



Cyber, Cyber Security and the AI Future
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Cybersecurity is Personal Security



- You and your family are part of your spouse's attack surface.
- Social Engineering in the #1 threat
- Data Aggregation can make you vulnerable: geofencing, geotagging, image recognition of faces and places
- Your home network is a soft target: WPA3, router firmware, separate networks for IoT devices
- Be cautious with app permissions, esp. contacts & microphone





Militaries Rely on Cyber





The US Economy Relies on Cyber



Alaska Airlines had an IT outage that led to a temporary ground stop affecting its operations.



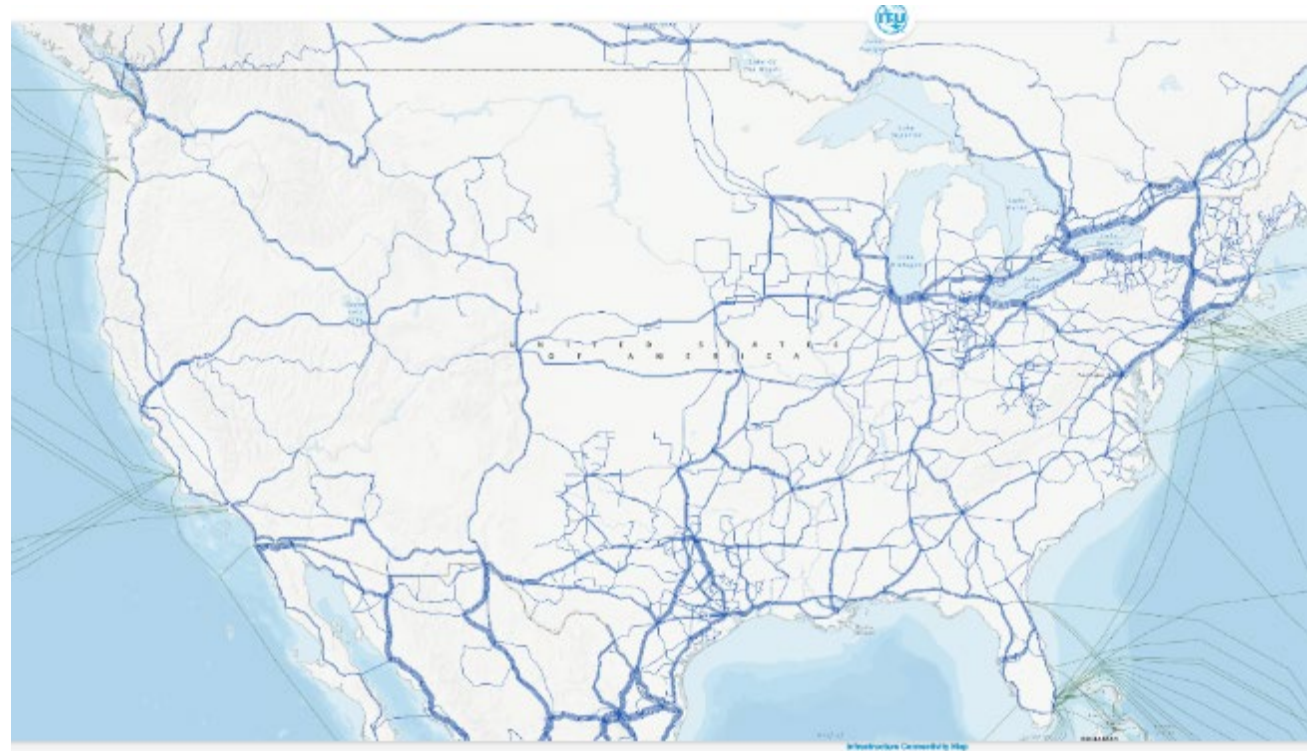
Global Microsoft IT outage grounds flights across US



Structural Reality



- Cyber Infrastructure
 - Privately Owned (mostly)
 - Globally Interconnected (with chokepoints)
 - Capital-intensive (significant % of global GDP)
 - Jurisdictionally Fragmented
 - Concentrated critical supply chains



The result of decades of efficiency-driven globalization



Points of Failure In NVIDIA's Supply Chain

Lithography choke point (ASML – Netherlands)

- Advanced NVIDIA chips *cannot exist* without EUV lithography
- **Single firm, single country**, export-controlled toolchain
- Political or supply disruption halts *all* leading-edge production

Design software duopoly (Cadence / Synopsys – U.S.)

