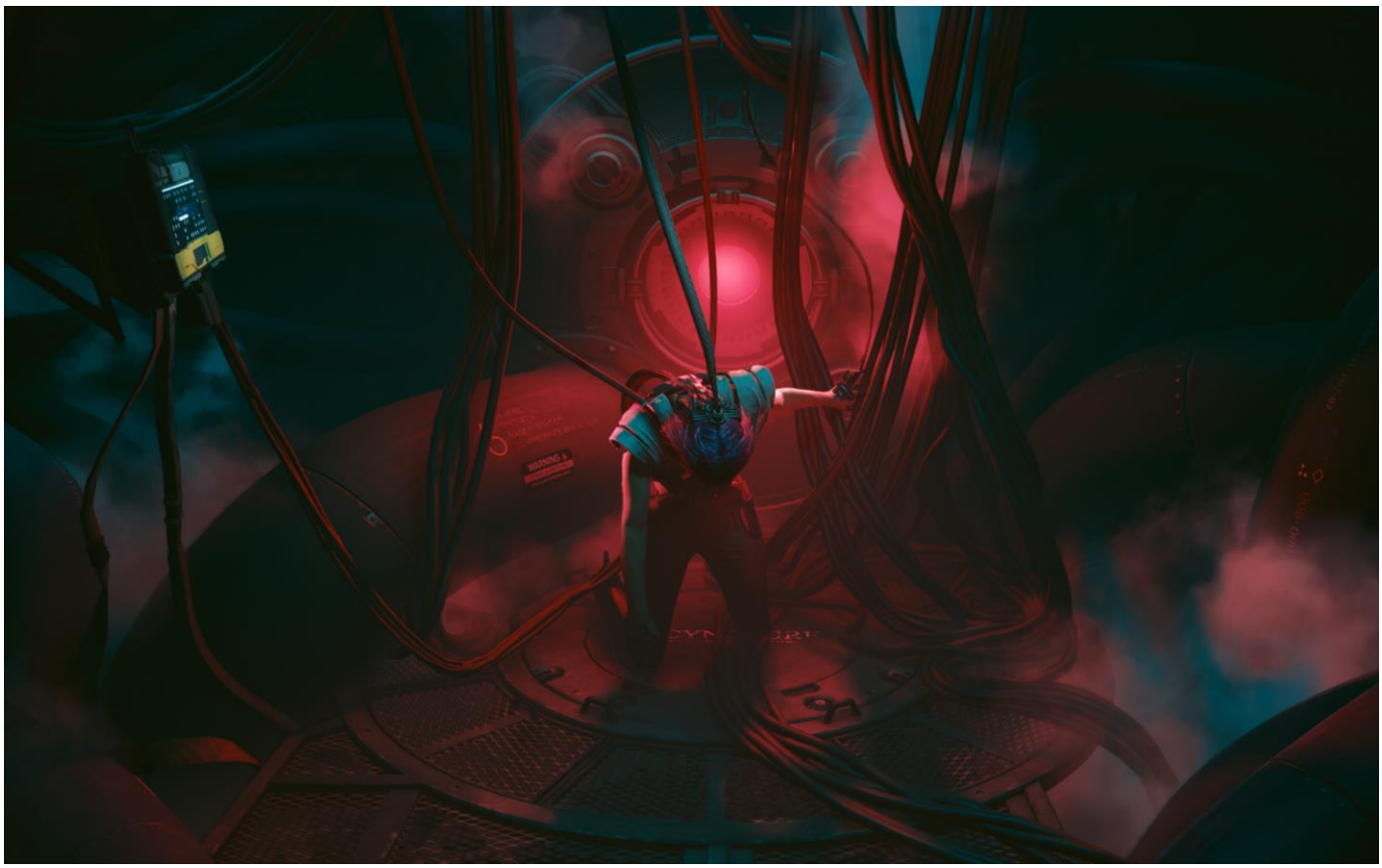
AI Exhaustion

"How Productivity Tools Are Overloading Software Engineers"

