

# Use of AI is Here to Stay: Enabling Innovation Responsibly and Securely



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### AI Agents Fail in Novel Ways, Put Businesses at Risk

Microsoft researchers identify 10 new potential pitfalls for companies that are developing or deploying agentic AI systems, with failures potentially leading to the AI becoming a malicious insider.

Robert Lemos, Contributing Writer  
May 7, 2025

5 Min Read



### Attackers Lace Fake Generative AI Tools With 'Noodlophile' Malware

Threat actors are scamming users by advertising legitimate-looking generative AI websites that, when visited, install credential-stealing malware onto the victim's computer.

Alexander Culafi, Senior News Writer, Dark Reading  
May 12, 2025

3 Min Read

ARTIFICIAL INTELLIGENCE

## All Major Gen-AI Models Vulnerable to 'Policy Puppetry' Prompt Injection Attack

A new attack technique named Policy Puppetry can break the protections of major gen-AI models to produce harmful outputs.

By Ismet Arghire  
April 25, 2025



# 5 ChatGPT Jailbreak Prompts Being Used by Cybercriminals

Published 06/17/2024

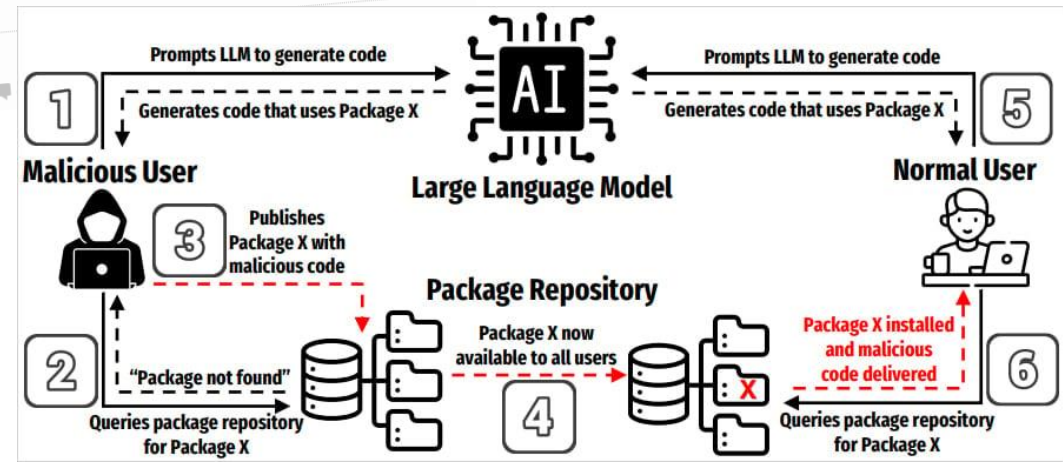
## New Reports Uncover Jailbreaks, Unsafe Code, and Data Theft Risks in Leading AI Systems

Apr 29, 2025 Ravie Lakshmanan

### AI-hallucinated code dependencies become new supply chain risk

By Bill Toulas

April 12, 2025 10:19 AM



BLOG

# RSA and the Agentic AI Bandwagon

RSA Conference 2025

## RESPONSIBLE SECURE AGENTIC AI

# RSA CONFERENCE 2025

RSAC | 2025 Conference  
San Francisco • April 28 - May 1 • Moscone Center

Many Voices. One Community.

RSAC™ 2025 Keynote

## Security in the Age of Agentic AI



Vasu Rajkhal  
Corporate Vice President  
Microsoft Security

GenAI SECURITY

Join Us Live!