- Chip design depends on a **duopoly of EDA software**
- Loss of access = inability to design, verify, or iterate new chips
- Software updates, licenses, and IP controls are strategic leverage

Fabrication concentration (TSMC – Taiwan)

- NVIDIA relies on **one dominant foundry** for advanced nodes
- No near-term substitute at equivalent scale or yield

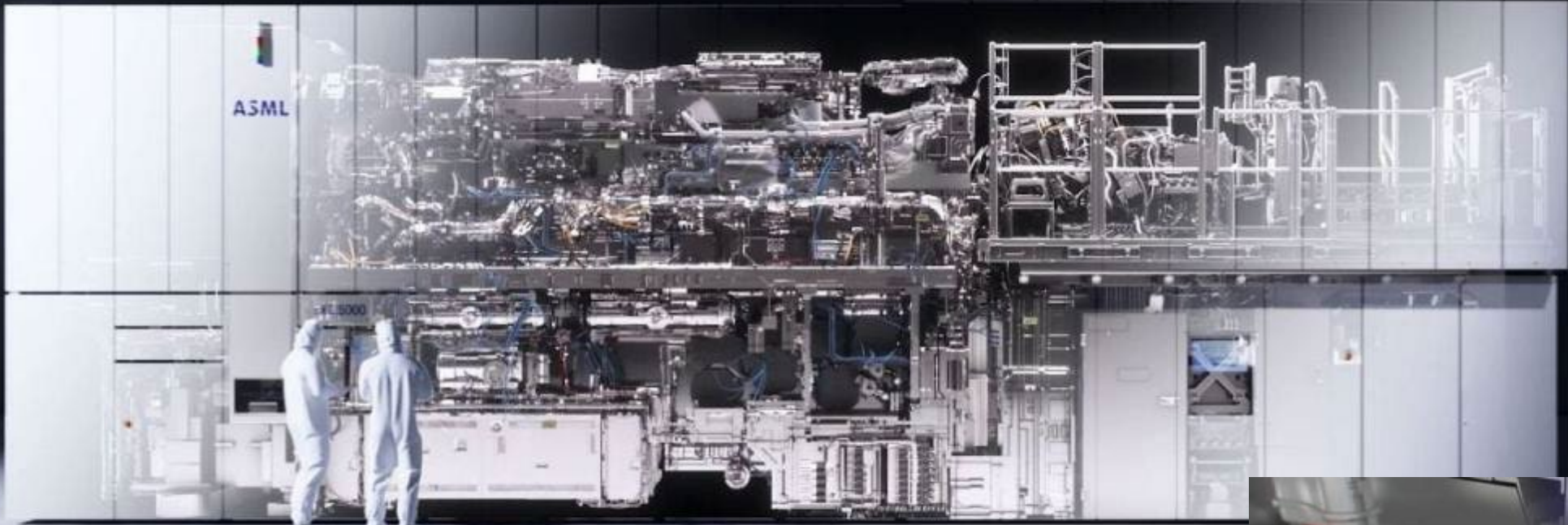


“AI superiority” rests on a **stack of privately owned, globally distributed single points of failure**—none of which the state fully controls in crisis.

Advanced Semiconductor Materials Lithography

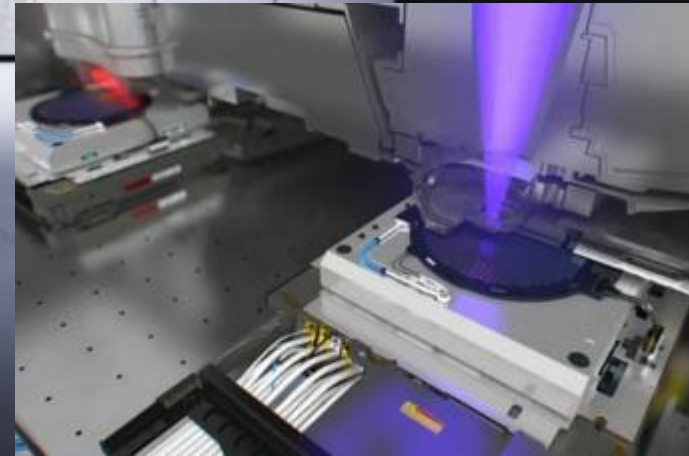
ASML

“ASML: The US\$378 Million Machines That Make Modern Life Possible”, Yahoo! Finance, 2 OCT 2025



