



THE AI SECURITY PARADOX

# Why Your Best Defense Is Still Human

STRATEGIC GUIDE FOR SECURITY LEADERS - 2026 EDITION



## EXECUTIVE SUMMARY

# The promise was simple.

**AI-powered security tools would automate operations, reduce staffing needs, and cut costs by up to 50%.**

The reality is more complex.

While AI has become essential for modern security operations, it's creating unexpected challenges. **42% percent of security professionals report that AI tools are actually increasing false positives rather than reducing them.** At the same time, the threat landscape has grown dramatically more dangerous with a reported 80% of ransomware attacks now using artificial intelligence to create everything from malware to generate phishing content to crack passwords. Criminals with only basic coding skills are using AI to develop sophisticated malware they couldn't create on their own.

This creates a paradox: As AI becomes both the primary threat and the primary defense tool, skilled human defenders have become more valuable than ever.

The organizations that will dominate security in 2026 aren't choosing between AI and humans. They're building AI-augmented teams that combine machine speed and scale with human judgment and context. They're investing in both cutting-edge tools and the expertise to wield them effectively.

This guide will show you why that approach isn't just ethically sound—it's the only strategy that delivers real ROI.

## WHAT YOU'LL LEARN

01

**The AI Security Paradox:  
When Automation Creates More Work**

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02

**Why Human Expertise Still Delivers  
the Real Security ROI**

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03

**How to Build and Retain  
an AI-Augmented Security Team**

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04

**How to Answer the C-Suite's  
“Can't AI Do This?” Question**

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05

**The Strategic Choice Facing  
Security Leaders in 2026**

SECTION 01

# The AI Security Paradox

The Promise vs. The Reality



## THE AI SECURITY PARADOX

# The Promise vs. The Reality

Your vendor promised AI would reduce alert fatigue. So why are your analysts drowning in false positives?

Two years ago, security vendors made compelling pitches: Deploy AI-powered tools and you'll automate Tier 1 operations, reduce staffing needs, cut operational costs by 40-50%, and eliminate human error. Board members asked why you needed to hire more analysts when AI could do the work.

It sounded reasonable. AI excels at pattern matching, processes data at machine speed, and never gets tired. Why wouldn't it revolutionize security operations?

But as organizations began deploying AI-powered security tools, the reality proved far more complicated. Three inconvenient truths quickly emerged.



## TRUTH 01

# AI-Powered Attacks Are Outpacing AI Defenses

While you were deploying AI-powered defense tools, attackers were doing the same thing — except they moved faster.

Researchers discovered **PromptLock**, the first known AI-powered ransomware that uses locally accessible AI models to generate malicious scripts in real time.

One threat actor used agentic AI to automate an entire extortion campaign targeting **17 organizations**, with demands exceeding **\$500,000**.

Research from MIT Sloan and Safe Security found that **80% of ransomware attacks were powered by artificial intelligence**.

Threat actors with only basic coding skills used AI to develop, market, and distribute sophisticated ransomware variants for **\$400-\$1,200 on dark web forums**.

**The bottom line:** The threat landscape isn't just evolving—it's being fundamentally transformed by the same AI technology you're deploying for defense.

TRUTH 02

# AI Tools Are Creating New Problems

Here's what your vendors didn't tell you: AI security tools require massive tuning, generate context-free alerts, and often create more work than they eliminate.

Why? Because AI lacks three critical capabilities:

**01 Missing Context**

Can't distinguish normal month-end activity from suspicious behavior

**02 Business Understanding**

Can't account for acquisitions, integrations, or special circumstances

**03 Threat Prioritization**

Can't weigh business impact against operational cost of investigation

The Result: Your analysts spend hours investigating alerts that AI generated but lacks the context to properly triage. You've automated alert creation, but you've also automated alert fatigue.

When polled about AI-powered network security tools, security professional reported:



57% of security professionals see either no improvement or worse performance from their AI-powered tools.

### TRUTH 03

# The Skills Gap Is Widening, Not Closing

Many organizations responded to AI hype by cutting entry-level positions and freezing headcount, expecting AI to fill the gap.

#### AI-Exposed Roles Based on Age

**-13%**

Employment decline  
for workers aged 22-25

vs.

**+6%**

Employment growth  
for workers aged 30+

#### What's the difference?

AI has “book knowledge” like recent graduates—information from formal training and documentation. But experienced workers have “tacit knowledge”—tricks of the trade learned through experience that may never be written down anywhere. They understand context, can troubleshoot novel problems, and make judgment calls that AI can't replicate.

