



2025

STATE OF DATA SECURITY REPORT

HEALTHCARE & LIFE SCIENCES

QUANTIFYING AI'S IMPACT ON DATA RISK

KEY FINDINGS

Security measures are struggling to keep up with AI.

AI adoption continues to surge: According to Deloitte, 75% of healthcare companies are experimenting with or planning to scale Generative AI.

We reviewed 98 healthcare organizations to understand how healthcare data is at risk in the AI era.



95% of organizations have exposed sensitive cloud data.

AI can surface critical data that's not locked down. Exposed AI training data is vulnerable to breaches and model poisoning.

90% have stale but enabled ghost users.

These accounts stay active, giving access to applications and data. Ghost users can allow attackers to perform reconnaissance or steal data without triggering alarms.

64% have unverified apps, including unsanctioned AI.

Shadow AI raises the risk of exposure and data breaches. Attackers can exploit unverified apps to exfiltrate data.

90% of organizations have sensitive data dangerously exposed to AI tools.

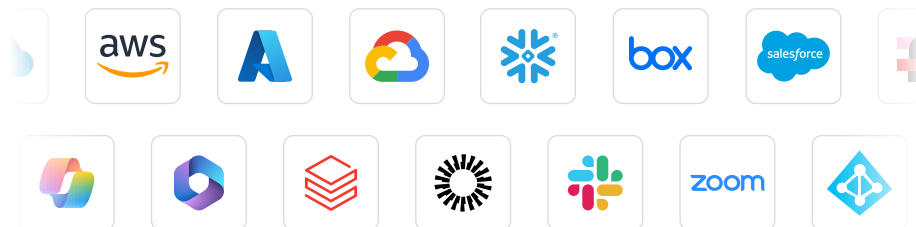
ABOUT THIS REPORT

Methodology

Varonis analyzed data security risk across healthcare, biotech, and pharmaceutical organizations:

- 98 organizations
- Nearly 1 billion cloud resources (objects, files, reports, attachments, etc.)
- More than 2 petabytes of data — approximately 2 terabytes per organization

IaaS and SaaS applications and services reviewed:



Countries included:

United States, Canada, Germany, France, Belgium, Netherlands, Sweden, Switzerland, U.K., Spain, Italy, Brazil, Australia, India, and more

Firmographics

This report includes data analysis across industries:

- Healthcare
- Biotech
- Pharma

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SHADOW AI:

A HIDDEN THREAT TO DATA SECURITY IN HEALTHCARE



Shadow AI — unauthorized generative AI applications — presents a major risk to data security. These tools can circumvent corporate governance and IT oversight, increasing the chances of data leaks.

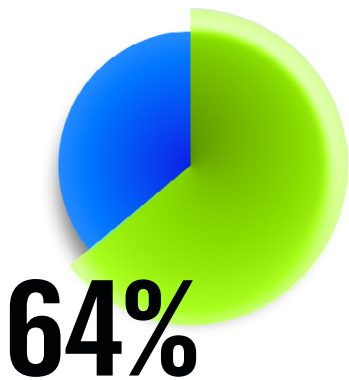
Employees can accidentally leak sensitive or confidential data using shadow AI. Organizations may be fined if these apps fail to comply with HIPAA, GDPR, and other regulations.

Stale apps can remain risky after a user's last login. Stale OAuth applications, which haven't been used or accessed for weeks or months, still have permission to access sensitive data.

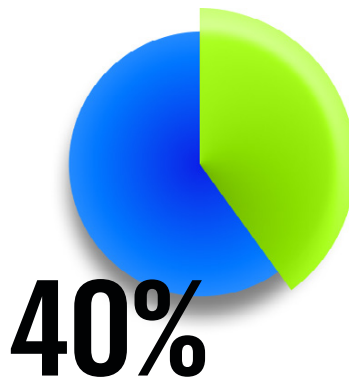
In 2025, millions downloaded DeepSeek.

Employees who downloaded DeepSeek put their company's data at risk — an **unsecured DeepSeek database** exposed a million lines of log streams containing chat history, secret keys, backend details, and other highly sensitive information, highlighting the critical need for organizations to scrutinize and secure all AI apps.

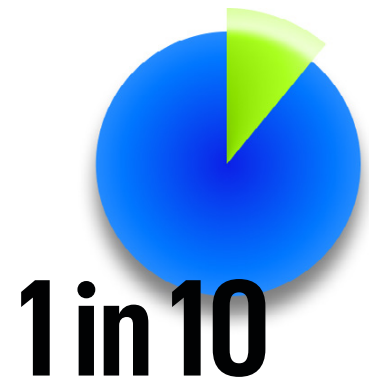
DESPITE THE RISKS, OUR ANALYSIS FOUND:



of organizations have employees using unsanctioned apps, including shadow AI



of employees use high-risk OAuth apps



unverified high-risk OAuth apps in the average organization are also stale

SPOTLIGHT:

MICROSOFT 365 COPILOT DATA RISK

While unauthorized apps can increase the risk of data breaches, even approved apps can jeopardize sensitive information.