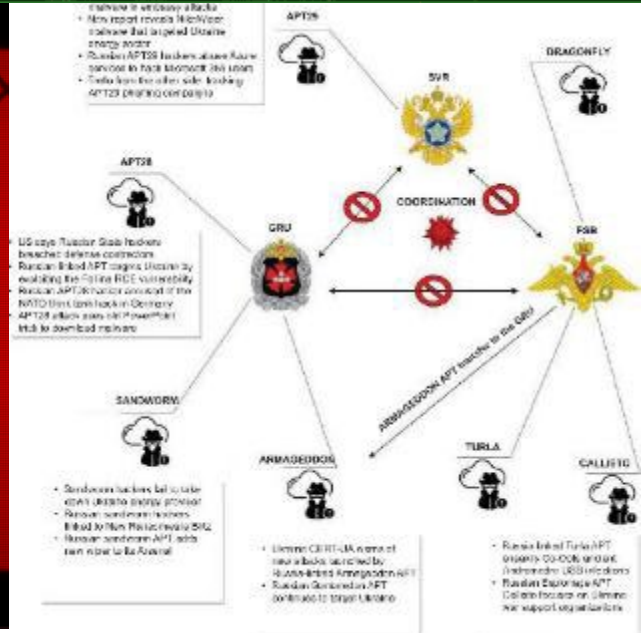
“Every smartphone in your pocket, every car with advanced electronics, and every server that powers the internet relies on one company’s machines.”

- TSMC
- Samsung
- Intel (entire 2024 production)
- \$700m per machine in 2030





External Threats



S H I N Y H U N T E R S
rooting your systems since '19 ;)

ShinyHunters has breached Instructure (again).
Instead of contacting us to resolve it they
ignored us and did some "security patches".

△ W A R N I N G

If any of the schools in the affected list are
interested in preventing the release of their
data, please consult with a cyber advisory firm
and contact us privately at TOX to negotiate a
settlement. You have till the end of the day by
12 May 2026 before everything is leaked.

Instructure still has until EOD 12 May 2026
to contact us.

▼ DOWNLOAD AFFECTED_SCHOOLS.TXT ▼
91.215.85.103/pay_or_leak/
instructure_affected_schools_list.txt