## Agentic Security Open Workshop Liveness Event from RSAC 2025

April 30th, 2:00-5:00pm PST



metron security | RSAC | 2025 Conference

## Trending Now at RSAC: Agentic AI



## Autonomous TPRM with Agentic AI

Find out more at

# RSAC | 2025 Conference

San Francisco • April 28 - May 1 • Moscone Center

RSAC | 2025 Conference

## The First Agentic AI Security Champion for ASPM



ArmorCode

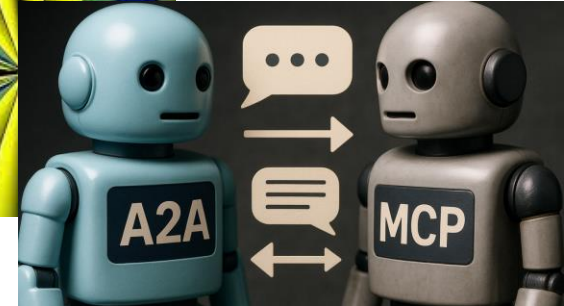
# RSAC

2025 Conference

## Agentic AI, Global Recognition, and the Cowboys of GenAI Security

RSAC Conference 2025

## The dawn of agentic AI in security operations

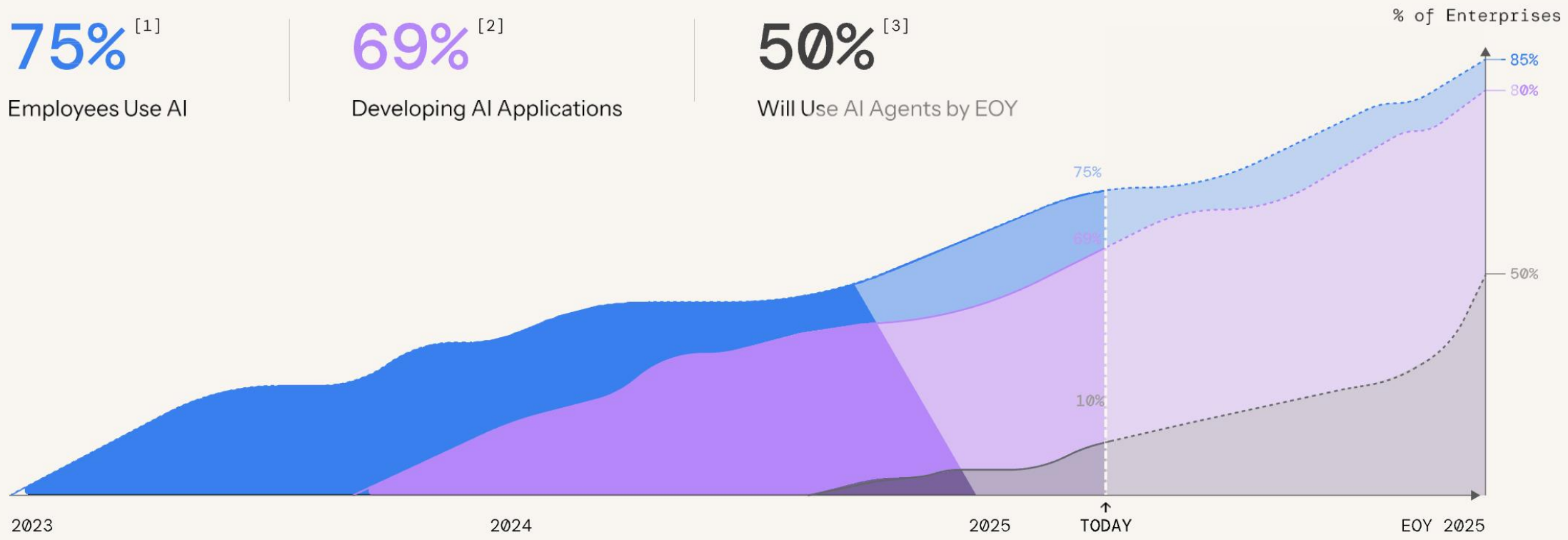


# AI is prevalent everywhere

**75%**<sup>[1]</sup>  
Employees Use AI

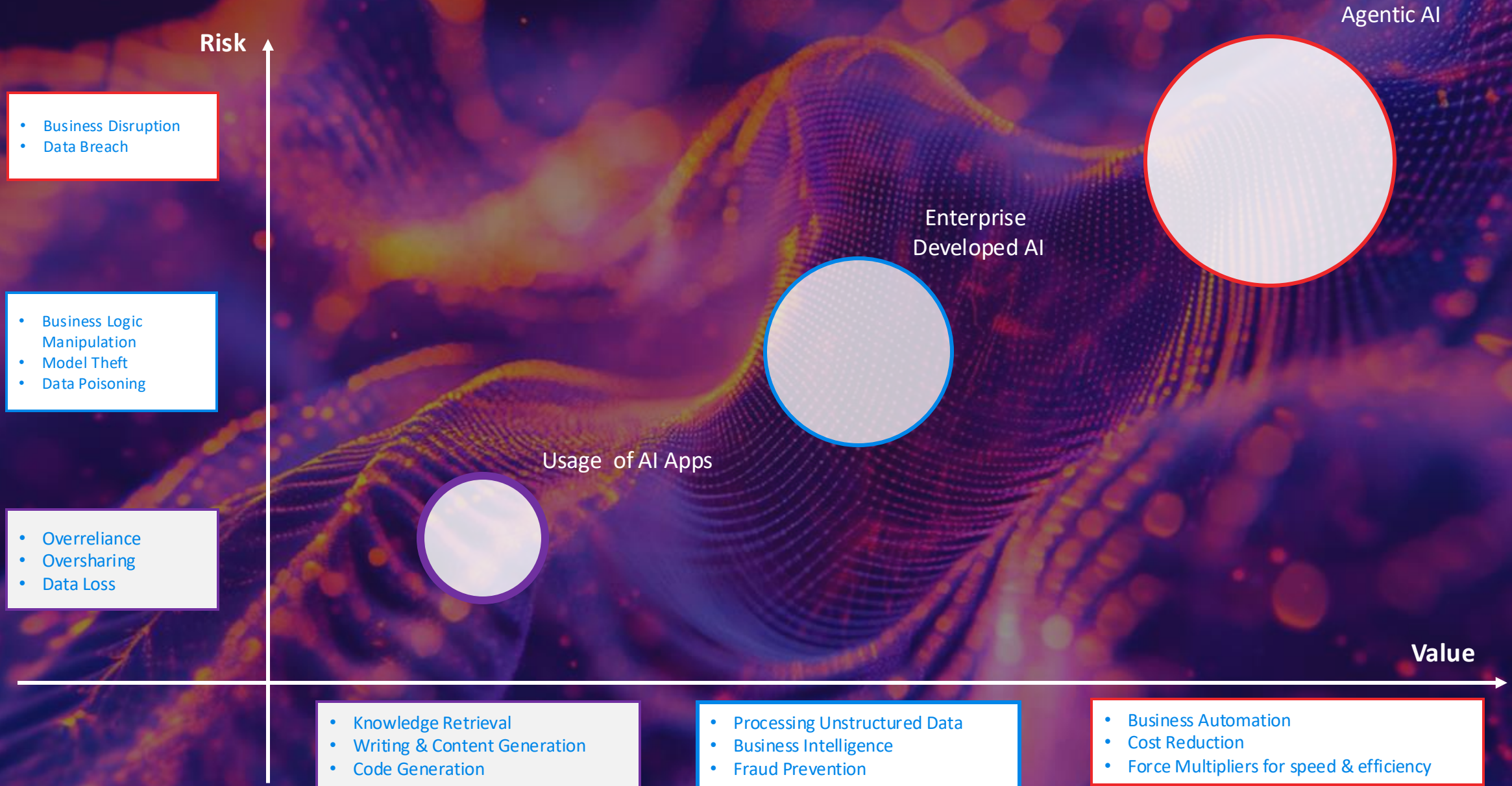
**69%**<sup>[2]</sup>  
Developing AI Applications

**50%**<sup>[3]</sup>  
Will Use AI Agents by EOY



[1] EY, EY 2024 Work Reimagined Survey  
[2] Wiz, State of AI in the Cloud 2024  
[3] Capgemini, Generative AI in organizations 2024

# AI is prevalent everywhere – Risk vs. Value



# AI Security means different things



Securing AI  
Systems



Using AI  
Securely



Defending from  
Adversarial AI



Using AI for  
Cyber

## Adversarial Use of AI

Deepfakes & Misinformation

Phishing

Malware

Social Engineering

Denial of Service

Surveillance & Espionage

AI Poisoning

API Reconnaissance

Credential Stuffing

## Governance, Risk and Compliance

Program Strategy  
Development

Policies and Procedures

Controls Gap Assessment

Compliance Measurement

Program Security  
Maturity Assessments

Awareness Training

Model Risk  
Management

Data Governance & Classification

## AI for Cyber Security

Risk Quantification & Compliance

Threat/Vulnerability Management

Security Ops (SIEM/SOAR)

Identity & Access Management

AI Code Remediation

Fraud Detection

App Detection & Response

Endpoint Detection & Response

Threat Detection & Response

## Security of AI Systems

Data Readiness, Security &  
Privacy

Model Scanning & Model Theft

Guardrails/Firewalls

API & Agentic Services

Red Teaming  
& AI-SPM

## Security of AI Usage

Usage Discovery

Data Loss Protection

3<sup>rd</sup> Party Model Risk Management

Agentic Tools &  
MCP, A2A, AGNTCY

Regulatory

Trustworthy

Responsible

Ethical

Accountable

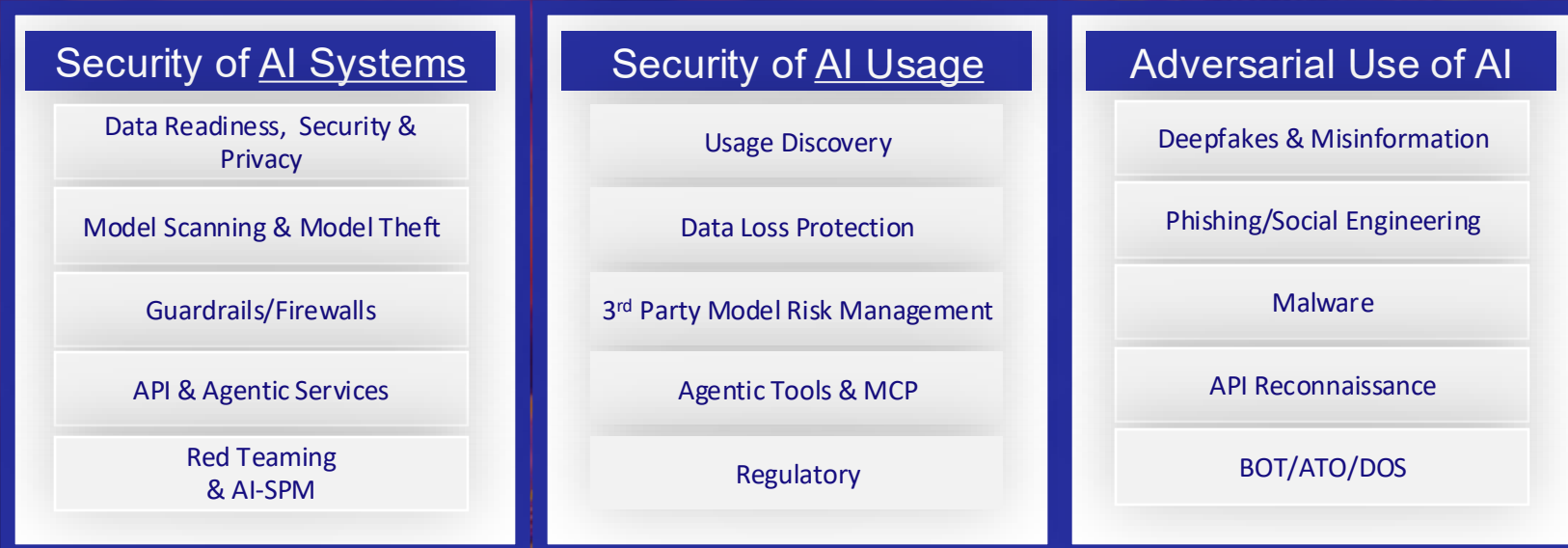
Transparent

Secure

# Current Trends in AI Security

Agentic....MCP...A2A

## Organizational Areas of Focus for AI Security



## Current Industry Trends

- Recognition as a standalone topic
- Agentic MCP vs. A2A
- Authorization for data sources
- Data security for AI Agent access
- Red Teaming of AI Systems
- AI GW vs. FW vs. Guardrails
- Shadow AI --> AI Everywhere
- Secure by Design for AI Apps & Agents

## Adversarial Use of AI

- Phishing
- Vulnerability Exploitation
- CAPTCHA Breaking AI
- Vulnerable API Reconnaissance
- AI-Generated Content including deepfakes and malicious code

## Vendor Landscape

- Startup activity is Still accelerating
- Acquisition activity increasing
- Lack of standard terminology creating confusion

## Barriers to Adoption

- Governance Delays
- Privacy Concerns
- Explainability/Auditability



**Discussions of artificial intelligence (AI) often swirl with mysticism regarding how an AI system functions.**

**The reality is far simpler:**

**“AI is a type of software system.”**

– CISA

## Average Health System Audit Finds 70 'Quiet' AI Applications, CEO Says

Published Apr 07, 2025 at 2:51 PM EDT

# Security of AI Usage

What AI tools are in use in your enterprise?

