AI and the Future of Talent
Four Scenarios

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Introduction: The AI Leverage Shock

AI as the Ultimate Leverage Machine

- AI is rapidly transforming knowledge work by scaling human judgment and cognitive work like never before.

A Tale of Two Extremes

- **Top of the distribution:** Small advantages in expert judgment, scaled by AI, create enormous value.
- **Bottom of the distribution:** Growing concerns about the disappearance of entry-level coder roles.

Central Question

How will AI reshape the demand for talent across the skill spectrum?

Here's What Mark Zuckerberg Is Offering Top AI Talent

The Meta CEO is leading a hiring blitz, offering top talent at OpenAI eye-watering pay packages and endless access to cutting-edge chips.

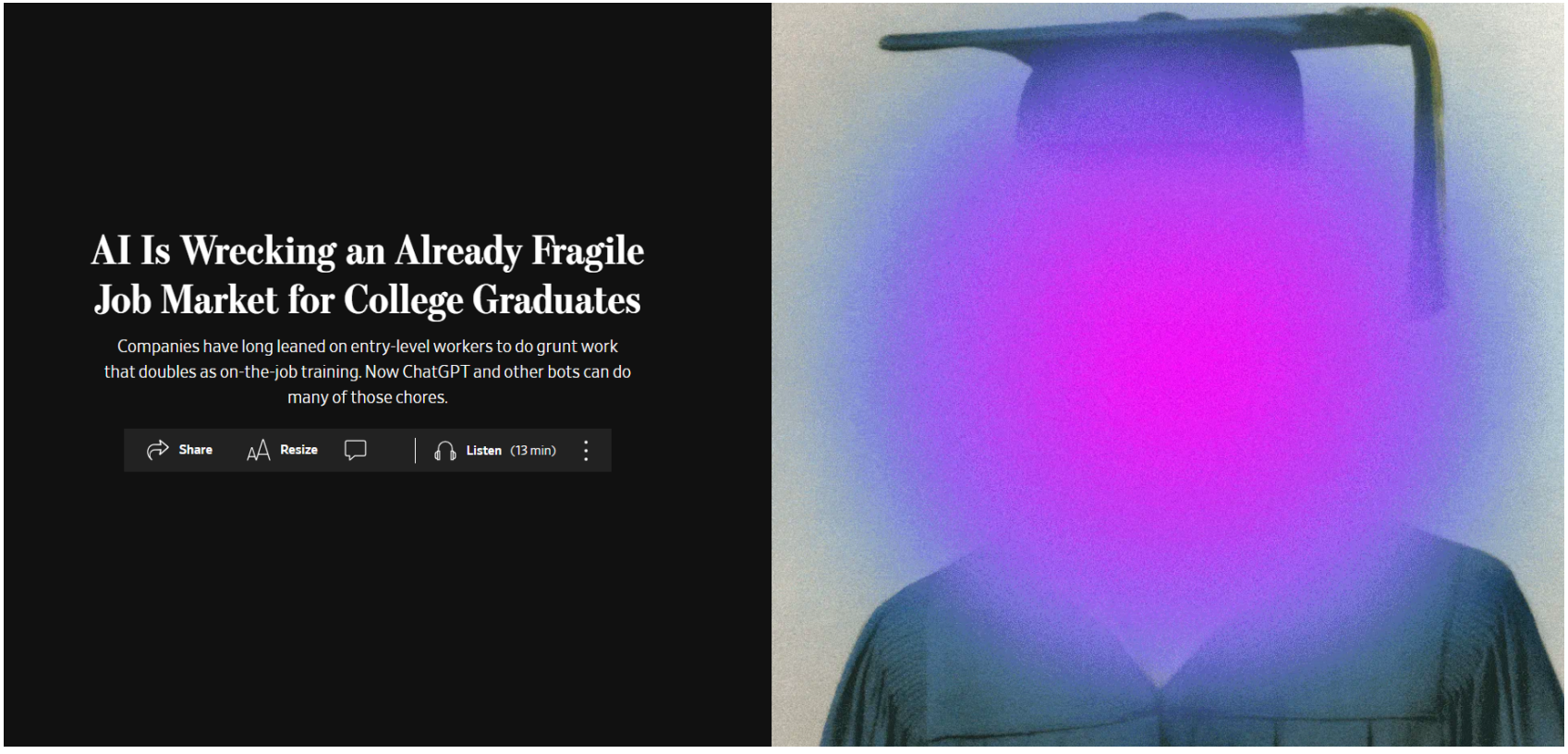
PHOTO-ILLUSTRATION: WIRED STAFF; CRAIG T. FRUCHTMAN/GETTY IMAGES

AS MARK ZUCKERBERG staffs up Meta's new superintelligence lab, he's offered top tier research talent pay packages of up to $300 million over four years, with more than $100 million in total compensation for the first year, WIRED has learned.