#### Organizations that cut junior positions discovered two problems:

- 01** AI can't actually do what junior analysts do
- 02** They've eliminated their pipeline for developing experienced analysts.



# The Paradox Defined

**The paradox is clear:** AI is both the threat and the tool. Organizations that understand this aren't choosing between AI and humans—they're investing strategically in both.



AI-powered attacks are exploding in sophistication and volume



AI defense tools require skilled operators to be effective (and often create more work)



Experienced security professionals are in higher demand than ever



Organizations are cutting the junior positions that develop into those experienced professionals

The question isn't "How do we replace people with AI?"

The question is

**"How do we build teams where AI amplifies human capability rather than creating new problems?"**

SECTION 02

# Why Human Expertise Still Delivers the Real Security ROI

Why the 'Lights-Out SOC' Is a Fantasy (And Why That's Good News)



# Why the “Lights-Out SOC” Is a Fantasy (And Why That’s Good News)

Let’s address the elephant in the boardroom: “If AI can handle 80% of alerts, why can’t we just hire fewer people?”

Because that statistic is misleading—and pursuing it as a goal actively harms your security posture.

Yes, AI can process 80% of alerts. But processing isn’t the same as resolving. Those alerts still require human investigation, validation, and response. And when your AI tool has a 42% false positive rate, you’ve just automated the creation of thousands of alerts that lead nowhere—burning analyst time and obscuring real threats.

Let’s look at the actual economics.



# The False Positive Tax

## Average SOC Analyst Activity

50 alerts/day  
x 42% false positives  
-----  
21 wasted investigations/day

21 investigations  
x 15 minutes each  
-----  
5.25 hours/day lost

## 10-Person SOC Team

52.5 hours wasted every day

**\$657,000**  
per year in lost analyst time

*Before accounting for missed threats or turnover*

## And that doesn't include:

-  Analyst burnout and turnover
-  Real threats missed during investigations
-  Slower incident response

### Key Takeaway:

AI doesn't eliminate analyst work – it amplifies it.

Organizations that invest in training and tuning reduce false positives and unlock the real ROI of AI-powered security tools.

# What AI Can (and Can't) Do

Using the industry-standard PPDIOO model, here's what AI genuinely handles versus what requires human expertise:

| Phase            | AI Can Handle                                | Requires Humans   | Why Humans Win  |
|------------------|--|---|---|
| <b>Prepare</b>   | Draft security assessments & compliance docs | Define business requirements, interpret compliance in context | <i>Can't weigh risk tolerance or understand org culture</i>       |
| <b>Plan</b>      | Generate project plans & task lists          | Gap analysis, stakeholder management                          | <i>Requires understanding politics &amp; resource constraints</i> |
| <b>Design</b>    | Suggest segmentation & security controls     | Validate designs against business needs                       | <i>AI can't sign off on million-dollar decisions</i>              |
| <b>Implement</b> | Automate config deployment & updates         | Test in production, handle exceptions                         | <i>Legacy systems &amp; undocumented dependencies</i>             |
| <b>Operate</b>   | Monitor metrics & triage initial alerts      | Investigate anomalies, lead incident response                 | <i>"This looks wrong" even when metrics seem normal</i>           |
| <b>Optimize</b>  | Analyze capacity trends & generate reports   | Tune systems based on business feedback                       | <i>"Better" means different things per org</i>                    |

# The Experience Premium

## The Data

- ↓ Entry-level security roles: **13%**
- ↑ Experienced professionals: **6–12%**

AI didn't eliminate jobs — **it increased demand for experience.**

*Stanford labor analysis*

## Why This Is Happening

AI learns from documented knowledge (networking guides, playbooks, documentation)

Experienced analysts rely on tacit knowledge:

- + Recognizing unusual patterns in real environments
- + Understanding how specific systems behave
- + Knowing when something “doesn't look right”

**This knowledge isn't written down** — it's learned through experience.

## The Human Capabilities AI Can't Replace:



### Communication

*Example:* Explaining incidents and risk to executives.



### Strategic Judgment

*Example:* Balancing security decisions with business impact.



### Incident Leadership

*Example:* Coordinating response and making decisions under pressure.

## Key Takeaway:

AI accelerates security operations.

Experienced professionals make them effective.

The most valuable analysts are those who enhance AI tools — not compete with them.