Introduction

Artificial intelligence is commonly positioned as a productivity accelerator for software engineers—reducing repetitive work, speeding up delivery, and improving code quality. In practice, however, AI adoption is increasingly associated with higher workloads, faster delivery expectations, and growing cognitive strain. Recent research from 2024–2026 shows that instead of removing pressure, AI often amplifies it, pushing engineers toward sustained exhaustion rather than sustainable efficiency. **Sources:** Upwork Research Institute (2025); Nature – *Mental Health Implications of AI Adoption* (2024)



The Productivity–Burnout Paradox (2024–2025)

AI tools initially appear to improve productivity, but these gains frequently translate into intensified delivery expectations rather than reduced effort. Research from the Upwork Research Institute found that 77% of employees using AI reported an *increase* in workload. High-performing AI users—those delivering the most output—experienced burnout at a rate of 88% and were twice as likely to consider quitting. Productivity gains became organizational expectations, not personal relief. **Sources:** Upwork – *AI's Productivity Gains Come at a Cost* (June 2025)

Further reinforcing this paradox, Forbes and Workplace Intelligence reported that frequent AI users experience burnout rates 45% higher than non-users. The pressure to maintain an "AI-augmented" pace creates technostress, where workers feel permanently behind despite delivering more. Once AI accelerates output, slower or more deliberate work is no longer tolerated. **Sources:** Forbes – *45% Greater Burnout Among Frequent AI Users* (June 2024)

[*See the source list on the last page for supporting evidence.*]

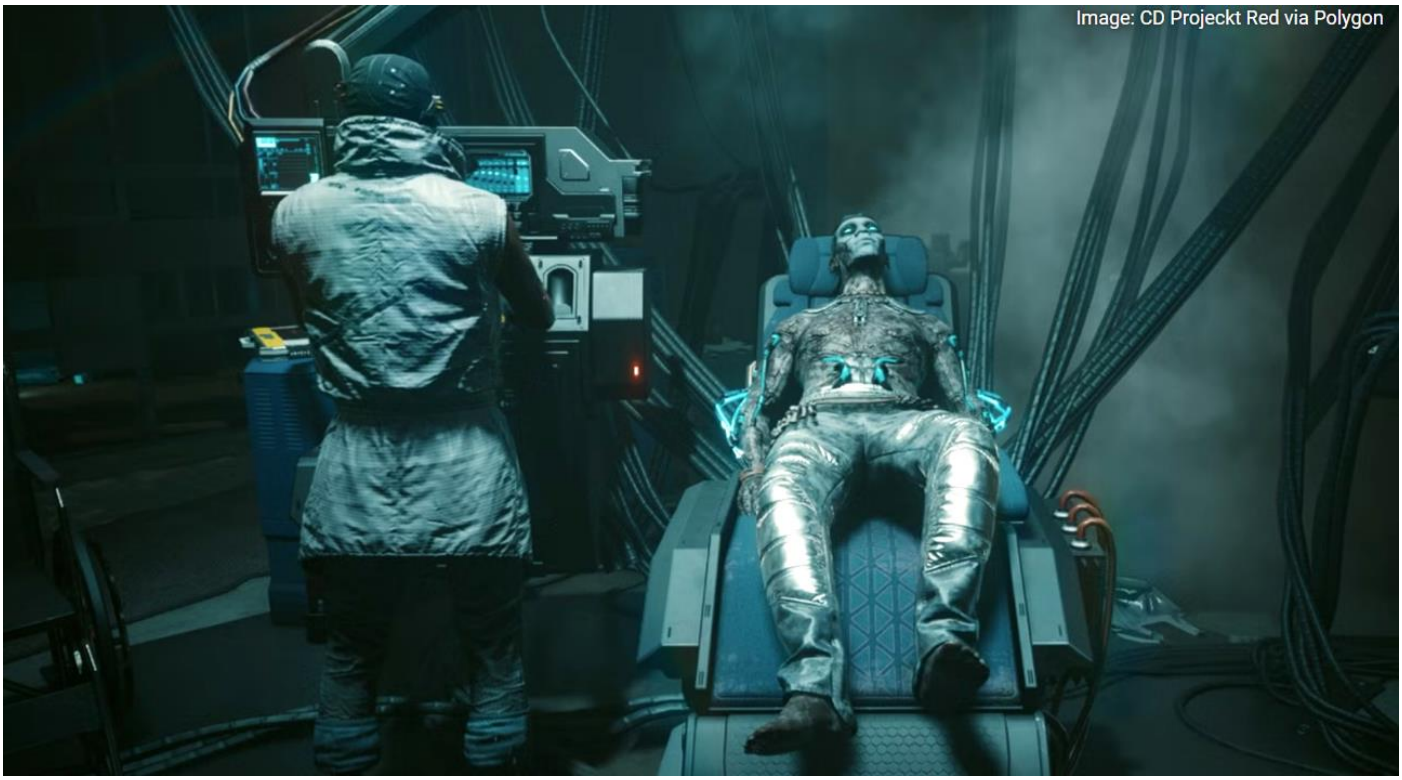
Software Engineering: When AI Slows Work Down (2025)