MOST POPULAR

THE BIG STORY

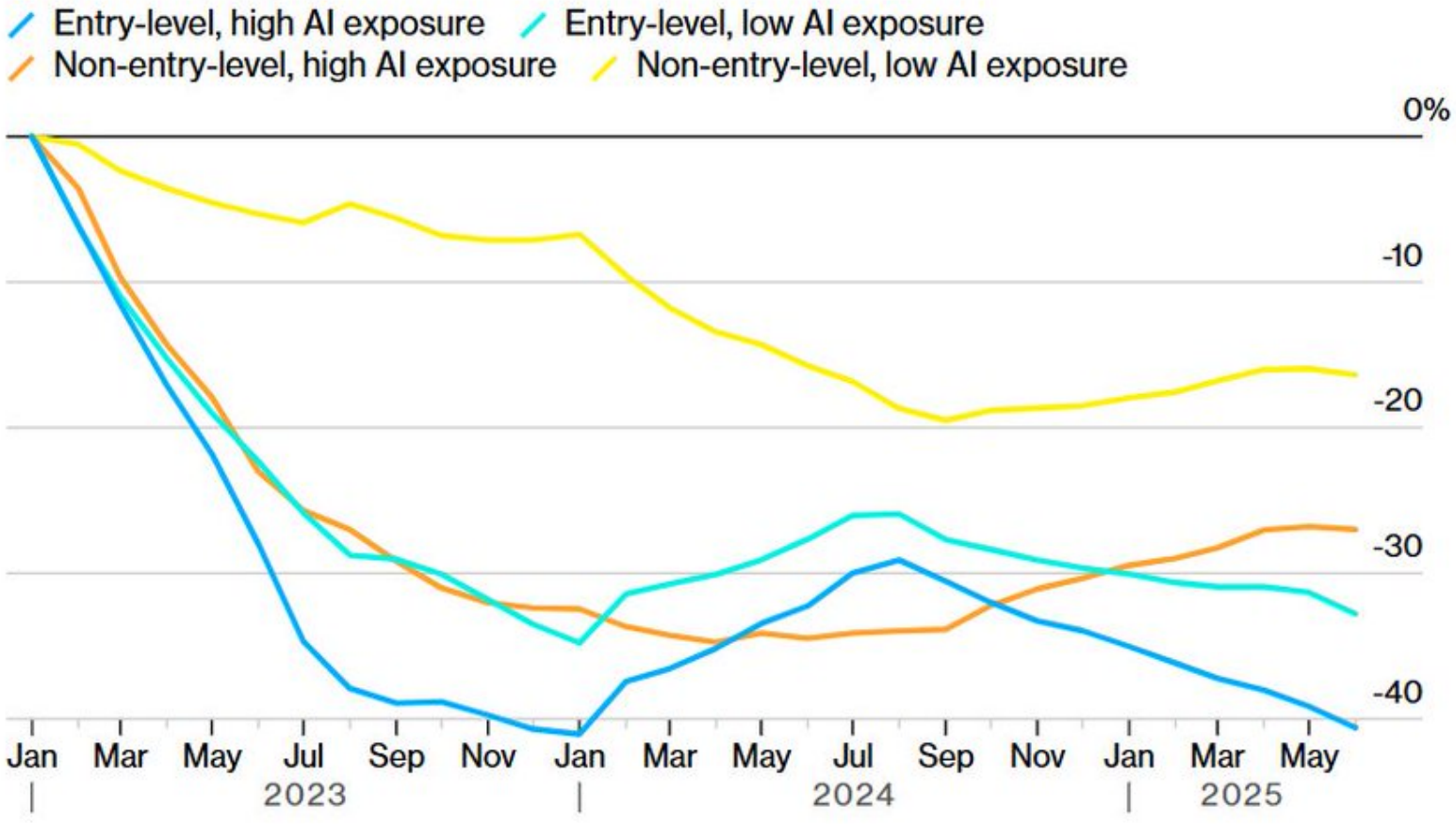
Wired Jul 1, 2025



WSJ July 29, 2025

Fewer Opportunities

Change in trailing 12-month average of new US job postings since January 2023



Source: Revelio Labs
Note: Sample covers job postings from the websites of roughly 10,000 companies.

Bloomberg July 30, 2025

Not so fast! Literature finds two contradictory effects

How does AI affect the bottom?

It depends.