# The Competitive Advantage



## Lower Turnover

*Trained staff who feel valued and see career growth opportunities stay longer. Every analyst who leaves takes years of tacit knowledge with them—and costs 6-9 months salary to replace and retrain.*



## Faster Response

*When experienced analysts work with properly tuned AI tools, you get both speed (AI surfaces threats) and accuracy (humans validate and respond appropriately). Mean time to detect AND mean time to respond improve simultaneously.*



## Better Threat Intel

*AI spots patterns. Experienced analysts spot changes in patterns and understand what they mean. “This looks like APT X adapting their tactics” is a judgment call AI can’t make reliably.*



## Hiring Advantage

*In a tight labor market, becoming known as an organization that invests in people—not just tools—makes you the employer of choice. You attract better talent, and they stay longer.*

**The bottom line:** AI plus under-trained operators equals expensive chaos. AI + Skilled Operators = Force Multiplication.

**The difference is training investment. And the ROI is measurable.**

SECTION 03

# How to Build & Retain an AI-Augmented

The 2026 Security Team: What to Train For, What to Hire For



## CHALLENGE THE C-SUITE MISCONCEPTION

# Myth: “AI will cut our security budget in half”

**Reality:** AI tools actually increase your need for skilled operators.

### What AI deployment actually requires:

- + **Licensing costs:** Often per-user, per-event, or per-data-volume — vendors increase pricing as you scale
- + **Integration expenses:** Custom connectors, API development, data normalization across your environment
- + **Ongoing tuning:** Rules need constant adjustment as your environment and threats evolve
- + **Skilled operators:** People who understand security fundamentals, AI capabilities, and AI limitations

Without trained humans, your AI tools become:



#### A noise generator

More alerts, higher false positive rates, burned-out analysts



#### A liability

Real threats missed while investigating AI-generated false positives



#### A sunk cost

Tools deployed but not effectively used, delivering no ROI

**The uncomfortable truth:** AI doesn't reduce your need for skilled security professionals. It changes what skills they need — and makes those skills more valuable.

# The 2026 Training Roadmap

What skills should you be developing in your team?

While the answer depends on each person's role, in 2026 every effective security professional should be building capability across three key layers.

## LAYER 01

### Non-Negotiable Fundamentals

- + Protocol-level understanding (TCP/IP, DNS, routing, encryption)
- + Security architecture principles (defense in depth, zero trust)
- + Incident response methodology
- + Compliance frameworks (GDPR, HIPAA, PCI-DSS, SOC 2)

AI can flag unusual DNS traffic—but only someone who understands DNS can recognize it as data exfiltration. AI can suggest configuration changes—but only fundamentals ensure they won't break systems, violate compliance, or create new risks.

**When core skills atrophy, teams lose the ability to troubleshoot, innovate, and catch AI's mistakes.**

## LAYER 02

### AI-Era Essential Skills

- + Python scripting and API integration
- + Cloud security (AWS, Azure, GCP + on-premises)
- + Reading AI outputs and tuning detection rules
- + Translating technical findings to business impact

Analysts who can script automated responses, tune AI tools for hybrid cloud environments, and justify breach response costs to executives multiply the value of AI investments.

**These skills turn AI from an expensive alert generator into a true force multiplier.**

## LAYER 03

### Soft Skills AI Can't Touch

- + Incident leadership under pressure
- + Business risk contextualization
- + Threat actor psychology
- + Cross-functional collaboration and mentoring

AI can detect unusual activity—but experienced analysts determine whether it's a nation-state threat or user error, shaping a \$50K fix versus a \$5M response. AI can suggest shutting down systems—but strategic leaders weigh business impact and make decisions executives can defend.

**Judgment and context—not automation—separate senior talent from entry-level roles.**

# 2026 Skill Matrix: What to Develop

| Role                                     | Technical Focus  | AI-Era Skills  | Priority   |
|--|--|--|--|
| <b>Junior Analyst<br/>(0-2 years)</b>    | <b>Master fundamentals:</b> networking, security basics, common attack patterns  | Learn to interpret AI alerts, basic scripting & automation   | Structured mentorship + hands-on SOC training    |
| <b>Mid-Level Analyst<br/>(3-5 years)</b> | <b>Specialization:</b> network, cloud, or application security depth             | Automation fluency, AI tool tuning, false positive reduction | Advanced certifications + cross-training         |
| <b>Senior/Team Lead<br/>(5+ years)</b>   | <b>Architecture &amp; strategy:</b> design secure systems, not just operate them | AI tool evaluation & procurement, team development           | Leadership development + executive communication |

## Critical Insight:

Don't hire junior analysts to do what AI does. **Hire them to learn what AI can't do**—then train them aggressively.