# AI impacts every corporate persona



Every role & department has a need for AI tools

The diagram features a central blue box with the text 'Every role & department has a need for AI tools'. Two large white arrows point horizontally outwards from the box. Below this box, six icons representing different corporate roles are arranged in a row. Each icon is positioned above a rounded rectangular box containing the name of the department: Legal, Finance, Sales, R&D/IT, Marketing, and HR.

Legal

Finance

Sales

R&D/IT

Marketing

HR

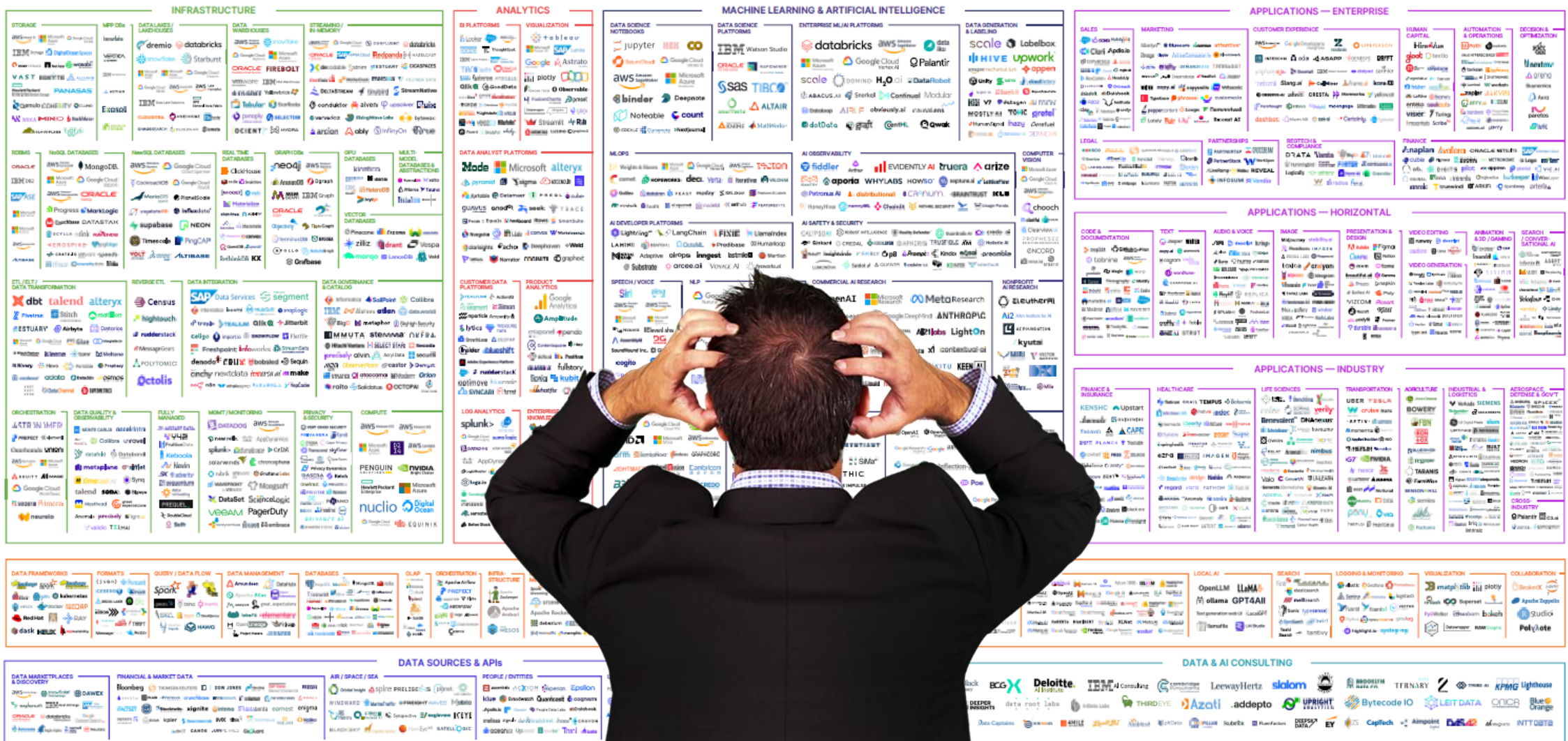
*78% of AI users are bringing their own AI tools to work*

- 2024 Work Trend Index Annual Report from Microsoft

# Everyone is using AI. AI is being applied to every industry.

## YES, you can embrace the innovation while you manage the risk

### THE 2024 MAD (MACHINE LEARNING, ARTIFICIAL INTELLIGENCE & DATA) LANDSCAPE



# AI comes in many forms



Websites



Mobile Apps



Embedded AI (SaaS)



Chatbots



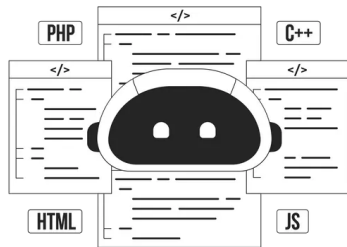
AI Assistants



Copilots



Voice Assistants



AI Coding Assistants



Applications

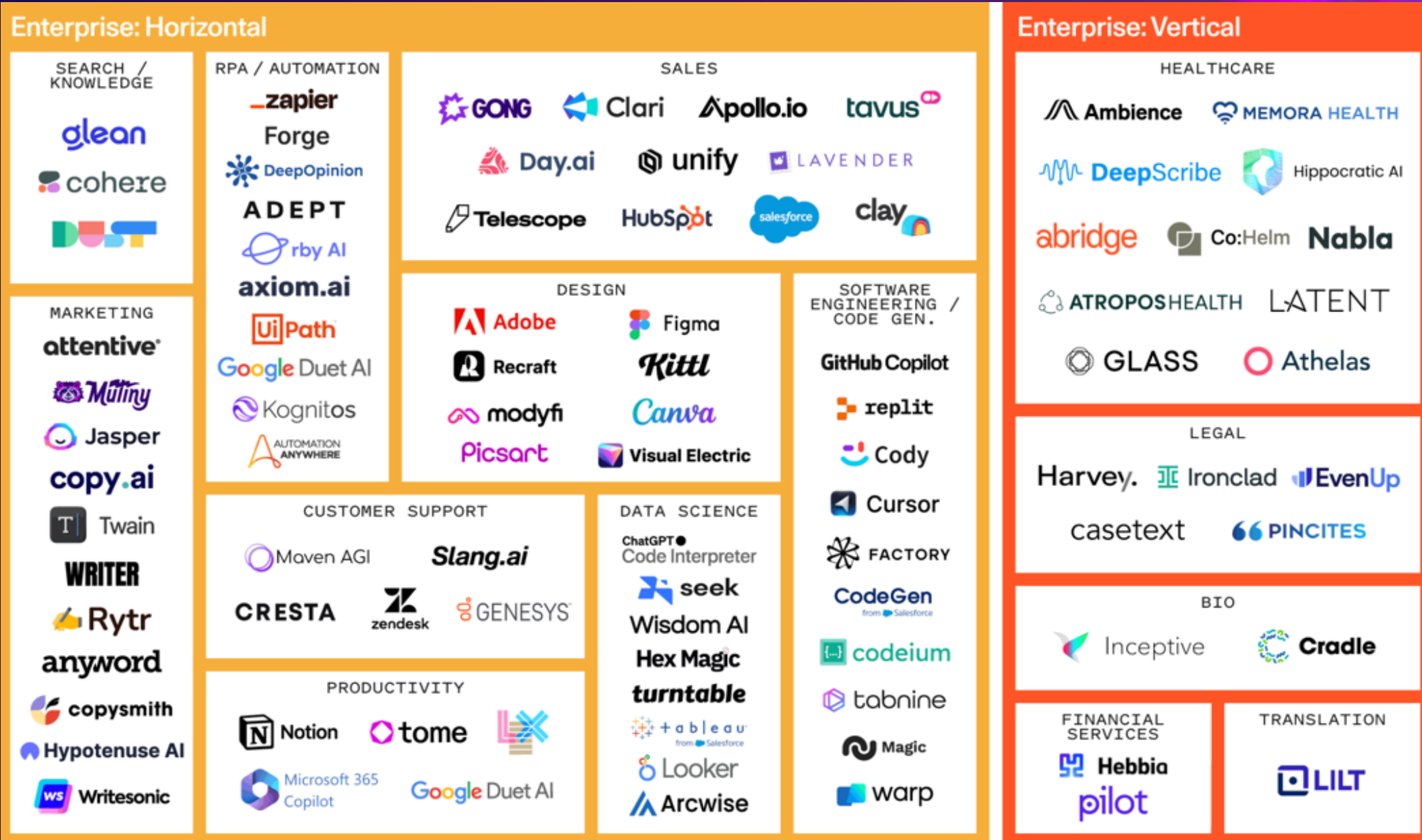


AI-enabled Hardware



Agentic AI can Autonomously: Perceive - Reason - Act To achieve desired outcomes with minimal human intervention.