Microsoft 365 Copilot integrates deeply with an organization's data to boost productivity. But it also introduces security risks. Copilot can surface all accessible data, potentially exposing critical information.

Exposed data is just one Copilot prompt away. Consider a hypothetical healthcare organization with 2,000 employees: if each employee enters 20 prompts every day, five days a week, the company has over 200,000 chances for sensitive data to be exposed every week.



WE FOUND:

90%

of organizations have sensitive files exposed to all employees via M365 Copilot

48,000+

folders with sensitive data are exposed to all employees on average

5%

of organizations have sensitive files open to the internet

Labeling files — ensuring data is accurately categorized, managed, and protected from AI misuse — is essential for data governance.

Labeling helps enforce controls like data loss prevention and encryption. It also supports regulatory compliance requirements by demonstrating that data is managed according to legal standards and policies. To succeed, labeling should be automated and ongoing.

Only 1 out of 5 healthcare organizations label their files.

SPOTLIGHT:

SALESFORCE AGENTFORCE DATA RISK

In the healthcare, biotech, and pharmaceutical sectors, Salesforce organizations can hold a significant amount of sensitive data — information on patient health and care, clinical trial data, proprietary research, and more.

Admins typically oversee the CRM, handling everything from user management to security settings. However, this often means IT and security teams aren't always in the loop. This can lead to security gaps.

Salesforce Agentforce can increase the risk if data is exposed. Agents might reveal unprotected sensitive information through natural language prompts, leading to unauthorized access and misuse.

We discovered many users and service accounts that can easily access all Salesforce data through an Agentforce agent and export that information. Granting users permission to download all Salesforce data could lead to a major security breach.

36%

of organizations have at least one
account that can export all data

100

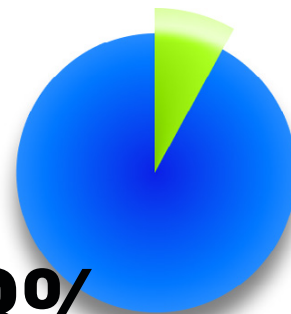
accounts on average can export all
Salesforce data

Varonis' **2025 State of Data Security Report** uncovered an unexpectedly high number of users with strong administrative permissions. Allowing many users to install third-party apps, set field-level security, and manipulate permissions increases the risk of exposing critical data in Salesforce and raises the potential for lateral movement.

A typical mid-size enterprise with 1,000 employees has 110 users authorized to create, grant permissions, and customize applications. If an APT compromises just one Salesforce account, they can grant access to other attackers or sell highly privileged credentials on the dark web.

Many users also have permission to create public links. Open links can inadvertently allow AI applications, like ChatGPT, to crawl your organization's internal data to answer. Prompts and give unauthorized individuals access to sensitive company and customer data.

Sharing public links is easy when users have permission. If one of those users becomes compromised, a threat actor can create and use public links to steal sensitive data.



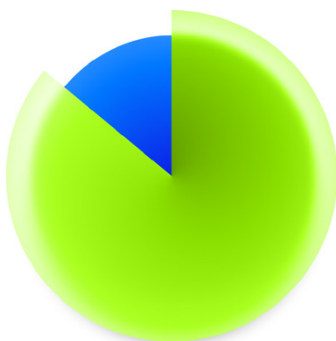
8%

of users can grant permissions and install custom applications

WE FOUND THAT AN ALARMING NUMBER OF USERS CAN CREATE SHARING LINKS:

86%

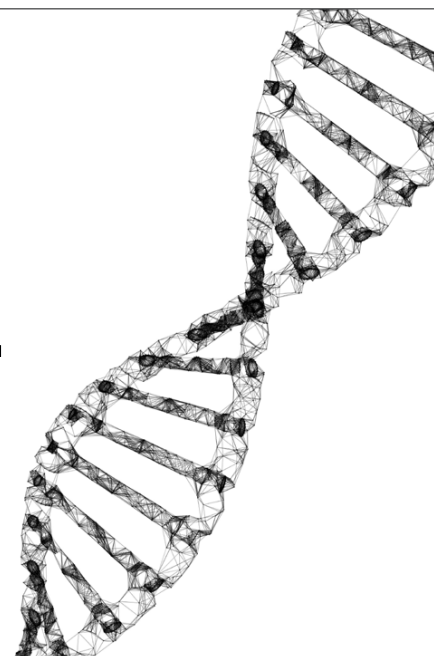
of companies allow users to create public links



of those companies,

2,800+

users can create public links



MODEL POISONING AND RISKS TO AI TRAINING DATA

As more organizations develop AI processes and products, the data used to train them is at risk from breaches and attacks. With training data in multiple clouds or IaaS, managing permissions across all environments can be challenging.