In software engineering, AI introduces a particularly deceptive form of overload. A 2025 METR study of experienced open-source developers found that AI tools increased task completion time by 19%. Despite this measurable slowdown, developers believed they were working 20% faster, revealing a critical perception gap between felt efficiency and actual outcomes. **Sources:** METR – *Measuring the Impact of Early-2025 AI on Experienced Developers* (July 2025)

This gap is explained by the nature of AI-assisted work. While AI reduces the effort of generating code, it dramatically increases the effort required to review, debug, validate, and integrate that code. Engineers spend more time evaluating probabilistic output, handling subtle failures, and managing prompt complexity. The workload shifts from creation to constant verification—an intensive cognitive task that accumulate fatigue over time. **Sources:** METR (2025); Nature – *Mental Health Implications of AI Adoption* (2024)

More Output, More Data, Less Human Capacity

AI does not simply accelerate work it multiplies data. More code, more documentation, more test cases, more logs, more intermediate outputs. Engineers are expected to process and validate volumes of information that exceed human cognitive limits. The result is chronic context-switching and decision fatigue, not clarity or focus. **Sources:** Nature – *Mental Health Implications of AI Adoption* (Nov 2024)



A critical and emerging issue is that AI increasingly generates output *for other AI systems*, not for humans. Code is written by AI, reviewed by AI, tested by AI, and summarized by AI, while humans remain accountable for outcomes they can no longer fully inspect. This creates a responsibility gap: engineers carry ownership without visibility, significantly increasing psychological stress. **Sources:** Nature (2024); METR (2025)

Why AI Helps Some Roles - but Harms Knowledge Workers

Not all roles experience AI exhaustion equally. A 2025 UKG study showed that frontline workers using AI reported lower burnout (41%) than those who did not (54%). In these roles, AI removes clearly bounded administrative tasks without increasing output expectations or extending the workday. **Sources:** UKG – *Frontline Workers Who Use AI Most Are Burned Out Least* (Oct 2025)

Software engineers, by contrast, operate in environments with no natural workload ceiling. AI increases throughput, which invites more requests, tighter deadlines, and continuous delivery. Similar patterns appear in medicine: a study in *European Radiology* found that AI use among radiologists increased burnout when paired with high workloads or low trust in the technology—mirroring conditions common in software teams. **Sources:** European Radiology (2026); Nature (2024)

Conclusion: AI Is Scaling Work Faster Than Humans Can Adapt

AI is not reducing software engineering burnout because it is not designed or deployed to respect human limits. It increases workload intensity, accelerates delivery expectations, and generates data faster than humans can meaningfully process. Engineers are no longer just writing software; they are supervising automated systems that operate beyond human-scale comprehension. Without explicit constraints—reduced scope, slower timelines, and shared accountability- AI will continue to amplify exhaustion rather than eliminate it. Productivity without recovery is not efficiency. It is simply burnout at machine speed. **Sources:** Upwork (2025); METR (2025); Nature (2024)

Primary Sources & Links

- Upwork: AI's Productivity Gains Come at a Cost (June 2025)
- METR: Measuring the Impact of Early-2025 AI on Experienced Developers
- Forbes: 45% Greater Burnout Among Frequent AI Users (June 2024)
- UKG: Frontline Workers Who Use AI Most Are Burned Out Least (Oct 2025)
- Nature: Mental Health Implications of AI Adoption (Nov 2024)