# Example of Enterprise AI Tool Landscape



Source: <https://www.sequoiacap.com/article/generative-ai-act-two/>

# GenAI Usage Data from real customers (Q1, 2025)

**176k**  
**Prompts**

**8k**  
**Users**

**8.2k**  
**Files**

**254**

Average Number of Apps in Use in each enterprise

**45.4%**

Of sensitive data submissions were using accounts via personal accounts

**7%**

Of users accessed Chinese-based apps with data training enabled (DeepSeek, Manus, Ernie Bot, Qwen Chat, Baidu Chat)

Source:

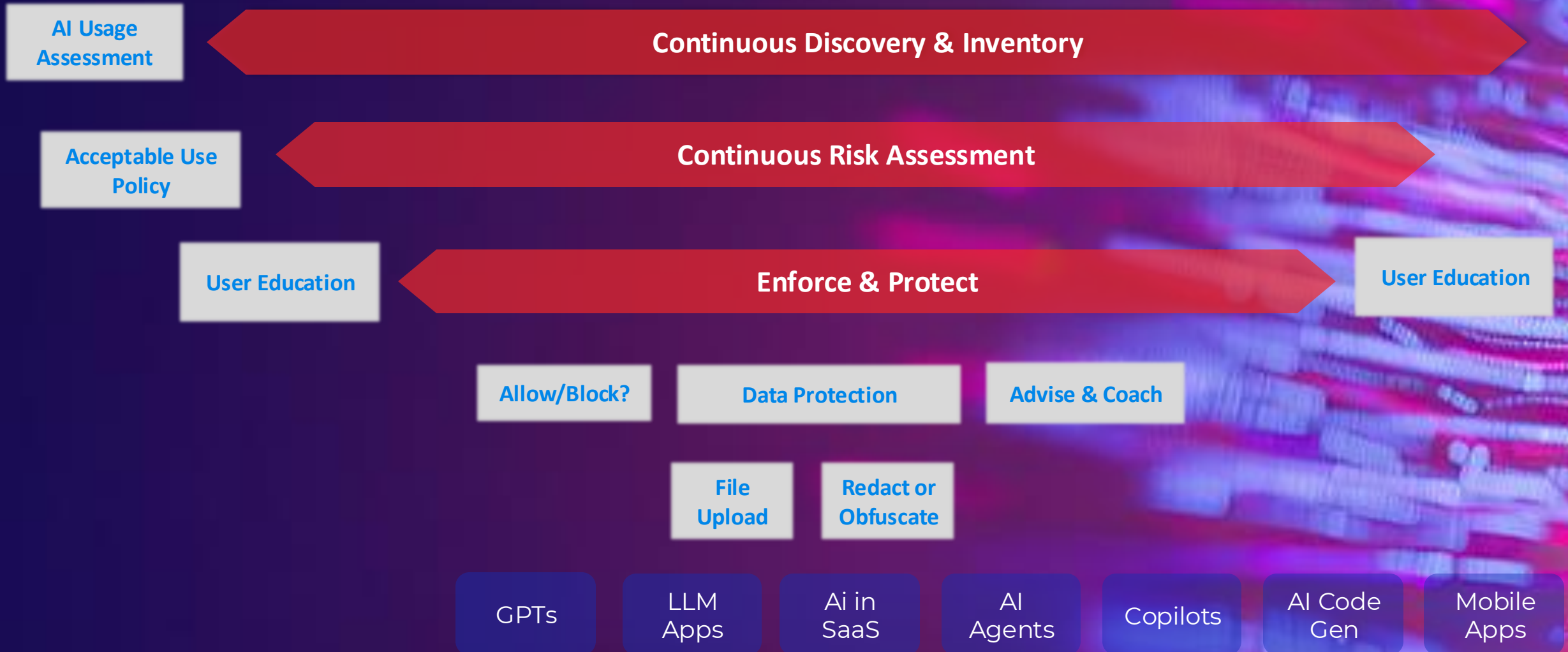
<https://www.harmonic.security/resources/the-ai-tightrope-balancing-innovation-and-exposure>

# Enabling AI Usage Securely





# Control Elements for AI Usage Security



# Tool Approaches to AI Security

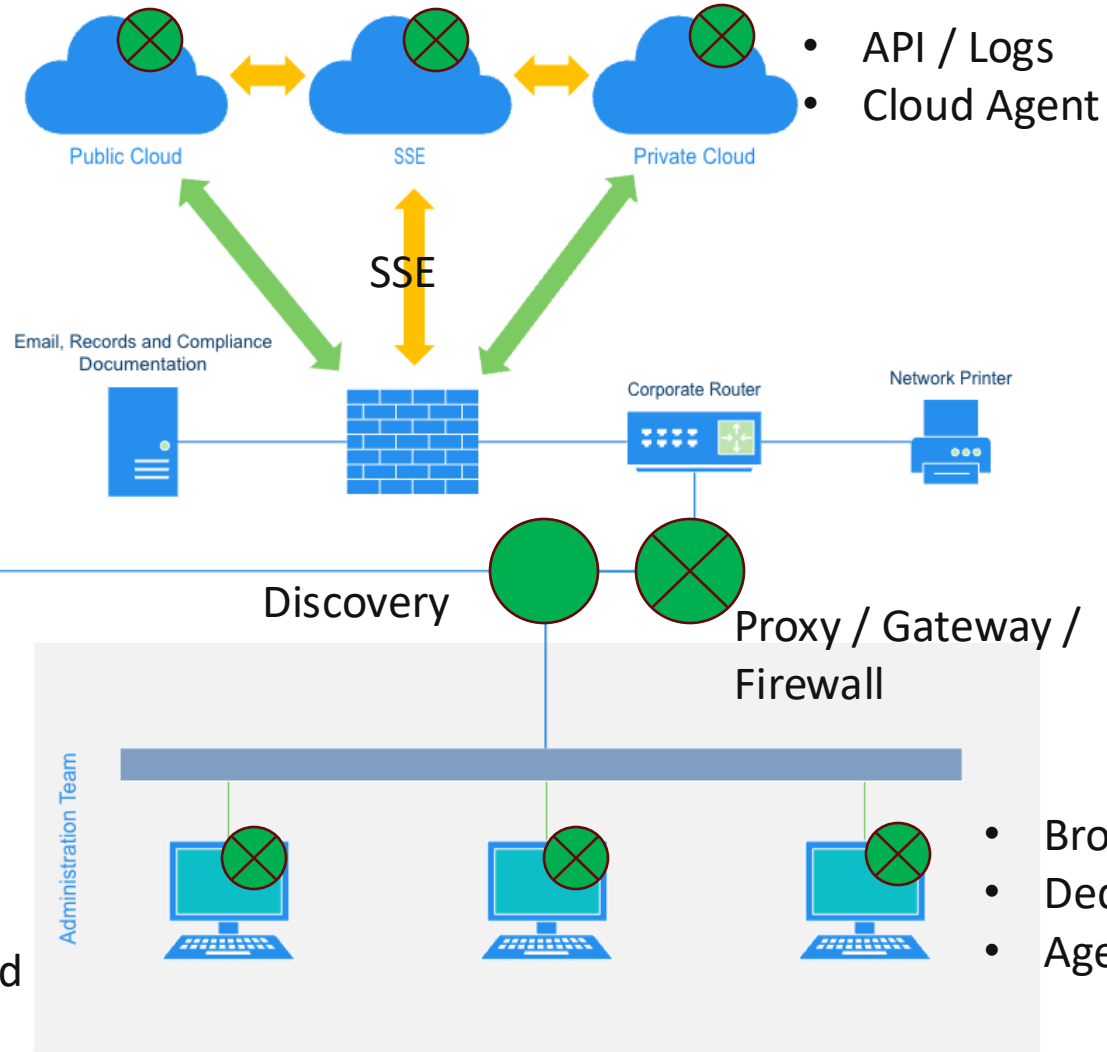
## Solution Approaches:

### Less Complex

- ✓ API Connectivity
- ✓ Browser Extension / Plug-in
- ✓ Agent / SSE Solutions
- ✓ Dedicated Browser
- ✓ Proxy / Gateway / Firewall
- ✓ Discovery
- ✓ MDM
- ✓ Combination of the above

### More Complex

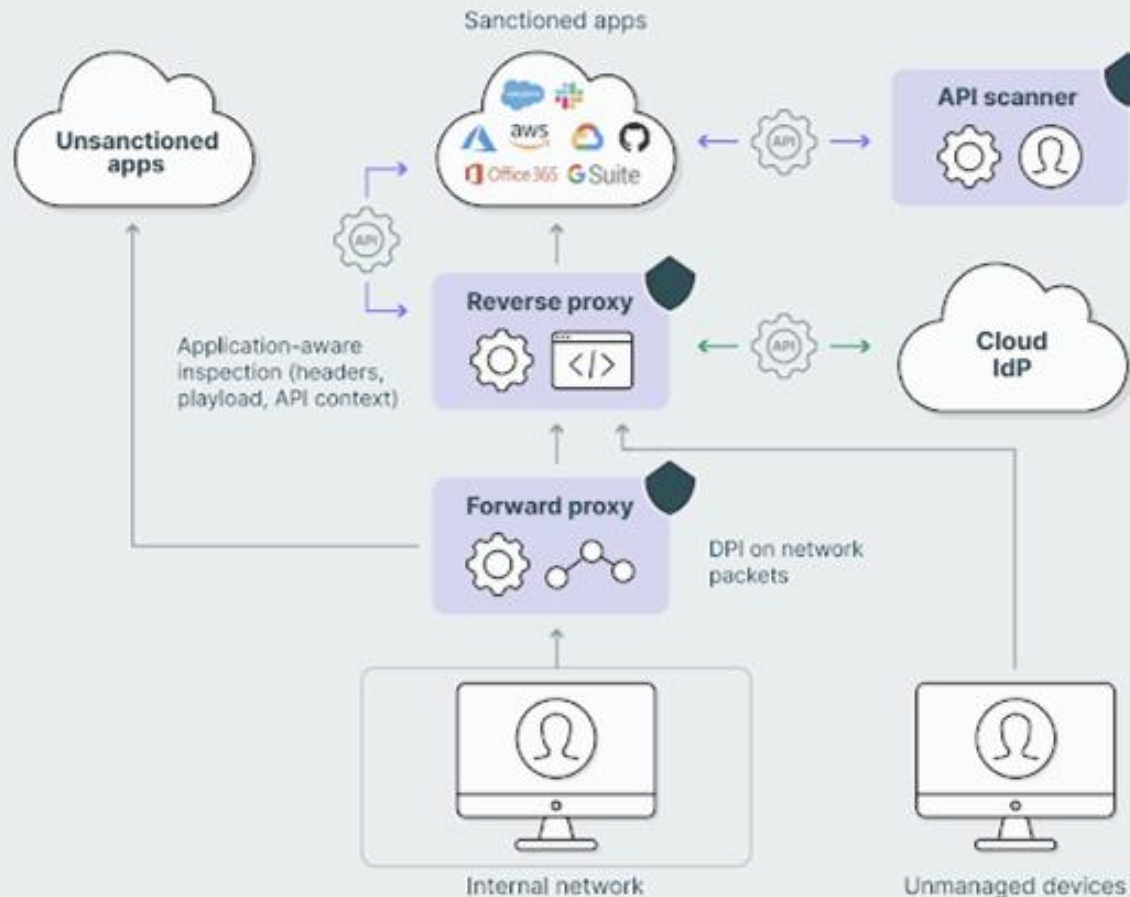
- MDM
- Dedicated Browser



# Why network visibility is not enough

**Reverse Proxies** -  
Cannot prevent data exposure on  
unsanctioned apps

**MITM Decryption** –  
Scaling Limitations,  
Performance Limits, PQE  
Impacts looming?



**API Scanning** Cannot  
prevent malicious  
activity within  
sanctioned apps

**Forward Proxies**  
Cannot provide  
access control on  
unmanaged devices

# Progressing towards fully Agentic



Rule-Based  
Automations

AI-driven  
Automations

Agentic  
Workflows

Semi-Autonomous  
Agents

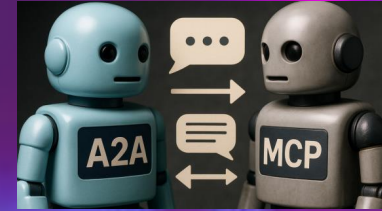
Autonomous  
Agents

Agentic AI can  
Autonomously  
**Perceive, Reason,  
and Act**  
To achieve desired  
outcomes with  
minimal human  
intervention.

# AI Agents vs. GenAI vs Agentic AI

	AI Agents	Gen AI	Agentic AI
Functionality	Automated task execution based on rules or patterns	Content Creation based on training, patterns, & predictions	Autonomous Action, Problem Solving and Decision-Making
Adaptability	LOW-Follows fixed workflows	MED-Can generate varied responses	HIGH-reasons, adapts, plans, and acts
Business Use	Automating repetitive tasks	Read and Summarize, or Generate text, images, or code	Optimize operational processes & make strategic decisions
Examples	Customer Service Bots, IT Automation	Marketing Content, Code Gen, Legal Assistants, Copilots, etc.	Autonomous Supply Chain, Cyber Analysts, Voice Agents
Limitations	Complex Reasoning	Needs accurate prompting and lacks independent action	Explainability and complete accuracy – Still need H-I-T-L

## A2A AND MCP: START OF THE AI AGENT PROTOCOL WARS?



A2A and the Model Context Protocol (MCP) are complementary standards for building robust agentic applications:

- **MCP (Model Context Protocol):** Connects agents to **tools, APIs, and resources** with structured inputs/outputs. Think of it as the way agents access their capabilities.
- **A2A (Agent2Agent Protocol):** Facilitates **dynamic, multimodal communication between different agents** as peers. It's how agents collaborate, delegate, and manage shared tasks.