- **Finding 1: AI Displaces Entry-Level Workers.**
  - Broad payroll data suggests significant job losses for young workers in AI-exposed fields.(Brynjolfsson, Chandar, and Chen, 2025a)

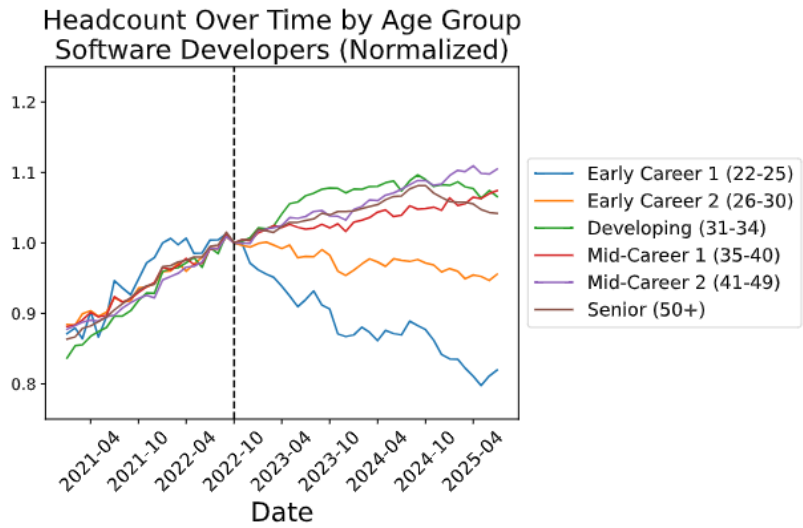
- **Finding 2: AI Significantly Boosts Novice Productivity.**
  - Firm-level studies show that AI assistants disproportionately help the least experienced workers.(Brynjolfsson, Li, and Raymond, 2025b)