visit us: shnyhntww34phqoa6dcgnvps2yu7dlwzmy5
lkvejwjd06z7bmgshzayd.onion



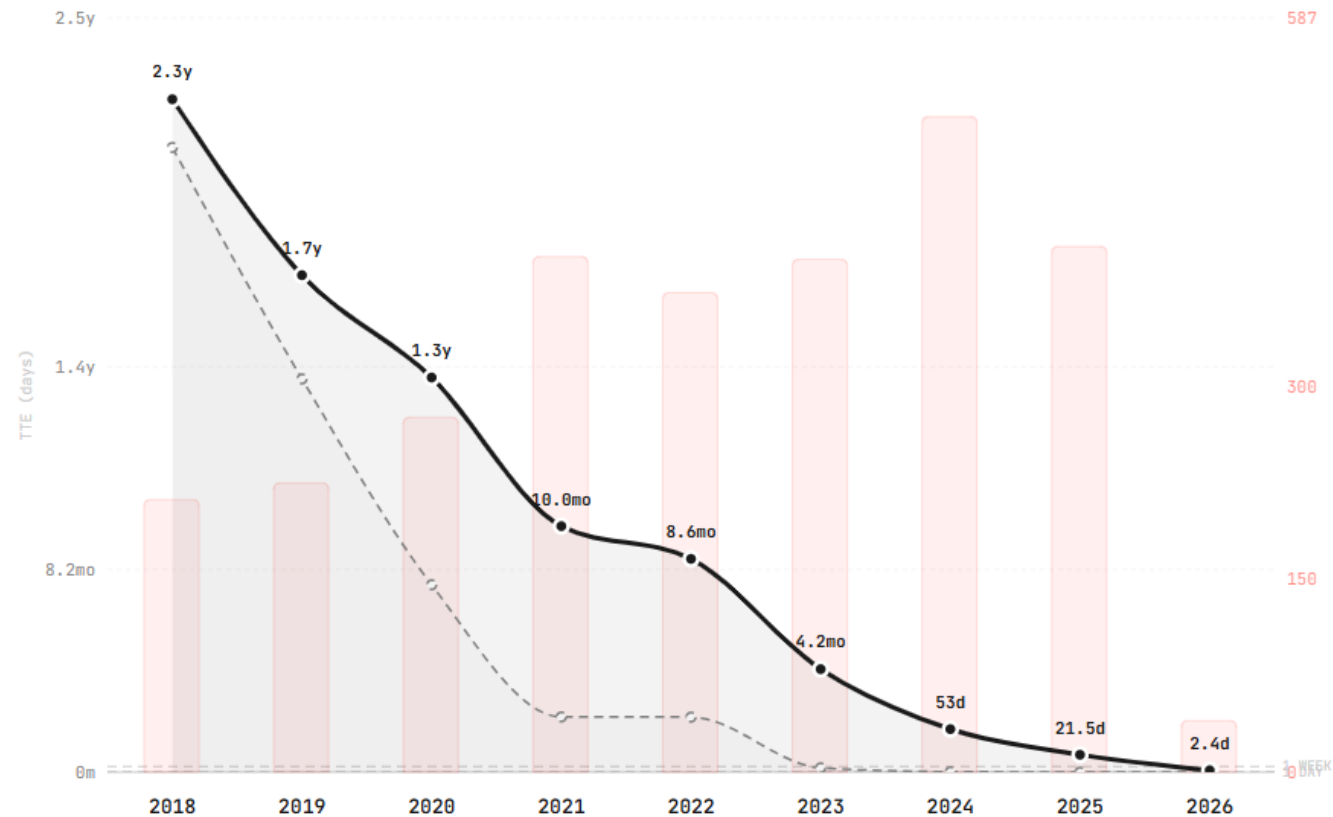
Zero Day Exploits



From Vulnerability to Exploitation

TTE measures the gap between CVE public disclosure and first confirmed in-the-wild exploitation. Zero = same-day.

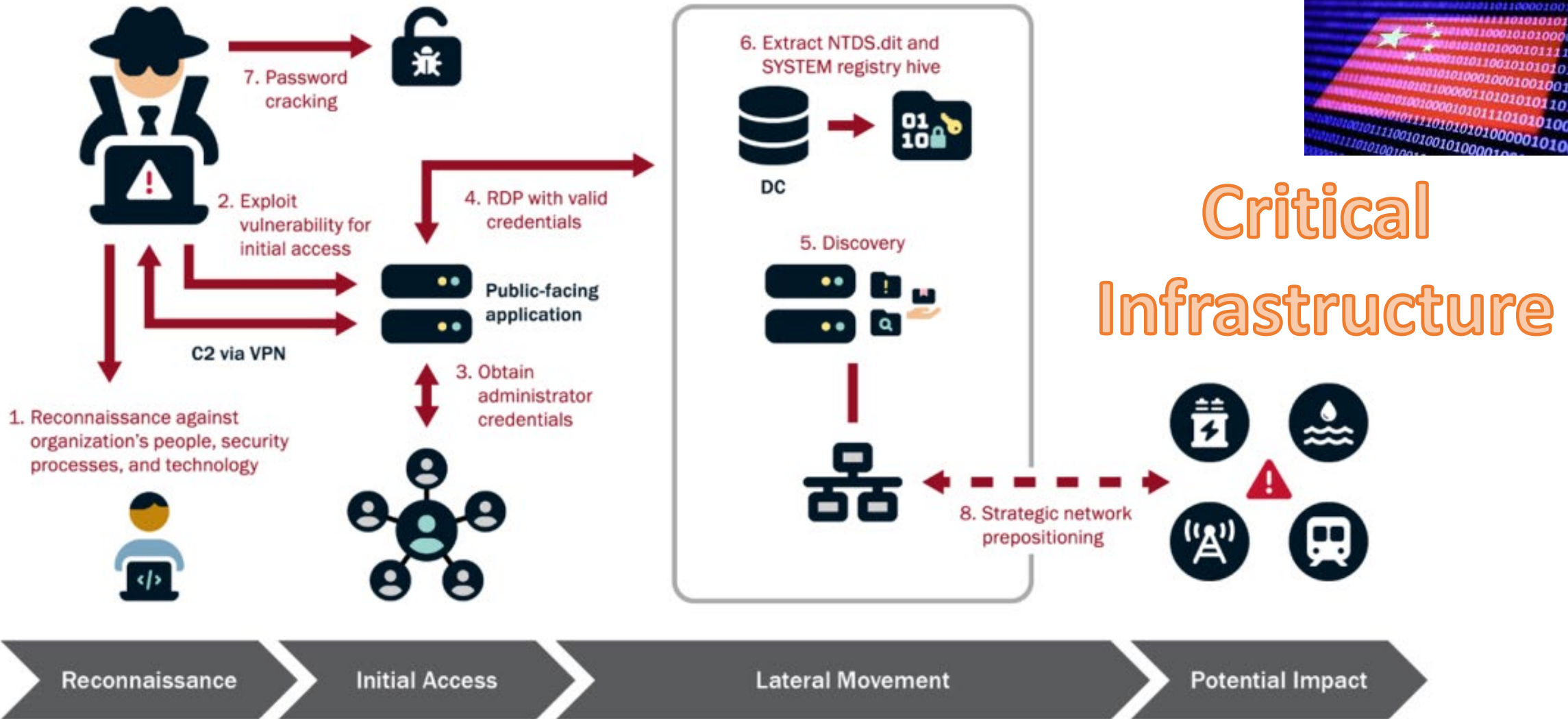
— Mean TTE (10% trimmed, days) - - - Median TTE (days) ■ Weaponized Exploits (count)