# MCP

## Model Context Protocol

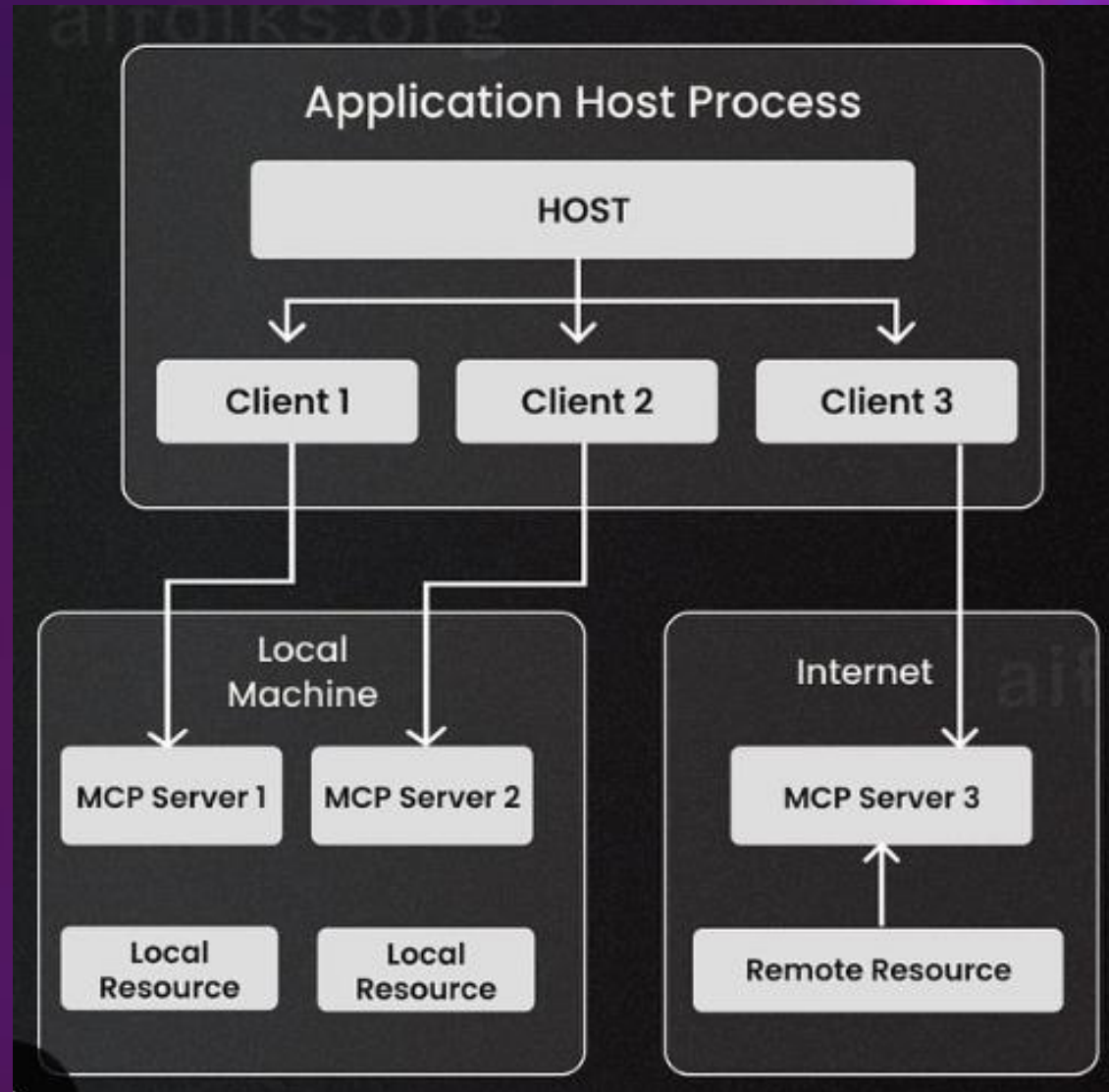
Defines a standardised interface for supplying structured, real-time context to **large language models**.

### CORE FUNCTIONALITIES

MCP lets you pull in external resources like files, database rows, or API responses - right into the prompt or working memory.

Rather than stuffing your prompt with every possible detail, MCP helps assemble just the context that matters.

MCP also lets models call tools dynamically.



# A2A

## Agent2Agent Protocol

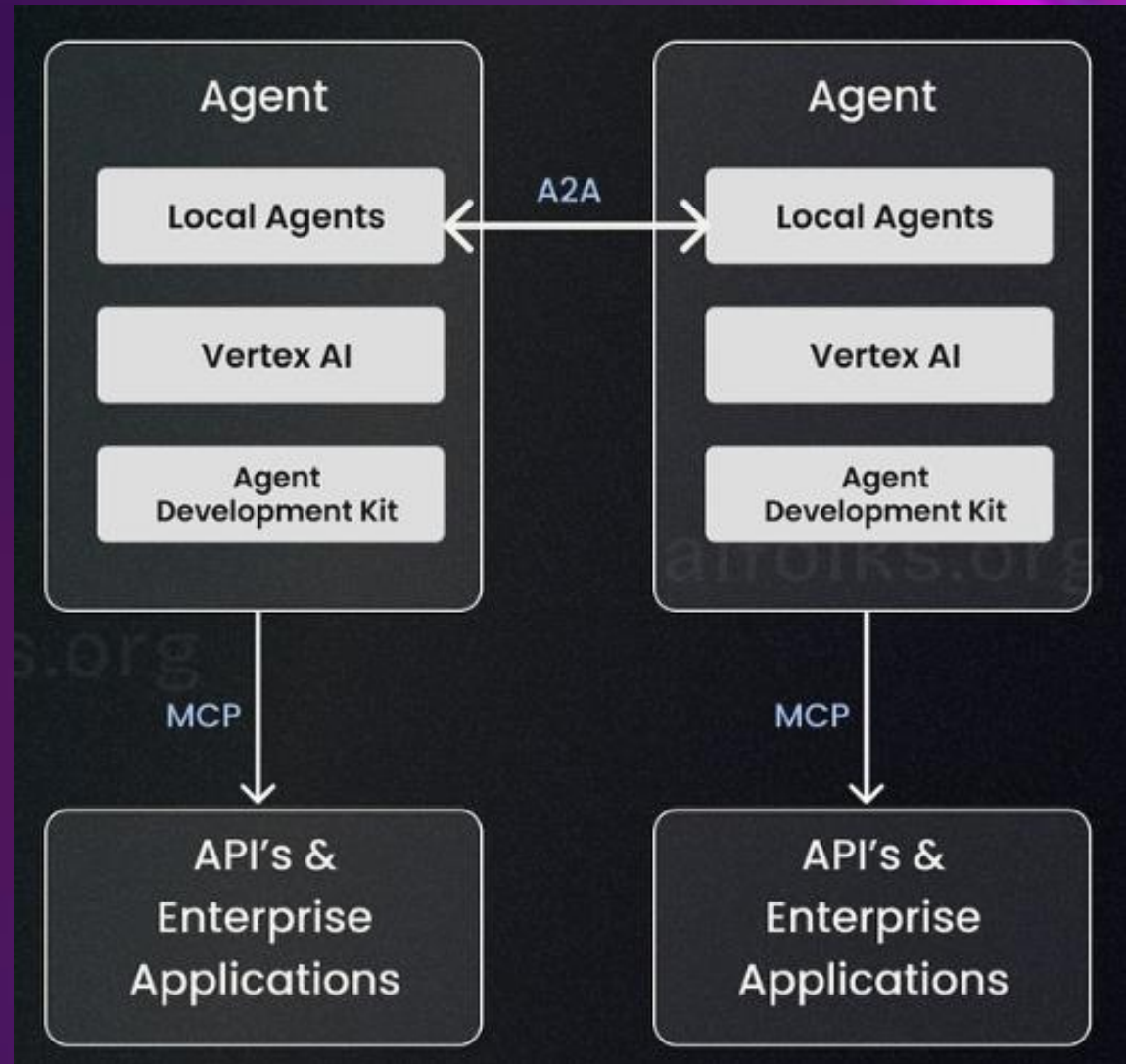
Enable structured communication & coordination between **AI agents** operating in the environment.

### CORE FUNCTIONALITIES

Facilitates message passing and task delegation between agents to coordinate actions.

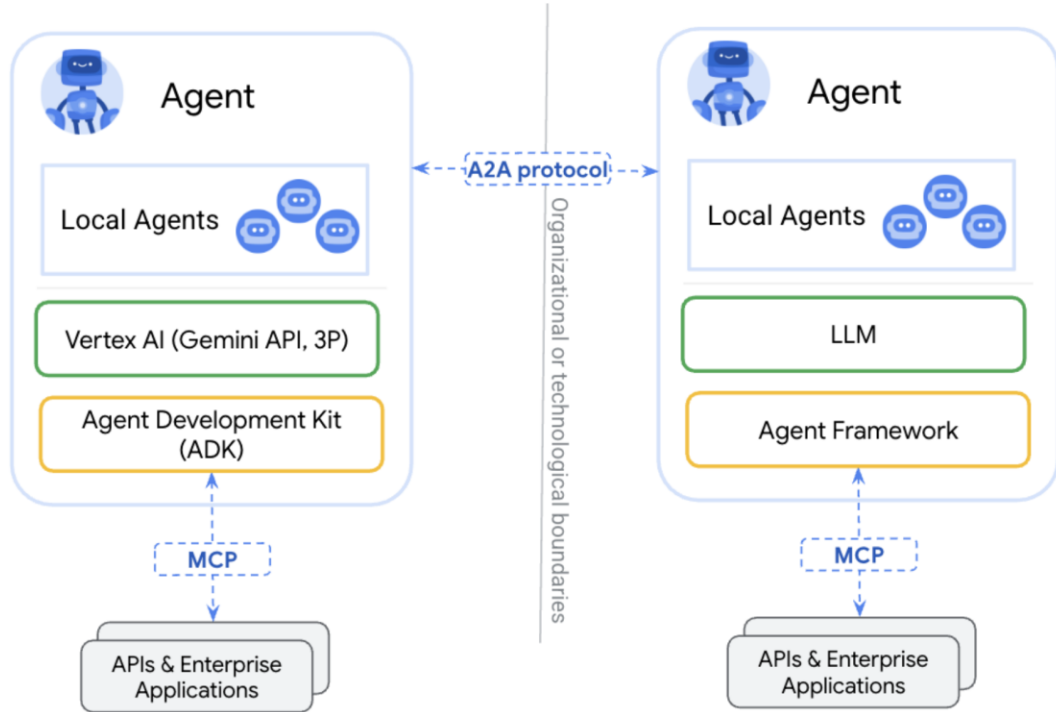
Enables agents to share observations, goals, or partial outputs for collective decision-making.