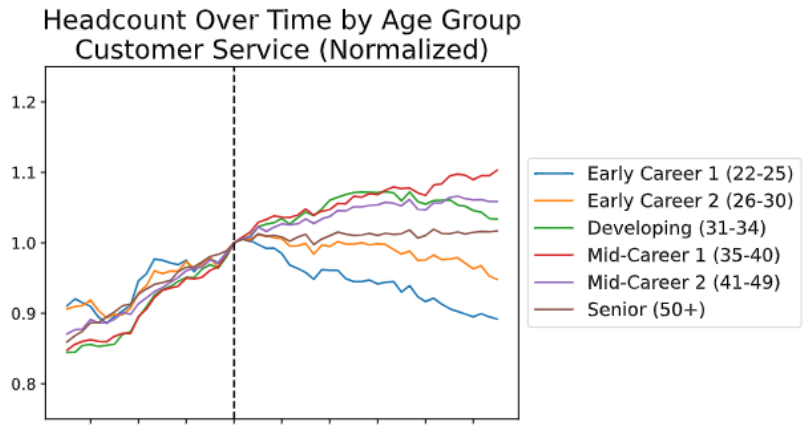
How can AI simultaneously be the most helpful tool for novices, yet also be the technology eliminating their jobs?

Empirical Finding 1: AI Hurts Entry-Level Jobs

"Canaries in the Coal Mine"

High-Frequency Payroll Data: Brynjolfsson, Chandar, and Chen (2025a) largest US payroll provider through July 2025 [also Lichtinger and Maasoum (2025) and Berger et al. (2024) although mixed evidence, de Souza (2025), in Brazil].





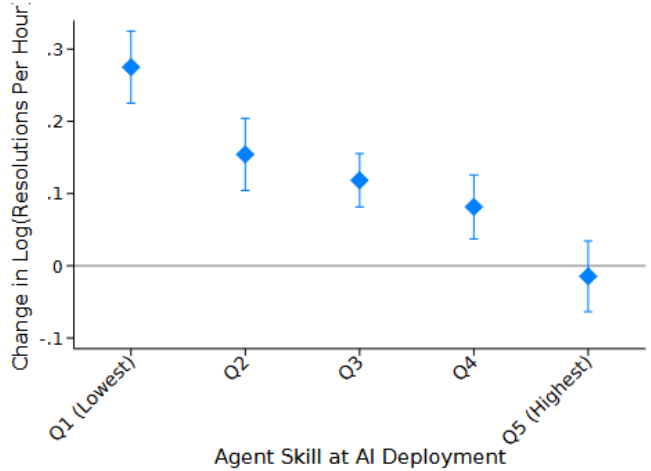
Empirical Finding 2: AI Helps Novices Most

"Generative AI at Work:" Introduction of a chat-bot assisting agents

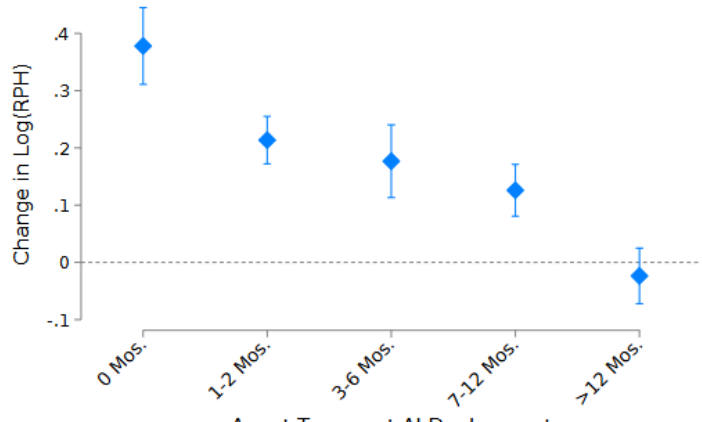
Fortune 500 Software Firm: Brynjolfsson, Li, and Raymond (2025b) studied 5,179 customer support agents

FIGURE 5: HETEROGENEITY OF AI IMPACT, BY SKILL AND TENURE

A. IMPACT OF AI ON RESOLUTIONS PER HOUR, BY SKILL AT DEPLOYMENT



B. IMPACT OF AI ON RESOLUTIONS PER HOUR, BY TENURE AT DEPLOYMENT



Idea 1: The Economics of Superstars

Why do a few individuals capture so much value?