# Don't Eliminate Junior Roles – Invest Differently



## Pipeline Protection

Today's junior analyst is tomorrow's senior lead. Cut junior positions and you create a gap that takes years to fill.



## Economics

Hire a junior for \$60–75K + \$15K training, vs. a scarce senior at \$120–150K who still needs environment training.



## AI-Native Operators

Junior analysts who've never known work without AI embrace tools more readily than veterans.



## Signal Your Values

Being the company that develops careers—not just fills seats—attracts better talent.



INE Security's eSOC Certification accelerates the junior → mid-level transition, focusing on skills needed for AI-augmented security environments.

SECTION 04

# How to Answer the C-Suite's “Can’t AI Do This?” Question

Your Talk Track: Making the Case for Human + AI Investment



# The 3-Point Pitch to the C-Suite

Your playbook for making the case for Human + AI investment

01

## ***“AI is a force multiplier, not a replacement”***

### **The analogy that works:**

Think of AI like night vision goggles in military operations. Night vision makes soldiers dramatically more effective—they can see in conditions where enemies can't, move faster, and respond to threats earlier. But you still need trained soldiers. The goggles are useless without someone who knows tactics, can make strategic decisions, and leads the team.

Our AI security tools are the same. They give us visibility and speed we never had before. But they still need trained operators who understand security fundamentals, can validate what AI surfaces, and make judgment calls that machines can't.

**Why this works:** Executives understand force multiplication. It reframes the conversation from replacement to enhancement.





02

THE 3-POINT PITCH TO THE C-SUITE

**“Our threat landscape demands both speed AND judgement”**

**The business case:**

Here’s what’s changed in the last two years: Eighty percent of ransomware attacks now use AI. We’re seeing threat actors with only basic technical skills creating sophisticated malware by using the same AI tools we have access to.

Defense requires both AI speed to process thousands of alerts in real-time AND human judgment to determine which threats are critical, how they align with our business priorities, and what response makes sense given our risk tolerance.

Investing in AI without investing in people who can operate it effectively is like buying a Formula 1 race car and putting a student driver behind the wheel. The tool is capable—but you won’t get the performance without skilled operators.

**42%** of security teams report their AI tools are actually **increasing false positives.**

**Why this works:** Ties directly to business risk and ROI. Executives understand wasted investment.

## THE 3-POINT PITCH TO THE C-SUITE

### ***“This is a retention and recruitment advantage”***

#### **The talent market reality:**

The cybersecurity talent shortage isn't going away. There are 3.5 million unfilled security positions globally. Organizations compete for the same pool of qualified candidates.

**Here's what differentiates us:** We can be known as an organization that invests in people—not one that treats them as expendable because we have AI tools. That reputation matters.

When we hire, we attract candidates who want to grow their careers, not just fill a seat until they're automated away. When we train and develop our people, they stay longer. Every analyst who leaves takes years of knowledge about our environment with them—and costs us six to nine months of salary to replace.

Lower turnover means institutional knowledge stays with us. It means faster incident response. It means better security posture.

#### **The competitive angle:**

Our competitors are cutting training and junior roles—creating an opportunity. We can attract that talent, develop them in our environment, and build the team they wish they had while they compete for scarce, expensive senior analysts.

**Why this works:** Reframes training investment as a competitive advantage, not a cost center.



METRICS THAT PROVE AI + HUMAN TEAM DELIVER ROI

# The 4 Metrics Leadership Should Track

## Faster Detection & Response

MTTD/MTTR

AI surfaces threats faster  
Trained analysts respond faster

TARGET:

**20-30% improvement in one year**

## Alert Quality

False Positive Rate

AI tuned by experienced analysts

TARGET:

**30-40% reduction in 12 months**

## Team Stability

Analyst Retention

Developed teams stay longer  
Industry turnover: 15-20%

TARGET:

**Beat industry average by 5-10%**

## Training Impact

Time-to-Productivity

New hires become effective faster

TRACK:

**Ramp Time**

**Investigations Handled**

**Incidents Resolved**

## REAL ROI EXAMPLE

### Example Investment

Training Investment: **\$150,000**

### Results:

35% reduction in false positive investigation time  
22% improvement in MTTR  
Retained 2 senior analysts

### Total Value Generated

**\$419,000**

**279% ROI in Year One**

# Addressing Common Objectives

01

*“But vendor X says their AI can run autonomously.”*

02

*“Our competitors are cutting security staff and investing more in AI.”*

03

*“Can’t we just hire senior people and skip the junior positions?”*



# Addressing Common Objectives

01

***“But vendor X says their AI can run autonomously”***

Your response:

“They’re selling a tool, not taking responsibility for outcomes. When that autonomous AI generates a false positive that causes us to shut down a critical business system unnecessarily, the vendor isn’t liable—we are. When it misses a threat because it lacked context about our environment, we’re the ones explaining to customers why their data was compromised.

