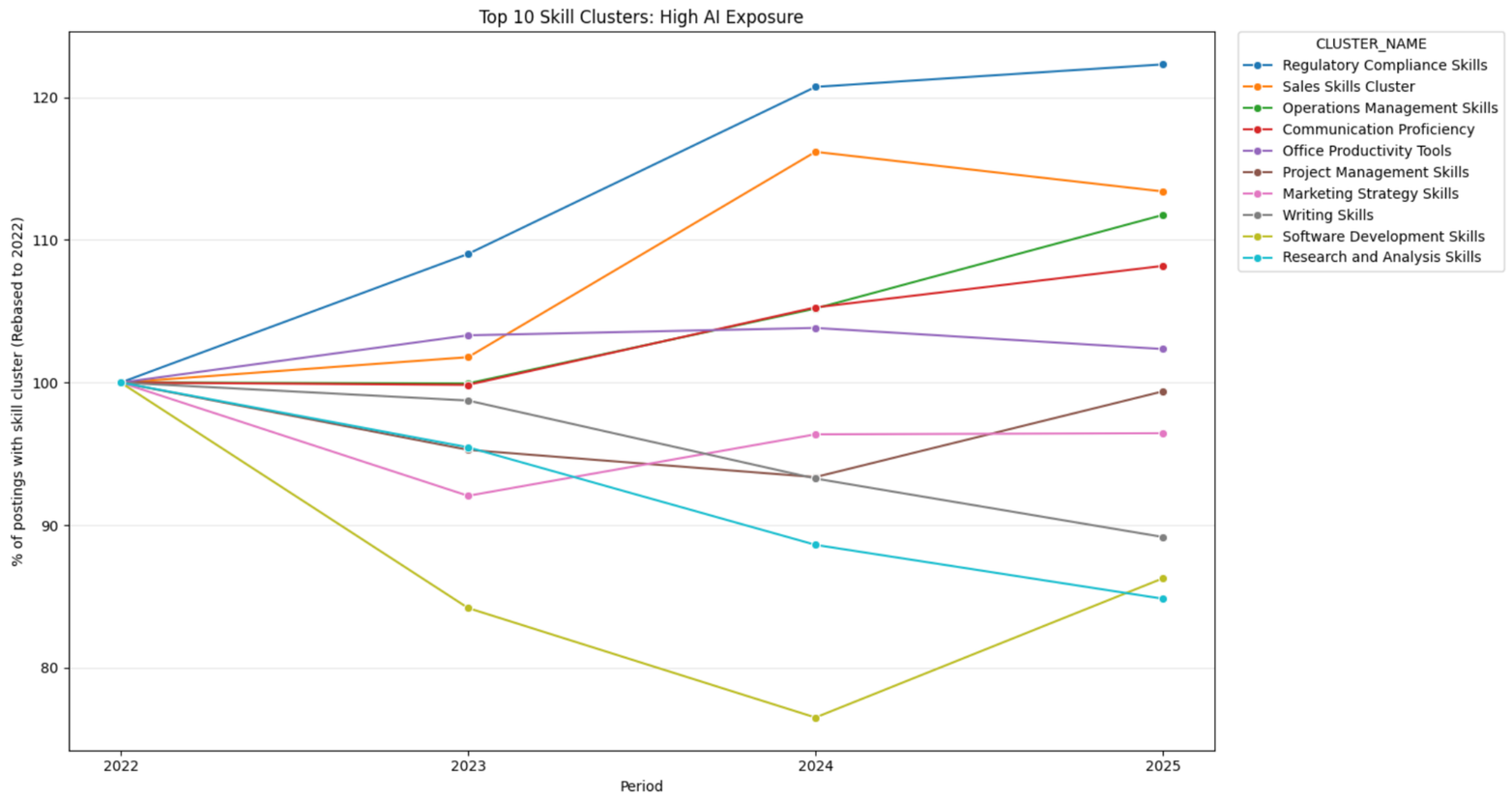
AI's Talent Reset: The New Economics of Skill Demand



AI is reshaping what skills are worth
Declining demand for writing and routine analysis; rising demand for regulatory or compliance-related and operations management skills.