~2027 should reach 1 hour to 1 minute



Volt Typhoon





Salt Typhoon Attack Footprint



- Compromised Telecommunication Infrastructure
- Allowed Breaching for government wiretapping systems
- Established persistence in 80 nations & at least 600 organizations



<https://globalcyberalliance.org/new-report-salt-typhoon-across-the-internet/>

UNCLASSIFIED



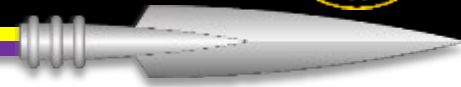
Cyber Aware Case Study: OPM



- In what appeared to be a coordinated campaign to collect information on government employees, attackers stole the personnel files of 4.2 million former and current government employees and security clearance background investigation information on 21.5 million individuals. Additionally, fingerprint data for 5.6 million of these individuals was stolen. Background investigation information includes some of the most intimate and potentially embarrassing aspects of a person's life, including whether the applicant consulted with a healthcare professional regarding an emotional or mental health condition, used illegal drugs, abused alcohol, or experienced financial problems.



GPQA Example Questions



Molecular Biology

A scientist studies the stress response of barley to increased temperatures and finds a protein which contributes to heat tolerance through the stabilisation of cell membrane. The scientist is very happy and wants to create a heat-tolerant cultivar of diploid wheat. Using databases, they find a heat tolerance protein homologue and start analysing its accumulation under heat stress. Soon enough, the scientist discovers this protein is not synthesised in the wheat cultivar they study. There are many possible reasons for such behaviour, including:

- A) A miRNA targets the protein, which makes exonucleases cut it immediately after the end of translation and before processing in ER
- B) Trimethylation of lysine of H3 histone in position 27 at the promoter of the gene encoding the target protein
- C) A stop-codon occurs in the 5'-UTR region of the gene encoding the target protein
- D) The proteolysis process disrupts a quaternary structure of the protein, preserving only a tertiary structure

Astrophysics

Astronomers are studying a star with a T_{eff} of approximately 6000 K. They are interested in spectroscopically determining the surface gravity of the star using spectral lines ($EW < 100 \text{ m\AA}$) of two chemical elements, E11 and E12. Given the atmospheric temperature of the star, E11 is mostly in the neutral phase, while E12 is mostly ionized. Which lines are the most sensitive to surface gravity for the astronomers to consider?

- A) E12 I (neutral)
- B) E11 II (singly ionized)
- C) E12 II (singly ionized)
- D) E11 I (neutral)

