AI in the Workplace

MAPA Spring Training 2025

Sean Devine, Founder & CEO, XBE

XBE


YOU'RE NOT AS RUGGED AS THE REST, ARE YOU?

Two men were watching a mechanical excavator on a building site.

"If it wasn't for that machine," said one, "twelve men with shovels could be doing that job."

"Yes," replied the other, "and if it wasn't for your twelve shovels, two hundred men with teaspoons could be doing that job."

There are two ways to regard technological development. As a threat. Or as a promise.

Every invention from the wheel to the steam engine created the same dilemma.

But it's only by exploiting the promise of each that man has managed to improve his lot.

Computer technology has given man more time to create, and released him from the day-to-day tasks that limit his self fulfilment.

We ourselves are very heavy users of this technology ranging from golf ball typewriters to ink-jet printers to small and large computers, so we're more aware than most of that age-old dilemma threat or promise.

Yet during 27 years in the UK our workforce has increased from six to 15,000. And during those 27 years not a single person has been laid off, not a single day has been lost through strikes.

Throughout Britain, electronic technology has shortened queues. Streamlined efficiency. Boosted exports.

And kept British products competitive in an international market.

To treat technology as a threat would halt progress. As a promise it makes tomorrow look a lot brighter.

IBM

IBM United Kingdom Limited P.O. Box 41. North Harbour Portsmouth Hampshire PO6 3AU

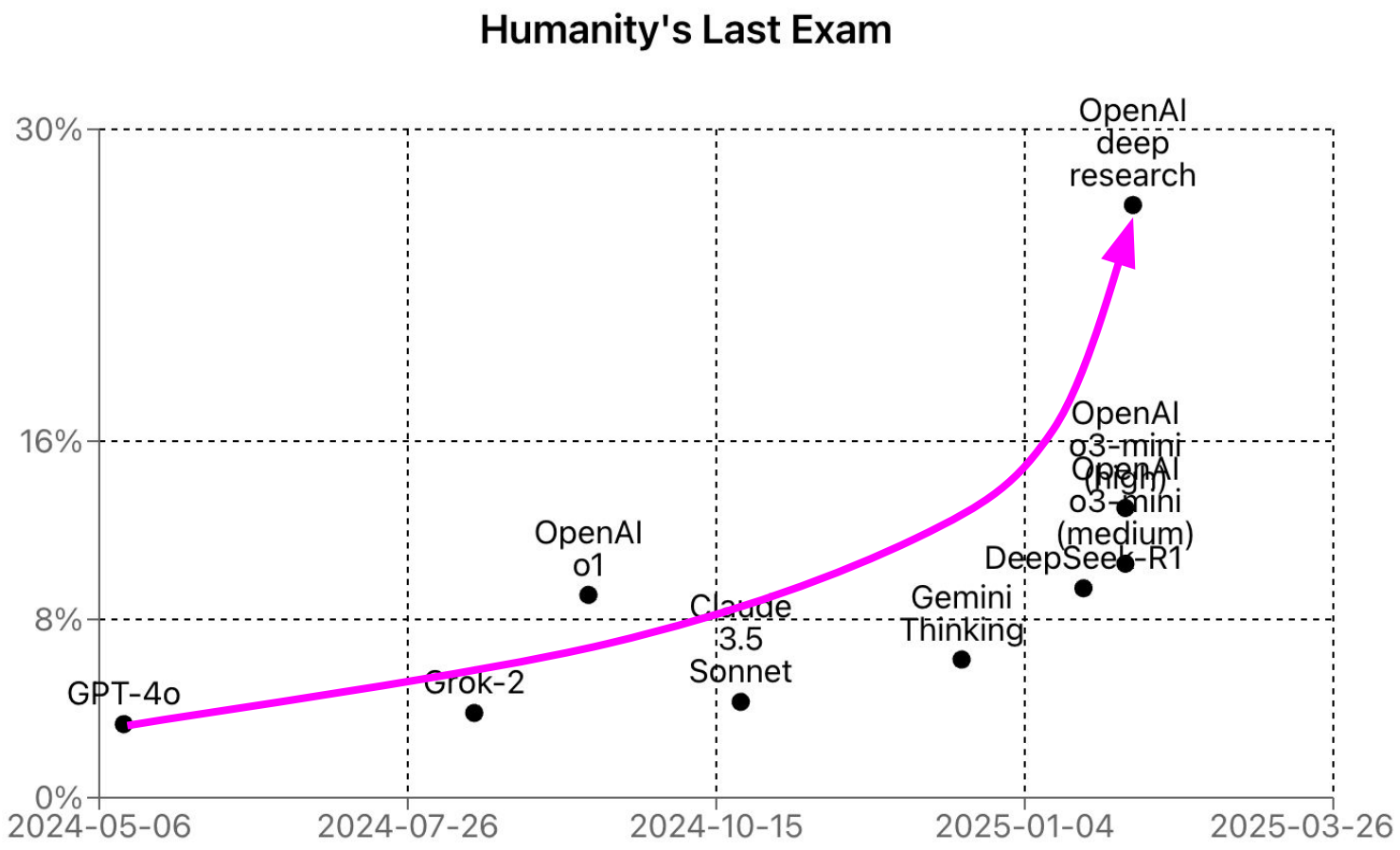
Exponential Change in Cost and Scaling Laws