FIGURE 6: DEMAND TRENDS FOR HIGH AI-EXPOSURE SKILLS OVER TIME

This figure shows employer demand trends for skill clusters that have high exposure to AI automation or augmentation. Each line represents a high-AI-exposed skill, with values indexed over time to illustrate relative growth or decline.

ACTION STEPS

SECTION IV: ACTION STEPS

How Employers Should Respond: Build Skill Architecture, Not Job Architecture

WAsX points to a distinct set of actions for employers. Organizations need to understand where their real skill gaps are, rethink how work gets done in an AI-enabled environment, align pay with the skills that drive value and define roles based on the capabilities that matter most.

Diagnose skill surpluses and deficits at both the team and enterprise level

Employers face a gap between the capabilities they need and the signals they see in the market. WAsX gives leaders a way to identify these gaps and respond decisively. It reveals where teams are saturated with broad traits and where they lack the specialized, execution-oriented skills that drive performance. Leaders should use this diagnostic view to target hiring more precisely, direct reskilling investments where they matter most and strengthen internal mobility by matching people to roles based on the capabilities they actually have.

Redesign roles as advanced AI reshapes work

As advanced AI reshapes how work is done, employers also need to break roles into their underlying tasks and capabilities. This decomposition clarifies which tasks agents or robots can assume, and which require human judgment, coordination or domain expertise. When leaders examine work at this level, they gain the flexibility to redesign jobs, allocate tasks more efficiently and plan their workforce around how work truly gets done—rather than around static job titles.

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How Employers Should Respond: Build Skill Architecture, Not Job Architecture

Align compensation systems with role-level skill economics

Compensation systems should follow the same logic. WAsX shows that certain skills carry real wage premiums, while others have little economic impact. Employers should align pay with these role-level skill economics, rewarding the capabilities that drive performance and avoiding premiums for skills that are abundant or tangential. This approach builds a more rational, performance-centered compensation model.

Rebuild job descriptions around specific skill profiles rather than generic traits

Clear skill profiles further strengthen hiring and workforce decisions. When organizations replace broad, nonspecific requirements with precise capability expectations, they improve the accuracy of job descriptions and attract candidates with demonstrable, relevant strengths. This clarity helps teams fill critical roles faster and reduces mismatches between role demands and candidate backgrounds.

Across all these actions, the direction is consistent: Employers who redesign their workforce practices away from titles or broad attributes to measurable, role-relevant skills will be better equipped to compete in a labor market where capabilities increasingly determine value.

SECTION IV: ACTION STEPS

How Employees Can Compete: Build A Skill Portfolio, Not A Resume

WAsX provides employees with a clearer view of where economic value is shifting and which capabilities employers reward most. Individuals can use these insights to focus on higher-value skills, use AI to strengthen technical depth and signal their capabilities with greater precision in a labor market that increasingly prizes demonstrable expertise.

Reframe a career as a portfolio of high-value skills

Claimed generalist abilities like communication or leadership appear in surplus across the labor market and do little to distinguish candidates. Workers who emphasize concrete, role-relevant capabilities (like technical depth, analytical fluency and execution-level skills) signal readiness more effectively and can navigate across industries with greater agility.

Use advanced AI to more quickly acquire technical depth

The skills that show strong wage signals tend to be specialized and execution-focused. Advanced AI now gives individuals a powerful way to build these capabilities by generating practice scenarios, explaining technical concepts, simulating tasks and accelerating mastery of tools or methods. Instead of competing with AI on routine tasks, individuals can use it to strengthen their skills and advance into higher-value work. This model of continuous co-learning enables people and AI to evolve together in the flow of work.