Quantum Mechanics

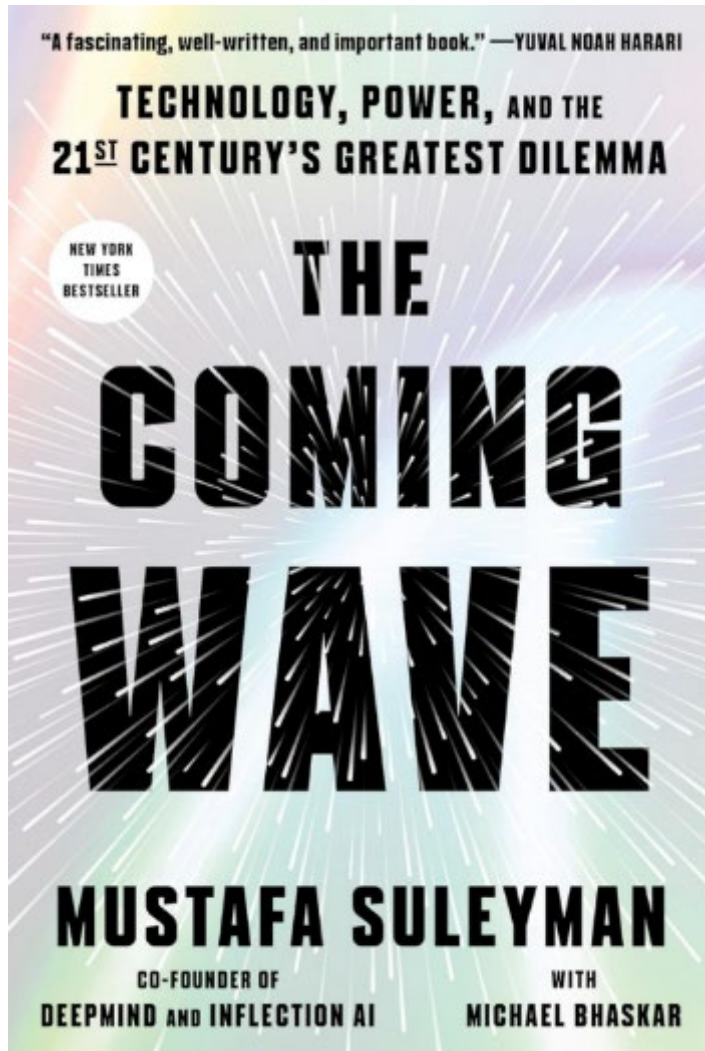
Suppose we have a depolarizing channel operation given by $E(\rho)$. The probability, p , of the depolarization state represents the strength of the noise. If the Kraus operators of the given state are $A_0 = \sqrt{1 - \frac{3p}{4}}$, $A_1 = \sqrt{\frac{p}{4}}X$, $A_2 = \sqrt{\frac{p}{4}}Y$, and

$A_3 = \sqrt{\frac{p}{4}}Z$. What could be the correct Kraus Representation of the state $E(\rho)$?

- A) $E(\rho) = (1 - p)\rho + \frac{p}{3}X\rho X + \frac{p}{3}Y\rho Y + \frac{p}{3}Z\rho Z$
- B) $E(\rho) = (1 - p)\rho + \frac{p}{3}X\rho^2 X + \frac{p}{3}Y\rho^2 Y + \frac{p}{3}Z\rho^2 Z$
- C) $E(\rho) = (1 - p)\rho + \frac{p}{4}X\rho X + \frac{p}{4}Y\rho Y + \frac{p}{4}Z\rho Z$
- D) $E(\rho) = (1 - p)\rho^2 + \frac{p}{3}X\rho^2 X + \frac{p}{3}Y\rho^2 Y + \frac{p}{3}Z\rho^2 Z$



Is AI Replacing Labor or Redefining It?



Three Claims About AI

1. AI will automate professional work at scale.
2. AI will increase productivity but not reduce employment.
3. AI will increase demand for elite human talent while hollowing out the middle.

Dario Amodei, the CEO of Anthropic, says AI is now writing "much of the code" at his company, ... predicts that AI will eliminate 50% of entry-level knowledge workers in 1-5 years

Mustafa Suleyman (CEO of Microsoft AI, former head of DeepMind):
<https://youtu.be/YTrBz6Z5c0E?t=688> (11:25)
<https://www.youtube.com/watch?v=YTrBz6Z5c0E>



AI is Transforming Knowledge Work



“I am no longer needed for the actual technical work of my job. I describe what I want built, in plain English, and it just... appears. Not a rough draft I need to fix. The finished thing. I tell the AI what I want, walk away from my computer for four hours, and come back to find the work done. Done well, done better than I would have done it myself, with no corrections needed.” Matt Shumer