Rosen (1981) identified two necessary conditions for extreme inequality:

1. **Imperfect Substitution:** Quality cannot be replaced by quantity. (One great expert is better than ten mediocre ones).
2. **Joint Consumption (Scalability):** Technology allows one performance/decision to serve a mass market at low marginal cost.

AI and Cognitive Superstars

AI provides the ultimate "joint consumption technology" for **cognitive work and judgment**. One good insight/judgement can be scaled instantly and globally.

Idea 2: Knowledge Hierarchies

Why Do Organizations Need Hierarchies?

Organizations exist to manage and utilize scarce, unevenly distributed knowledge efficiently. Allows firms to replace knowledgeable/highly trained workers with directions from managers.(Garicano, 2000).

Logic: Management by Exception

- **Workers (Less Knowledgeable):** Handle routine, frequent problems.
- **Solvers/Managers (More Knowledgeable):** Handle exceptional, difficult problems escalated by workers.

AI Rewires the Hierarchy

AI as a technology that converts compute into "AI agents" capable of performing knowledge work at various levels within this structure (Ide and Talamàs, 2025).

A Framework for Resolution: AI's Two Key Dimensions

(See Ide and Talamàs (2025))

The effect of AI on labor is not uniform. To reconcile the empirical puzzle, we must analyze AI along two critical dimensions:

1. **Autonomy: Can AI work alone?**
   - **Autonomous (Co-Worker):** Executes tasks directly; tends to *substitute* for human labor.
   - **Non-Autonomous (Co-Pilot):** Provides advice/assistance; tends to *complement* human labor.

2. **Knowledge Level: Is the AI basic or advanced?**
   - **Low-Level AI:** Competes with novices on routine tasks.
   - **High-Level AI:** Competes with experts on complex tasks.

The Four Futures of AI and Talent

	Low-Level AI (Basic Knowledge)	**High-Level AI** (Expert Knowledge)
Autonomous AI (Co-Worker / Substitute)	**1. Superstars & Displacement** *Explains "Canaries" findings.*	**3. Dystopia** (Mass Displacement)
Non-Autonomous AI (Co-Pilot / Complement)	**2. Novice Augmentation** *Explains "Generative AI at Work" findings.*	**4. Great Compression** (Radical Skill Leveling)

Case 1: Autonomous, Low-Level AI

The "Superstar" Scenario → Explaining the "Canaries" Finding

Mechanism: Substitution and Leverage

- AI acts as an "artificial co-worker" with basic knowledge.
- It directly **substitutes** for less experienced workers on routine tasks.
- Simultaneously, it **complements** top experts, who use the AI to leverage their judgment cheaply and at scale.

The Empirical Link

This aligns with Brynjolfsson, Chandar, and Chen (2025a).

- They find (Fact 3) that job losses are concentrated specifically where AI performs **automative** (substitutive) tasks, not augmentative ones.

Outcome: Rising Inequality

Top experts' value soars; entry-level jobs vanish. Example: Computer Programmers versus Software Engineers

Case 2: Non-Autonomous, Low-Level AI

The "Augmentation" Scenario → Explaining the "Novice Help" Finding

Mechanism: Complementation and Knowledge Diffusion

- AI acts as a "co-pilot"; humans remain responsible for execution.
- It **complements** novice workers by disseminating the tacit knowledge and best practices of experts.
- Novices benefit significantly; experts gain little as they already possess this knowledge.

The Empirical Link

This describes the scenario in Brynjolfsson, Li, and Raymond (2023).

- The AI assistant was designed to **augment** agents, leading to the 34% productivity jump for novices and faster learning.

Outcome: Skill Compression from Below

The performance gap between junior and mid-level employees shrinks.

Reconciling the Evidence: Autonomy is the Key

The Puzzle is Solved

The contradictory findings are not contradictory; they describe different deployment strategies of the *same* underlying technology.