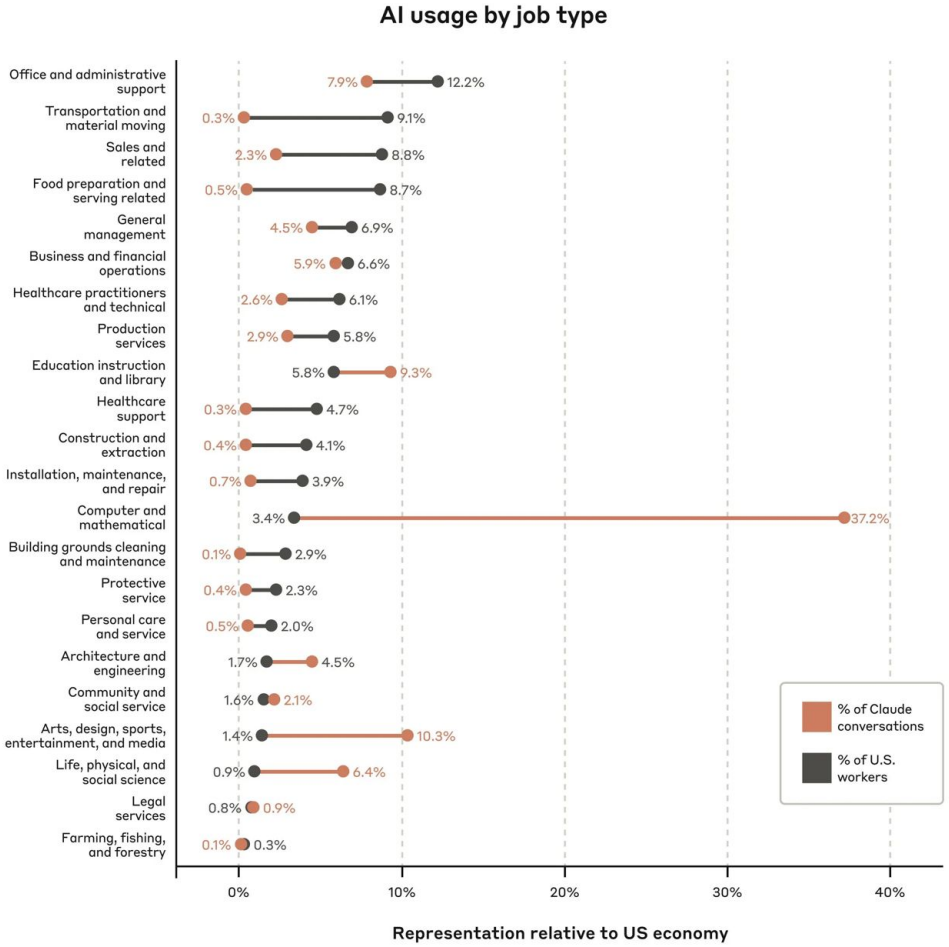
Year	$ Per Intelligence
2023	$1.00
2024	$0.10
2025	$0.01
2026	$0.001

The cost to use a given level of AI falls about 10× every 12 months

Year	Intelligence Per $
2023	1
2024	2
2025	3
2026	4

The intelligence of an AI model ~ log(resources)


Humanity's Last Exam
30%
16%
8%
0%
2024-05-06
2024-07-26
2024-10-15
2025-01-04
2025-03-26
OpenAI deep research
OpenAI o3-mini (high)
OpenAI o3-mini (medium)
DeepSeek-R1
Gemini Thinking
Claude 3.5 Sonnet
OpenAI o1
Grok-2
GPT-4o



The Anthropic Economic Index

AI Feature Example - Driver Assignment Rules

- **Problem**:
  - Manual driver assignment is error-prone and time-consuming.
  - Existing software is finicky, difficult to configure, and often misses edge cases.
  - Ensuring compliance (e.g., certifications, foreman/site preferences) can become unmanageable at scale.
- **Solution**:
  - **AI-Interpreted Plain-Text Rules**: Write flexible rules in everyday language; the AI automatically enforces them.
  - **Hierarchical & Composable**: Define rules at any level—shift, job, site, branch, etc.—to capture real-world complexity.
  - **Auto-Blocking with Overrides**: System blocks invalid assignments by default; authorized users can override with a recorded reason.
  - **Versioning & Audit Trail**: Transparent logging of rule changes and overrides for accountability.
- **Benefits**:
  - **Scaled Compliance**: No more missed certifications or overlooked restrictions—AI ensures every requirement is met.
  - **Reduced Errors**: Cuts out repetitive manual checks and eliminates the quirks of inflexible legacy systems.
  - **Efficient Scheduling**: Real-time validation speeds up assignment, with future automation to precompute eligible drivers.
  - **Full Transparency**: Version history and override logs provide a clear audit trail for accountability.