Supports synchronization of agent states across distributed environments.

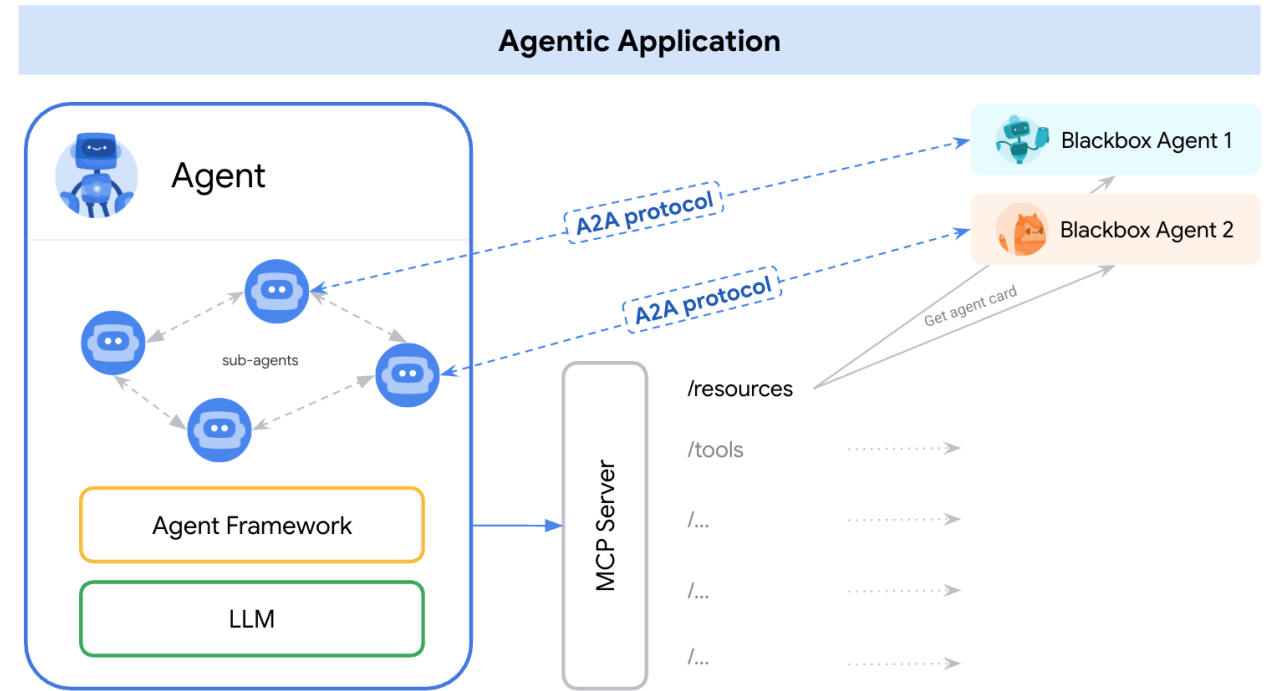




# A2A and MCP (more complementary than competitive)



<https://google.github.io/A2A/#why-a2a-matters>



<https://google.github.io/A2A/topics/a2a-and-mcp/>

# Early discoveries in MCP vulnerabilities

(Injected prompt) → Agent → MCP Server (Unauthorized Server access) → drant, supabase

**Effect** Moderate

## Command Injection

Using prompts with embedded meaning to trigger unauthorized MCP actions by the agents.

Agent → MCP Server → slack, drant, stride

Since Data is transferred in segments  
Connection remains open for a long time

**Effect** Moderate

## Server-Sent Events Problem

SSE workflow creates latency and security issue due to constant opening of line during transfers

Client → User Data, Chat Password → MCP Server → WhatsApp Server, Malicious Server

**Effect** Severe

## Server Data Takeover

A compromised tool server can take over other servers data and passwords.

Attacker → API Keys, Private Data → MCP Server → slack, Malicious Tool

(Gives Access to)

**Effect** Severe

## Tool Poisoning

Embedding malicious tools codes in MCP to manipulate their actions for a given task

MCP Server → slack, Malicious server

overrides the access of other servers

@rakeshgohel01

**Effect** Severe

## Privilege Escalation

Malicious tools can override or intercept calls made to a trusted tools that you use.

Agent → MCP Server → aws, kagi, Notion

(tampering)  
Persistent context

**Effect** Small

## Persistent context

MCP records your context through out your sessions, this can lead to context tampering

# Wrap-Up

# Security of AI: Defining Product Categories

## AI Security Governance, Risk & Compliance

Software used to manage/govern enterprise AI assets and usage, assess & manage risk, and/or map controls to compliance requirements

### AI Discovery & Inventory

Software tools that provide automated discovery and inventory tracking for AI artifacts, 3<sup>rd</sup> Party AI Tools and 3<sup>rd</sup> Party AI embedded in existing SaaS. Many existing tools provide some capabilities here & can be used to begin and identify the need to add better controls)

### Security of AI Usage

Security of Usage refers to any 3<sup>rd</sup> party AI usage and covers a broad area of security control types that can play a partial role in securing AI usage. Product areas include that offer security features for AI usage include:

**SASE/SSE**

**AI Focused (Browser Inserted)**

**AI Focused ( Network Inserted)**

**Enterprise Browser/Browser Extensions**

**Next Gen DLP**

**Digital Workforce Security (Security of AI Agents)**

**Code Development Focused**

**SSPM (SaaS Security Posture Management)**

Each Category has strengths and weaknesses and a complete program for using AI securely should start with a discovery exercise to gain a clear understanding of the current AI tools that are being used across the organization.

### Security of AI Systems

#### 1. Secure the Data

#### 2. Secure the Model

#### 3. Secure the Usage of the App

##### Readiness & Risk Assessment for AI

Is Data security ready for AI?

**Data Discovery, Classification, and Labeling** – Discovery of all the data that might be used in AI systems; including structured and unstructured data source, Classification of all data types (e.g., PII, financial, IP), and Labeling of all data for appropriate use or protection

##### Data Access Governance

Ensures **only the right people, processes, and AI models** can access certain data and that models can only provide inferences to authorized data.

##### Privacy Enhancing Techniques (PETs)

Even if the AI needs sensitive data, privacy can still be protected.

Options include:

- **Data masking and tokenization**
- **Stochastic Randomization**
- **Homomorphic Encryption**

##### Supply Chain (Model Scanning, AI-BOM AI-SPM)

This area is analogous with traditional Software Supply Chain security and covers the risks to code and artifacts in the AI/ML development lifecycle, including malicious code analysis, AI Bill-of-Materials, and AI Security Posture Monitoring, Source Dependencies, and provenance of artifacts from source to prompt .

##### Red Teaming/Vulnerability Scanning

Systematically probing both:

- **Models** that serve as central components for the applications, and
- **Systems and Data** used throughout the lifecycle of the application:

From model development and training, through application staging pipelines, and continuously in production runtime environments. Combines traditional adversarial testing with AI-specific methodologies, addressing risks like: **Prompt injection, Toxic outputs, Model extraction, Bias, Knowledge risks and Hallucinations.**

##### AI Runtime Security

**Protecting AI systems while they are running.**

AI applications can be **tricked into leaking sensitive info, generate harmful or biased content, and/or take risky actions** based on bad inputs

**AI Firewall**-filtering inputs and outputs to block:

- Malicious prompts (like jailbreaks)
- Inappropriate or dangerous responses
- Unauthorized data access

**AI Guardrails** -rules and limits that keep the AI on track. They guide the AI to:

- Stick to **approved topics**
- Avoid **risky actions**
- Always follow **company policies**

Combined, the **AI Firewall** and **Guardrails** help enterprises ensure their AI behaves **safely, ethically, and within bounds** AI Runtime tools should have ability to filter both input and responses.