- **The "Canaries" finding (Job Loss)** reflects the aggregate market trend where firms choose to **Automate** (Case 1).
  - AI as a Co-Worker $\rightarrow$ Substitution $\rightarrow$ Displacement.
- **The "Generative AI at Work" finding (Productivity Boost)** reflects a specific firm's choice to **Augment** (Case 3).
  - AI as a Co-Pilot $\rightarrow$ Complementation $\rightarrow$ Skill Compression.

Implication

The impact of AI on labor is significantly determined by management choices regarding deployment.

Case 3: Autonomous, High-Level AI

The "Dystopia" Scenario (Future Outlook)

Mechanism: Mass Substitution

- AI acts as an "artificial co-worker" with **expert-level** knowledge.
- It can handle both routine tasks and complex exceptions.
- It begins to substitute not just for workers, but also for the expert "solvers" (managers/specialists).

The Organizational Impact

- The need for human knowledge hierarchies dramatically shrinks.
- Organizations may retain only a tiny cadre of "super-experts" for problems beyond the AI's frontier.

Outcome: Widespread Technological Unemployment

If compute is abundant and AI is superior across most tasks, the incentive to employ humans at many levels diminishes.

Case 4: Non-Autonomous, High-Level AI

The "Great Compression" Scenario (Future Outlook)

Mechanism: Radical Complementation and Skill Leveling

- AI acts as a "co-pilot" with **expert-level** knowledge.
- It provides sophisticated advice and analysis, accessible to everyone.
- Novices gain access to near-expert capabilities almost immediately.

The Organizational Impact

- The value of accumulated human experience is significantly eroded.
- Experts are augmented, but their relative advantage over novices collapses. The hierarchy flattens.

Outcome: Wage Compression and Deskilling

A drastic compression of skills and wages. Value shifts from "knowing the answer" to "asking the right question" and validation.

The Current Landscape: A Tension in Deployment

Where are we today?

Currently, Generative AI is largely Low-Level AI. It excels at routine cognitive tasks but often lacks deep, contextual expert judgment.

- While augmentation (Case 3) is possible and effective, the broad labor market data (Case 1) suggests a strong trend towards automation.
- **Why?** Automation often offers more immediate cost savings by reducing headcount.

The Trade-off

Firms face a crucial choice between short-term efficiency (automation) and long-term skill development (augmentation).

The Future of Training

The Broken Career Ladder

Knowledge hierarchies traditionally served two purposes: Production (solving today's problems) and Training (creating tomorrow's experts).

The Apprenticeship Bargain at Risk (Garicano and Rayo, 2025)

- **Traditional Bargain:** Juniors "pay" for training by performing menial work.
- **AI Threat:** AI automates this menial work, removing the "currency" that finances training.
- Viability depends on a race between AI substituting entry tasks (the Floor) and AI complementing expert tasks (the Top).

Training in the age of AI

Viability Threshold (The "Rule of e")

Apprenticeships are safe only if the **Expertise Leverage Ratio (R)** is greater than e (≈ 2.7).

R = (Value of AI-assisted Expert) / (Value of AI alone)

- If $R > 2.7$: The pipeline is robust; training duration is stable.
- If $R < 2.7$: Training compresses; risk of pipeline collapse (especially if onboarding costs are high).

A Looming Talent Gap

We may face a future with powerful AI systems but a shortage of humans capable of directing, evaluating, and overriding them.

Conclusion: The Scarcity of Judgment

Summary of Findings

- The empirical puzzle (job loss vs. novice boost) is resolved by understanding AI deployment choices: **Autonomy matters**.
- The current trend shows both automation (Case 1) and augmentation (Case 2) occurring simultaneously, with significant implications for inequality and productivity.

The Path Forward

- The choice of how to deploy AI has profound societal implications.
- We must develop new models for training experts if traditional entry-level paths vanish.
- The ultimate scarce resource remains human **judgment**: choosing the right problem, asking the right question, and knowing when the machine is wrong.

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