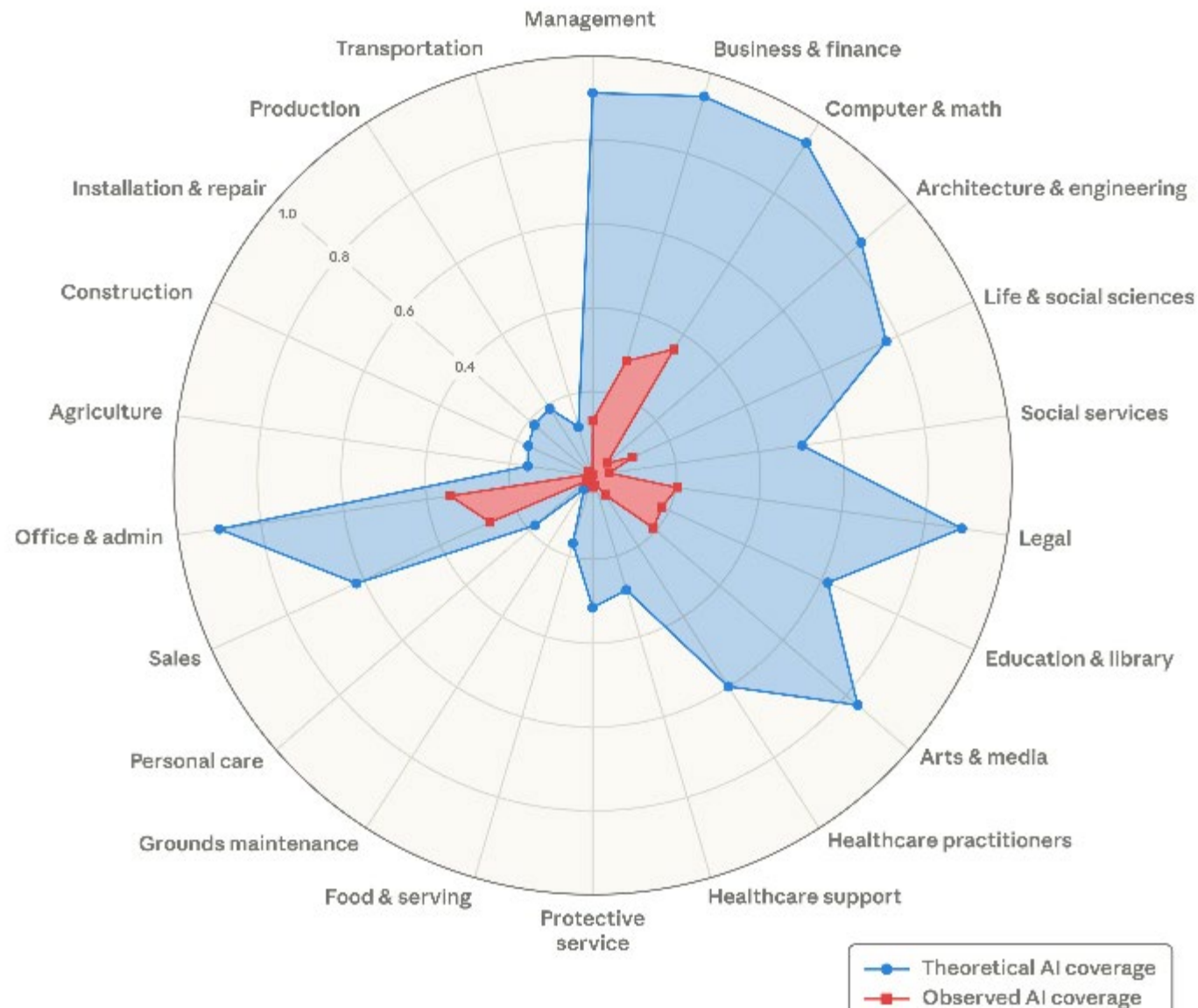
- Legal Work (contracts, case law, briefs, research)
- Financial Analysis (models, data, memos, reports)
- Writing and Content (Marketing, journalism, technical writing)
- Software Engineering (coding, complex projects)
- Medical Analysis (reading scans, lab results, diagnoses)
- Customer Service (complex, multi-step problem-solving)

<https://shumer.dev/something-big-is-happening>

<https://www.bloomberg.com/news/videos/2026-02-20/ai-investor-matt-shumer-on-viral-essay-on-ai-risks-video>



Theoretical capability and observed exposure by occupational category



<https://www.anthropic.com/research/labor-market-impacts>



White-Collar Jobs in 2026: The Transformation



85 million jobs replaced by AI globally by 2030



170 million new roles emerging by 2030



1.1 million U.S. layoffs in 2025



39% of workers' core skills expected to shift by 2030

↑ GROWING ROLES ↑



AI & Data Processing:
+11 million jobs by 2030



Cybersecurity



Professional, Scientific & Technical Services
(leading growth sector)



Clean Energy



Healthcare Administration



Data Analytics

↓ DECLINING ROLES ↓



Entry-level white-collar positions (50% at risk in 1-5 years)