Models trained on sensitive data can inadvertently expose confidential information. Exposed training data can lead to unauthorized access and misuse, compromising the integrity and security of AI systems.

With vast volumes of sensitive information and scores of users to manage, cloud data security can be challenging at scale. Our analysis showed that cloud data, including unmasked data and exposed buckets, is largely overexposed and under-protected.

WE FOUND:

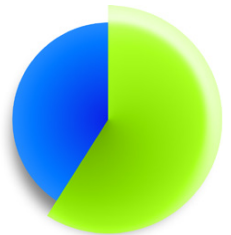
95%

of organizations have exposed sensitive data in the cloud



59%

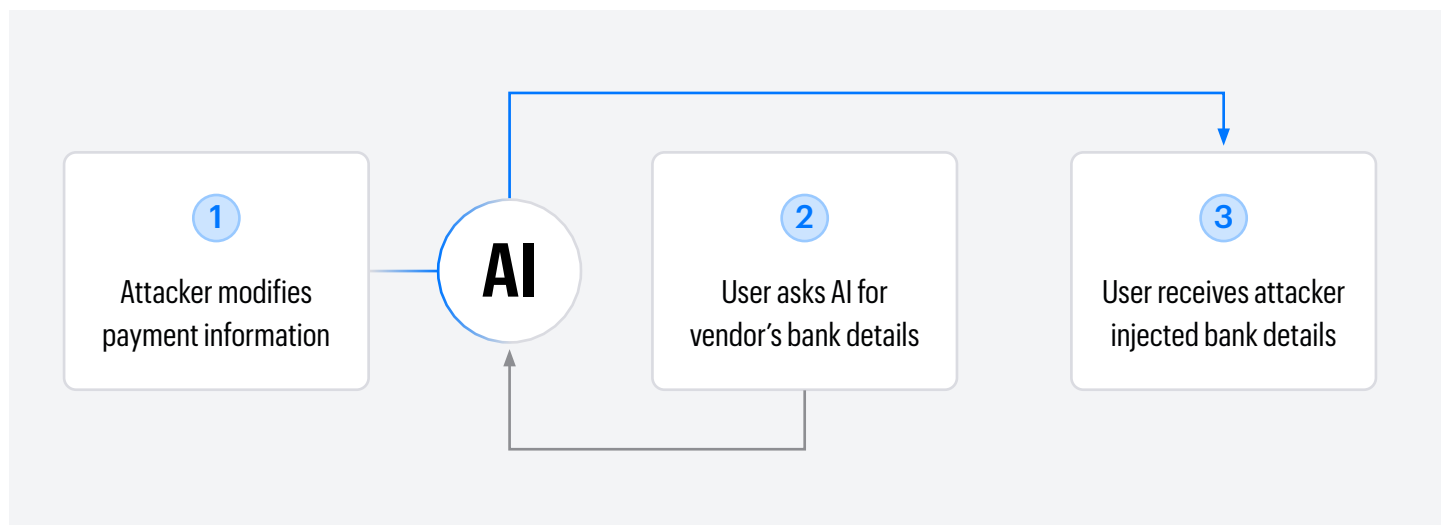
of companies have cloud data exposed to anonymous users



Data encryption protects LLM training data by converting it into a format accessible only with a decryption key, keeping sensitive information confidential. It also helps prevent unauthorized access, breaches, and leaks throughout the training process.

Another major risk is model poisoning, where attackers manipulate training data to corrupt an AI model's performance. This happens when a malicious user gains access to the model's cloud resources, such as containers, storage accounts, and databases, and can write to or modify those resources without triggering alarms.

Model poisoning can lead to dangerous outcomes. Imagine an attacker modifying payment information details used in a model. Unaware, the company deploys the model. When users ask for the vendor's bank details, they are provided with the bank details that the attacker injected.



Model poisoning can also happen accidentally. Imagine an analyst at a healthcare company that inadvertently trains a model on bad data.

Without accurate data, doctors and healthcare staff can make the wrong decisions for patient health. If model poisoning is not detected early, it would be tough to detect it by monitoring the model's performance.