SECTION IV: ACTION STEPS

How Employees Can Compete: Build A Skill Portfolio, Not A Resume

Let WAsX guide which skills to develop and how to signal them

The index makes clear which capabilities are rising in value and which are becoming oversupplied. Workers can use these insights to prioritize upskilling choices and describe their capabilities with greater precision. For example, naming specific techniques, tools, or achievements rather than relying on broad descriptors.

Together, these actions point to a simple premise: Individuals who adopt a skills-first mindset and use AI to deepen their technical and role-relevant capabilities will be best positioned to thrive in a labor market increasingly shaped by the economics of skills.

SECTION IV: ACTION STEPS

How Educators Can Lead: Teach to the Skills Economy

WAsX gives academic institutions a clearer view of the capabilities the labor market consistently rewards and where talent shortages are most acute. Educators can use these insights to strengthen technical and applied learning, integrate AI into skill development and help students communicate their capabilities with greater specificity as they transition into the workforce.

Shift curricula toward specialized, job-ready capabilities

WAsX underscores the importance of aligning education with the capabilities employers value most. The data highlights persistent shortages in technical, scientific, analytical and execution-oriented skills as areas that determine whether graduates can contribute meaningfully from day one. Universities can address these gaps by shifting more curriculum toward specialized, job-ready capabilities and by expanding labs, project-based learning and experiential formats that build depth rather than relying predominantly on generalist preparation.

Use advanced AI as a core tool for developing technical proficiency

As advanced AI becomes part of everyday professional practice, educators also need to embed it directly into how students learn technical skills. Advanced AI-supported simulations, practice environments and feedback tools can accelerate mastery, helping students build the proficiency required in workflows where intelligent systems regularly augment human capability. Treating advanced AI as an accelerator of technical depth prepares learners for environments where speed, precision and adaptation matter.

SECTION IV: ACTION STEPS

How Educators Can Lead: Teach to the Skills Economy

Teach students to signal skills with greater specificity

WAsX also highlights a signaling gap: workers often fail to communicate the capabilities employers value most. Academic programs can help close this gap by teaching students to describe their skills with clarity and relevance—emphasizing specific techniques, tools, methods and applied experiences rather than broad traits. This improves match quality in the labor market and strengthens the return on education.

Taken together, these actions position academic institutions to prepare graduates for a labor market where economic value flows to demonstrable, role-relevant skills. Programs that rebalance toward scarce capabilities, harness AI to accelerate technical learning and equip students to communicate their expertise with precision will play a critical role in shaping a workforce ready for a skills-driven economy.

CONCLUSION

SECTION V: CONCLUSION

Navigating the New Economics of Skills in an Evolving Market

The WAsX findings show a labor market undergoing a profound structural shift. AI is accelerating the move from a role-based economy to a skills-based one, exposing clear disconnects between how workers present their capabilities and how employers assess labor market value.

WAsX first highlights a fundamental mismatch: Workers overwhelmingly signal generalist traits such as communication, leadership and problem solving, yet these traits appear in surplus. Employers, meanwhile, consistently seek specialized, technical and execution-oriented capabilities that remain undersupplied.

WAsX also gives employers a more systematic way to identify and prioritize the skills that matter. It shows where organizations face scarcity, where oversupply exists and how wage signals differ across roles. This visibility supports more deliberate decisions about role design, hiring, workforce development and the capabilities to emphasize or deprioritize as AI reshapes tasks.

For individuals, the findings reinforce the value of viewing a career as a portfolio of skills rather than a sequence of job titles. WAsX clarifies which capabilities are most valued in specific industries and roles. Workers who build those skills and use AI to accelerate technical depth can better align their development with emerging labor market trends.

AI is already influencing skill demand, and WAsX will continue to track how that demand evolves. Declining demand for routine or easily automated skills, paired with rising emphasis on judgment, coordination, compliance and domain expertise, signals a measurable shift in the skill mix employers reward. Regular WAsX updates will provide a longitudinal view of how these patterns take shape.


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