# Security of AI: WWT Market Landscape (v05122025)

## AI Security Governance, Risk & Compliance

## AI Discovery & Inventory

<b>1st Party Apps</b> 		<b>3rd Party Apps</b> 	<b>3P-SaaS</b> 
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## Security of AI Usage

**SASE/SSE**

## Security of AI Systems

1. Secure the Data	2. Secure the Model	3. Secure the Usage of the App
<b>Risk Assessment</b> 	<b>Supply Chain (Model Scanning, AI-BOM AI-SPM)</b> 	<b>AI Runtime Security</b> 
<b>Discovery, Classification, Labeling</b> 	<b>Red Teaming/Vulnerability Scanning</b> 	
<b>Data Access</b> 		
<b>Privacy Enhancing Techniques</b> 		

**GenAI Focused – (Browser Insertion)**  
**Prompt:**

**GenAI Focused – (Network MITM)**

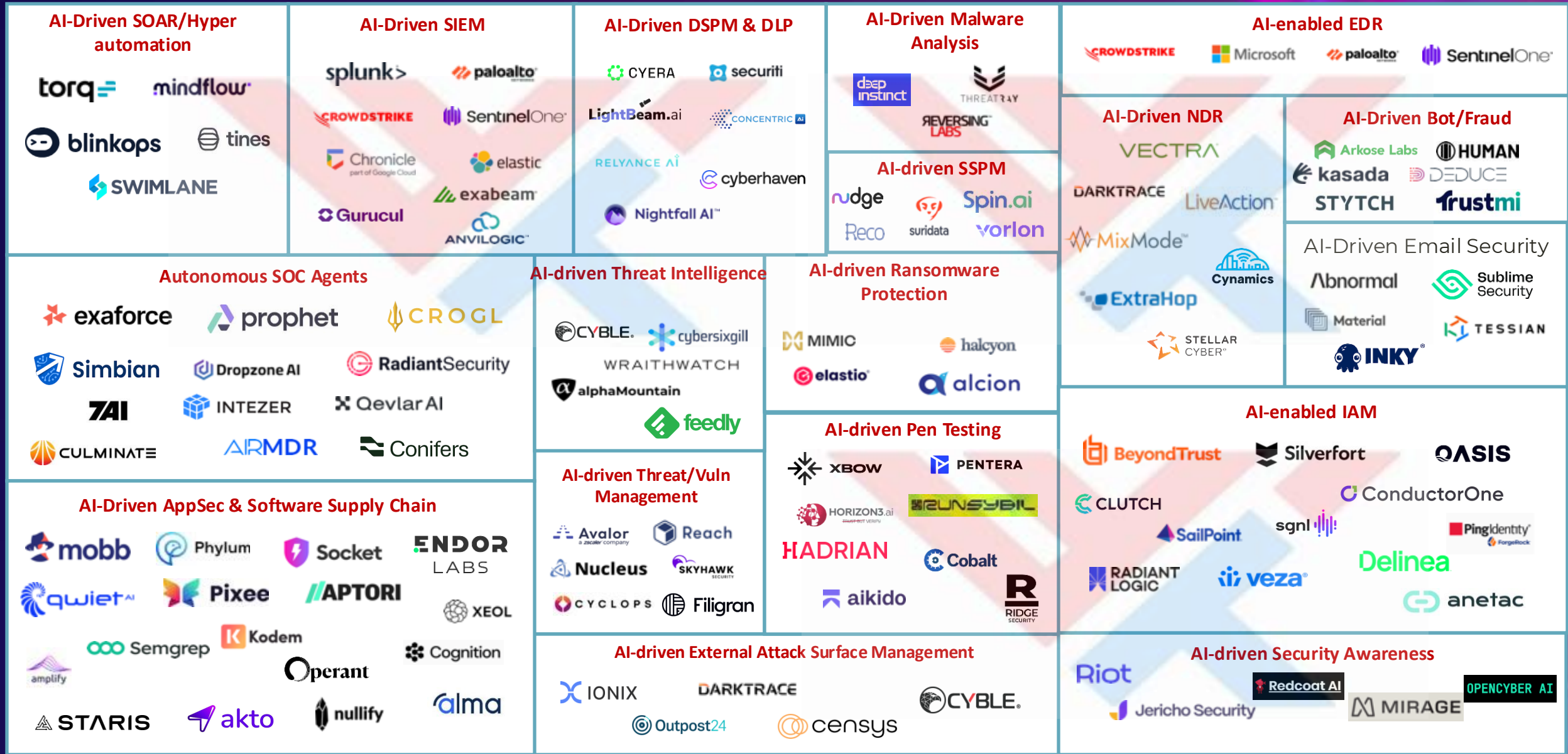
**Enterprise Browser/Browser Extension**

**Next-Gen AI-Focused DLP**

**Digital Workforce (Security of Agents)**

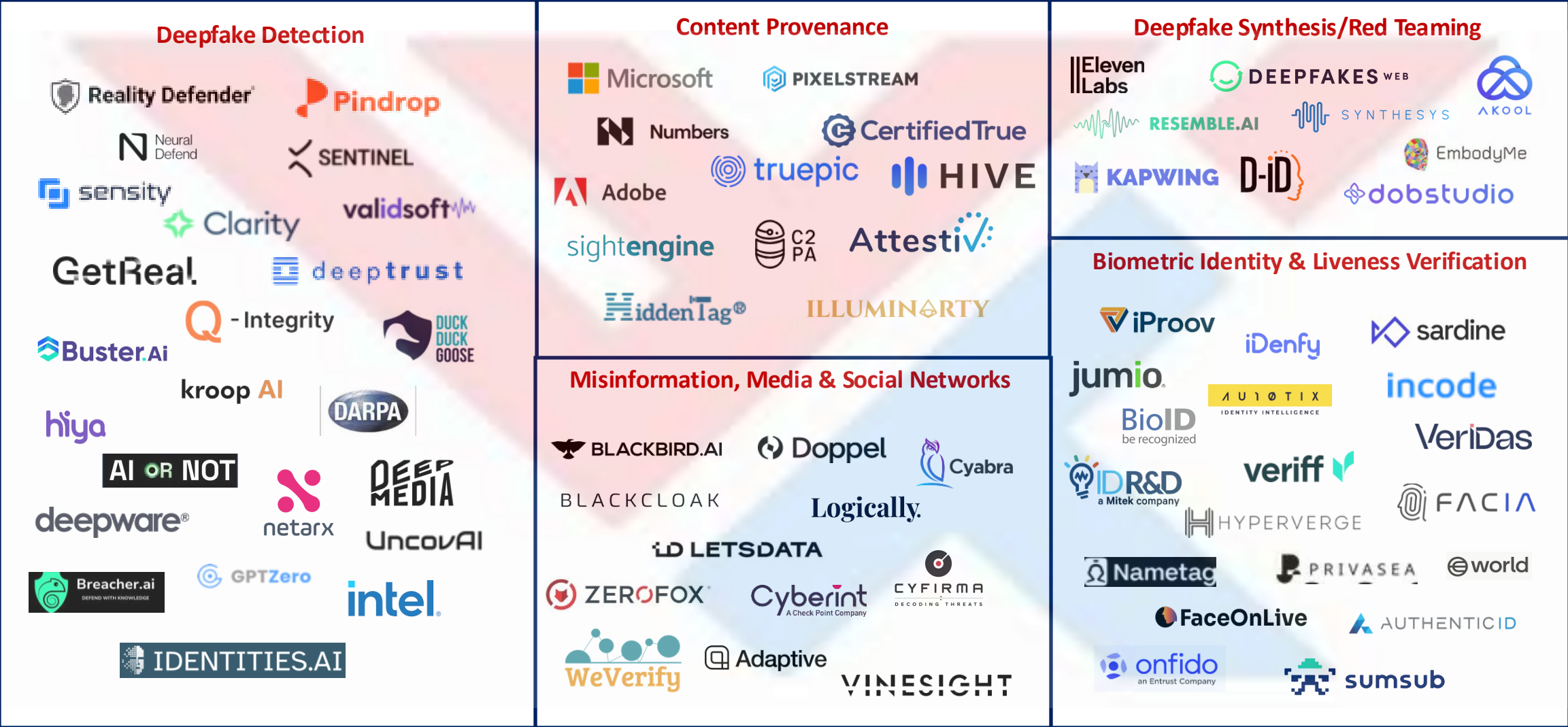
**Code Development Assistants**  
**Prompt:**

# AI for Cyber Security: WWT Market Landscape (v0512.2025)



# Security from Adversarial AI (Deepfake & Misinformation):

## WWT Market Landscape (v05.13.2025.76)



Thanks for Attending



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