XBE is releasing this feature today, similarly impactful features are released weekly.

Frequently Unasked Questions

FUQs

Frequently Unasked Questions

10. Is AI just hype, or does it really matter for asphalt and paving?
9. Are we ceding too much control to algorithms that we don’t understand?
8. Will AI wipe out jobs—or create better ones?
7. If an AI-driven plan fails, who’s fault is it?
6. Could AI-driven efficiency lead to deflation—what will that mean?
5. How do I avoid looking clueless if AI evolves faster than I can keep up?
4. Will AI make roads better and how?
3. If I share data with AI tools, will my ‘trade secrets’ leak to competitors?
2. Who wins big with AI—and who ends up on the losing side?
1. If we ignore AI, do we risk getting left behind by everyone else?

“Sam [Altman] is more of a visionary. He’s better at riding exponentials than the rest of us—he sees where things are headed and focuses on what we need to do to be ready for it.”

Kevin Weil
Chief Product Officer, OpenAI

ChatGPT Deep Research Example

Research report on organizations with attendees scheduled to attend the MAPA Spring Training 2025.

Classics

Question:

Here is a representation of a Roman inscription, originally found on a tombstone. Provide a translation for the Palmyrene script. A transliteration of the text is provided: RGYNʾ BT ḤRY BR ʿTʾ ḤBL

Henry T
Merton College, Oxford

Ecology

Question:

Hummingbirds within Apodiformes uniquely have a bilaterally paired oval bone, a sesamoid embedded in the caudolateral portion of the expanded, cruciate aponeurosis of insertion of m. depressor caudae. How many paired tendons are supported by this sesamoid bone? Answer with a number.

Edward V
Massachusetts Institute of Technology

Trivia

Question:

In Greek mythology, who was Jason's maternal great-grandfather?

Darling D
Escuela Superior de Medicina- Instituto Politécnico Nacional

Linguistics

Question:

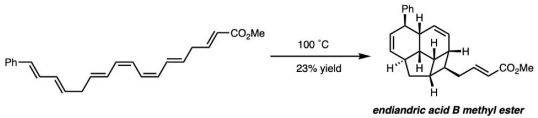
I am providing the standardized Biblical Hebrew source text from the Biblia Hebraica Stuttgartensia (Psalms 104:7). Your task is to distinguish between closed and open syllables. Please identify and list all closed syllables (ending in a consonant sound) based on the latest research on the Tiberian pronunciation tradition of Biblical Hebrew by scholars such as Geoffrey Khan, Aaron D. Hornkohl, Kim Phillips, and Benjamin Suchard. Medieval sources, such as the Karaite transcription manuscripts, have enabled modern researchers to better understand specific aspects of Biblical Hebrew pronunciation in the Tiberian tradition, including the qualities and functions of the shewa and which letters were pronounced as consonants at the ends of syllables.

מִן־גַּעֲרָתְךָ יְנוּסוּן מִן־קוֹל רַעַמְךָ יֵחָפֵזוּן (Psalms 104:7) ?

Lina B
University of Cambridge

Chemistry

Question:



endiandric acid B methyl ester

The reaction shown is a thermal pericyclic cascade that converts the starting heptaene into endiandric acid B methyl ester. The cascade involves three steps: two electrocyclizations followed by a cycloaddition. What types of electrocyclizations are involved in step 1 and step 2, and what type of cycloaddition is involved in step 3?

Provide your answer for the electrocyclizations in the form of [nπ]-con or [nπ]-dis (where n is the number of π electrons involved, and whether it is conrotatory or disrotatory), and your answer for the cycloaddition in the form of [m+n] (where m and n are the number of atoms on each component).

Noah B
Stanford University

Physics

Question:

A block is placed on a horizontal rail, along which it can slide frictionlessly. It is attached to the end of a rigid, massless rod of length R. A mass is attached at the other end. Both objects have weight W. The system is initially stationary, with the mass directly above the block. The mass is given an infinitesimal push, parallel to the rail. Assume the system is designed so that the rod can rotate through a full 360 degrees without interruption.

When the rod is horizontal, it carries tension T_1. When the rod is vertical again, with the mass directly below the block, it carries tension T_2. (Both these quantities could be negative, which would indicate that the rod is in compression.) What is the value of $(T_1 - T_2)/W$?

Kevin Z
UC Berkeley