Routine Administrative Tasks



Data Entry



Tech sector: 150,000+ layoffs in 2025



Basic Financial Analysis



Unemployment duration in financial services: +20 weeks (2025 vs 2023)



SKILLS & SALARY IMPACT



Workers with AI skills earn **56% more** than peers



AI-influenced industries: wages growing at **2x** rate



Professionals with AI expertise: **28%-56%** salary premium



AI knowledge



Data analysis



Digital literacy



Problem-solving

Key skills needed



30% of work hours automated by 2030



32% of workforce needs retraining

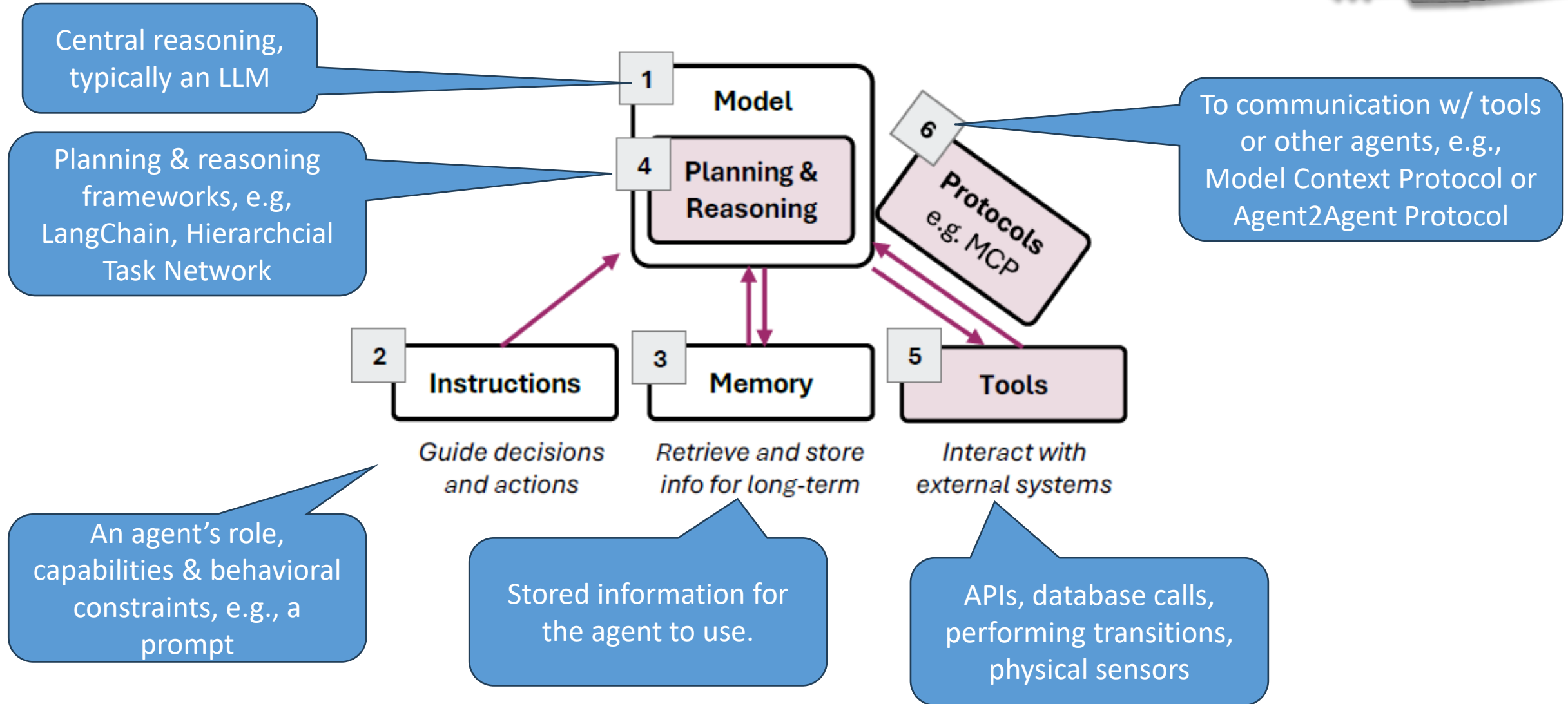


92 million jobs displaced globally by 2030 (8% of employment)

<https://www.lockedinai.com/blog/white-collar-jobs-2026-roles-grow-disappear>



So, What is Agentic AI?





Questions?