Autonomous AI is a marketing claim. **Accountable AI is a trained operator who validates machine recommendations before acting on them.**”





02

ADDRESSING COMMON OBJECTIVES

**“Our competitors are cutting security staff and investing more in AI”**

Your response:

“And in 18-24 months, they’ll be explaining to their board why their expensive AI tools aren’t delivering ROI, why their security posture has degraded, and why they can’t hire the experienced analysts they desperately need because they’re known as the company that doesn’t invest in people.

We have an opportunity to do this right:  
**Build AI-augmented capability that actually works. When their strategy fails, we’ll be positioned as the employer of choice with the team they wish they’d built.”**

## ADDRESSING COMMON OBJECTIONS

### ***“Can’t we just hire senior people and skip the junior positions”***

Your response:

“Three problems with that approach:

**First**, senior analysts are scarce and expensive. You’re competing with every other organization for the same small pool—and paying premium salaries.

**Second**, even senior hires need 6-9 months to learn our specific environment. That’s not expertise you can buy—it has to be developed.

**Third**, you’re eliminating your pipeline. Today’s senior analysts started as junior analysts somewhere. If we’re not developing our own talent, where will our future senior analysts come from?”



SECTION 05

# The Strategic Choice Facing Security Leaders in 2026



## CONCLUSION

# The Strategic Choice Facing Security Leaders in 2026

**The choice is yours:** Will 2026 be the year you fall behind, or the year you build an unstoppable defense?

### Organizations that **will struggle:**

- ✗ **Chase** full automation without ROI
- ✗ **Cut** training budgets for more AI licenses
- ✗ **Eliminate** junior positions, creating pipeline gaps
- ✗ **Watch** experienced analysts burn out or leave

### Organizations that **will dominate:**

- ✓ **Build** AI-augmented teams: machines for volume, humans for judgment
- ✓ **Invest** in both tools AND expertise
- ✓ **Develop** clear career paths to attract top talent
- ✓ **Measure** success by outcomes, not headcount reduction

## The Formula for Modern Security Operations

Modern defense requires more than powerful tools—it requires skilled operators who can interpret AI outputs and act with confidence.

⚡ AI for **speed & scale**



👤 Humans for **context & judgment**



🎓 Training to **bridge the gap**

READY?

# Build Your AI-Augmented Security Team

INE Security provides enterprise training solutions that develop the skills your teams need to thrive in an AI-powered threat landscape.



## Comprehensive technical foundation

From networking and security fundamentals to advanced architecture and threat detection

## AI-era skills development

Automation, cloud security, and the analytical capabilities needed to operate AI tools effectively



## Structured certification paths

Including our new SOC Analyst Certification, designed specifically for AI-augmented security operations



## Measurable outcomes

Track skill development, time-to-productivity, and team performance improvements



## Flexible deployment

Online, on-site, or hybrid training that fits your organization's needs

We work with security leaders who understand that AI is a tool, not a replacement – and that the organizations winning in 2026 will be those who invest in both technology and people.

Schedule a demo to see how we help organizations like yours bridge the gap between AI tools and human expertise.

→ [learn.ine.com/schedule-a-demo](https://learn.ine.com/schedule-a-demo)

# Sources & References

This guide draws on peer-reviewed research, industry reports, and real-world data to provide security leaders with evidence-based insights for building AI-augmented teams.