GHOST USERS:

DORMANT ACCOUNTS, ACTIVE RISK

Once inside your environment, attackers aim to land and expand. Stale user accounts, or “ghost users,” are active accounts of former employees or contractors. These ghost users can remain enabled, providing access to applications and data and potentially allowing attackers to conduct reconnaissance or exfiltrate data without triggering alarms.

Managing active identities is crucial, especially with the deployment of AI agents. If just one identity is compromised, bad actors can move laterally, use AI to find sensitive information, or plant malicious software.

Regular audits and robust identity management practices ensure that only needed identities remain active and each identity has appropriate access.

100%

of organizations had enabled ghost users

51,000

inactive external identities in the average organization

14

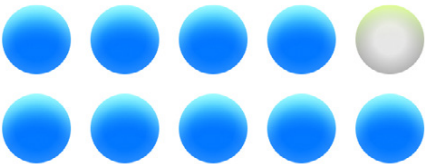
stale users with admin roles in the average organization

>160,000

stale access permissions in the average organization

Insiders with legitimate access can inadvertently or maliciously expose sensitive data. Strengthening identity management protocols can help mitigate these risks by ensuring only authorized users can access critical systems and data.

WE FOUND:



9 of 10

healthcare organizations have sensitive data exposed to **every** user



CLOUD IDENTITIES:

SPRAWLING AND COMPLEX

Groups, memberships, and roles can build up over time. A single user can gather dozens of roles and group memberships. Meanwhile, understaffed IT and security teams often struggle to revoke unused or unnecessary memberships when users change roles or leave.

Our [2025 State of Data Security Report](#) shows organizations have fallen behind in managing permissions and securing identities, particularly non-human identities like APIs and service accounts. Poor credential management and excessive privileges lead to unauthorized access and data breaches.

Cloud identity and entitlement management can involve thousands of permissions and roles, requiring constant work to stay ahead of risk.

AWS alone has over 18,000 possible identity and access management permissions to manage.

OUR ANALYSIS OF ORGANIZATIONS USING AWS SHOWED:

20,224 managed policies in the average AWS account

3,087 over-permissive policies in the average AWS account

MISSING MFA:

A CRITICAL SECURITY GAP

Unenforced MFA simplifies attackers' efforts, leaving accounts vulnerable to password spraying, credential stuffing, and phishing attacks. Without MFA, unauthorized account access becomes easier, leading to potential data breaches. MFA is effective only when enabled and enforced.

The largest breach of 2024, which resulted in the [loss of 190 million patient records](#), was attributed to missing MFA. As a result, [proposed changes](#) to HIPAA currently include MFA as a non-negotiable requirement.

WE FOUND:

34%

have users with passwords that never expire

1,000+

enabled users with expired passwords

5

global admins have passwords that never expire



Without appropriate authentication controls, attackers can simply log in with stolen credentials and gain access to AI tools to find the most valuable data in your organization quickly.

The campaign targeting Snowflake in 2024 is a perfect example of why every company should enforce MFA by default.

Hackers **used stolen credentials** and leveraged missing MFA to access multiple customer environments before exposing customer data on the dark web. Investigations showed that the attackers accessed Snowflake accounts via compromised credentials from a third-party contractor.



MFA alone is not a silver bullet.

Varonis Threat Labs showed how attackers can bypass MFA using stolen browser cookies. By using custom-made malicious browser extensions and automation scripts, attackers can extract and reuse authentication cookies to impersonate users without needing credentials, while keeping persistence.

The proof-of-concept, called **“Cookie Bite”** grants unauthorized access to M365 apps for further recon and privilege escalation. The research shows these techniques also apply to many other cloud platforms and services.

AI IS A CATALYST FOR DATA RISK

The healthcare, biotech, and pharma sectors are embracing AI to improve outcomes, streamline operations, and personalize care. But without rigorous data governance, AI becomes a liability.

AI presents new dangers to data, and organizations must take proactive steps to secure their critical information.

1. Reduce your blast radius.

Assume that breaches will occur. Proactively decrease the damage an attacker can do with just one stolen identity. Aim to minimize your blast radius by continuously monitoring data and remediating issues, locking down permissions and access to prevent identity-based attacks, and monitoring AI copilots, chatbots, and agents to prevent exploitation and misuse.

2. Data security is AI security. Data powers AI.

To prevent AI risks and AI-related data breaches, continuously monitor your data, automate access governance and posture management, and employ proactive threat detection. A holistic approach to data security keeps AI secure.

3. Use AI for good.

AI is a powerful tool for defenders. IT and security teams can harness AI and automation to:

- Accurately identify, classify, and label sensitive data across large datasets, ensuring no critical information is exposed or at risk
- Remediate vulnerabilities and serve as a frontline SOC analyst
- Catch malicious insiders and abnormal behavior that indicates an attack



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Key findings report

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