



# Better Models, More Efficient AI

RiskGraphs uses AI-enabled knowledge graphs, metadata, governed sandboxes to turn models into actionable insight.



**DECISION INTELLIGENCE**

**ACTIONABLE INSIGHT**

AI Enabled Knowledge Graph

**KNOWLEDGE ENGINEERING**

Native-AI Built Context Sensitive Language Models

**RISK & MATURITY SCORING**

Capacity, Appetite, Tolerance

**OPERATING MODELS**

KPIs KRIs

**INDUSTRY STANDARD PLATFORMS**

Data Sources



# Embed AI-native patterns early



## Capture rich metadata

Machine-readable semantics support AI discovery and safe consumption.

Descriptions, constraints, and and policy hints belong in the the catalog and semantic layer. layer.



## Integrate AI-driven governance

Automated quality monitoring and anomaly detection strengthen control.

Pipeline enforcement helps flag drift, privacy issues, and violations before training.



## Provide governed sandboxes

Feature stores should be built on product contracts.

Training and inference remain traceable and policy compliant across the lifecycle.



# Why the Stack Scales more efficiently



## Safe discovery

Metadata and semantics help AI find the right assets faster.



## Earlier controls

Governance shifts left by catching drift and privacy issues before training.



## Traceable execution

Product contracts and sandboxes increase lineage and policy clarity.



## Actionable insight

KPIs, KRIs, and maturity scores connect models to decisions.

The core idea is simple: do not bolt AI and agents onto fragmented platforms later. Build an AI-native foundation where data products, policies, and decision context are already connected.



# Knowledge graph requirements



Graph property	Minimal requirement	Why it matters
Nodes	Data products, domain entities	Represent decentralized data assets.
Edges	Relationships, lineage, dependencies	Show flows, dependencies, and data-use paths.
Properties	Metadata, ownership, data quality, schema details	Add context to nodes and relationships.
Labels	Domain categorization, product types	Enable domain-based decentralized management.
Directed edges	Data-flow direction, impact analysis	Support lineage and usage tracking.



# Why engineering discipline lowers AI energy use



## Right-size the model

UNESCO highlighted UCL research showing that task-specific smaller models can cut energy use by up to 90% without sacrificing accuracy.

The same report notes concise prompts and responses can reduce energy use by more than 50%, while model compression can save up to 44%.



## Engineer the data foundation

Structured metadata, product contracts, and semantic routing reduce unnecessary compute by helping the system select the right data and model for each task.

That supports an operating model where efficiency comes from design choices, not only from only from more hardware.



# Well-engineered data lowers cyber exposure



## Provenance and integrity controls

The joint NSA, CISA, FBI and partner guidance says securing AI data with provenance tracking, cryptographic signatures, checksums, secure storage, and zero-trust infrastructure helps protect against tampering, poisoning, and compromised model behavior.

It also recommends append-only signed provenance databases, dataset verification at ingestion, and aborting training runs when certificate checks fail.



## NIST link to lower AI security risk

NIST's Generative AI Profile highlights information security risks such as prompt injection, data poisoning, leakage of proprietary data, and attacks on training data, code, and model weights.

That makes metadata discipline, lineage, controlled integration of third-party components, and pre-deployment verification available to enable critical design choices for lowering cyber threat exposure.



# Better-engineered data improves decisions



## Better quality, better operating insight

IBM reports that mature data quality and governance frameworks make organizations more likely to move AI use cases from pilot to production and sustain value over time.

IBM also notes that poor data quality causes downstream inefficiencies, weak analytics, degraded AI performance, and measurable financial losses.



## Connected models raise enterprise intelligence

A 2025 arXiv paper on LLM-powered knowledge graphs found that unifying enterprise silos into an activity-centric graph improves expertise discovery, task management, and data-driven decision-making.

That aligns with the RiskGraphs view that semantic context and connected data products produce more actionable operational intelligence.



# Data Foundations Justify Continuous Investment



Recent research connects governance, data quality, and technical debt reduction with stronger AI value realization and operational funding confidence.

## Value indicators

AI ROI improvement from reducing legacy technical debt 29%



Operational efficiency gain from governance frameworks 33%



3-year ROI for data access governance solutions 175%



## Investment case

When data models are well engineered, organizations can show measurable value through better efficiency, fewer incidents, and improved AI ROI.

That makes it easier to defend follow-on funding and scale AI initiatives beyond pilot mode.

Sources: IBM, *How to maximize AI ROI in 2026*; Immuta, *Quantifying the ROI of Data Governance*.



# Ecosystem view

AI-native partners and certified resources

RiskGraphs can extend its operating model through a focused ecosystem spanning graph intelligence, accelerated AI infrastructure, modern data platforms, and enterprise collaboration.

Databricks



Neo4J

NVIDIA

Snowflake

AI-native partners

Neo4j AuraDB and NVIDIA DGX add graph-native context and scalable AI infrastructure.

Certified resources

Databricks, Snowflake, and Microsoft broaden implementation, analytics, governance, and collaboration options.

Strategic fit

This ecosystem supports governed AI delivery from data foundation to executive decision support.



# Better models need better foundations

AI efficiency comes from AI-native patterns, governed data products, and semantic context that connects model activity to operating decisions and Risk Intelligence