## Key Research Studies

### 1. Stanford Digital Economy Lab - “Canaries in the Coal Mine? Six Facts about the Recent Employment Effects of Artificial Intelligence”

Authors: Erik Brynjolfsson, Bharat Chandar, Ruyu Chen

Published: August 2025

Key finding: 13% employment decline for workers aged 22-25 in AI-exposed occupations; 6-12% growth for workers aged 30+ in same occupations

Data source: ADP payroll records representing millions of American workers

Available at: <https://digitaleconomy.stanford.edu/>

### 2. MIT Sloan Cybersecurity / Safe Security - “80% of Ransomware Attacks Now Use Artificial Intelligence”

Published: September 2025

Key finding: Analysis of 2,800 ransomware attacks found 80% powered by AI, including deepfakes, AI-generated phishing, and automated malware development

Available at: <https://mitsloan.mit.edu/>

### 3. ESET Research - “First Known AI-Powered Ransomware Uncovered”

Published: August 27, 2025

Key finding: Discovery of PromptLock malware, which uses locally accessible AI models to generate malicious scripts in real-time

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### 4. NYU Tandon School of Engineering - “Ransomware 3.0: Self-Composing and LLM-Orchestrated”

Authors: Md Raz, Meet Udeshi, Venkata Sai Charan Putrevu, Prashanth Krishnamurthy, Ramesh Karri, Farshad Khorrami

Published: August 28, 2025

Key finding: Demonstrated that AI systems can autonomously execute complete ransomware attacks at cost of approximately \$0.70 per attack using commercial AI services

Available at: [arXiv.org/abs/2508.2](https://arxiv.org/abs/2508.2)

### 5. Anthropic Threat Intelligence - “Detecting and Countering Misuse of AI: August 2025”

Published: August 2025

Key findings: Documentation of threat actors using Claude AI for large-scale extortion operations, ransomware development, and automated cyberattacks; actors with “only basic coding skills” creating sophisticated malware

Available at: <https://www.anthropic.com/news/detecting-countering-misuse-aug-2025>



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Conducted: 2025

Sample: Network and security professionals in INE's professional network

Key finding: 42% report AI tools increasing false positives; only 20% see significant reduction

Methodology: Direct polling of security practitioners

### 7. Resilience Cyber Insurance Analysis - "2025 Cyber Risk Trends"

Published: September 2025

Key findings: Social engineering (including AI-generated phishing) accounted for 57% of incurred claims and 60% of total losses in H1 2025; average ransomware claim \$1.18M (up 17% from 2024)

Available at: <https://www.helpnetsecurity.com/>

### 8. Zscaler ThreatLabz - "7 Ransomware Predictions for 2025"

Published: April 2025

Key findings: Analysis of 4.4 million ransomware attacks blocked; predictions for AI-driven social engineering and voice phishing (vishing) trends

Available at: <https://www.zscaler.com/>

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### 9. Check Point Research - "FunkSec: Alleged Top Ransomware Group Powered by AI"

Published: January 2025

Key finding: Emerging ransomware group using AI-assisted malware development, enabling inexperienced actors to rapidly produce advanced tools

Available at: <https://research.checkpoint.com/>

### 10. CrowdStrike - "Most Common AI-Powered Cyberattacks"

Published: August 2025

Overview of AI-enabled attack vectors including automated reconnaissance, customized phishing, and AI-driven ransomware

Available at: <https://www.crowdstrike.com/>

## Expert Commentary

### 11. CBS News Interview with Erik Brynjolfsson, Stanford Economist

Published: August 28, 2025

Quote context: "Large language models are trained on books, articles and written material found on the internet and elsewhere. That's the kind of book learning that a lot of people get at universities before they enter the job market, so there is a lot of overlap between these LLMs and the knowledge young people have. Older workers have a lot of tacit knowledge because they learn tricks of the trade from experience that may never be written down anywhere."

Available at: <https://www.cbsnews.com/>

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Fortune: "First-of-its-kind Stanford study says AI is starting to have a 'significant and disproportionate impact' on entry-level workers" (August 2025)

Axios: "AI is already taking jobs away from entry-level workers" (August 2025)

CNBC: "AI adoption linked to 13% decline in jobs for young U.S. workers, Stanford study reveals" (August 2025)

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## About the PPDIOO Model

The PPDIOO (Prepare, Plan, Design, Implement, Operate, Optimize) model is a Cisco-developed network lifecycle framework widely adopted across the IT and security industries. It provides a structured approach for managing network and security operations from initial planning through ongoing optimization.

This guide applies the PPDIOO framework to illustrate the division of labor between AI capabilities and human expertise across the complete security lifecycle.

## Methodology Note

This guide synthesizes publicly available research, industry reports, and proprietary survey data to provide security leaders with actionable insights. All cited research was current as of March 2026. Given the rapid evolution of AI capabilities and the threat landscape, readers should seek updated data for long-term strategic planning.

The ROI calculations and cost examples provided are illustrative and based on industry-standard analyst compensation ranges and typical organizational structures. Actual costs and returns will vary by organization size, geography, and specific circumstances.