

AI-Ready Data

A governance checklist for enterprise teams: quality, lineage, access, privacy and retention

DATA INFRASTRUCTURE & TOOLS

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EXECUTIVE SUMMARY

AI magnifies the state of your data

Machine learning models and generative AI assistants are only as reliable as the data they are trained on, fine-tuned with or allowed to retrieve. Data problems that were tolerable in a monthly report — duplicates, stale records, unclear ownership, overly broad permissions — become far more visible when an AI system repeats them confidently to thousands of users, or exposes a document to someone who should never have seen it.

“AI-ready” data is therefore not a technology purchase but a governance outcome: data that is fit for its intended purpose, well understood, traceable, appropriately protected and lawfully used. This whitepaper offers a practical checklist for enterprise data, AI and security teams. It draws on the **NIST AI Risk Management Framework (AI RMF 1.0)**, published in January 2023, and on the core principles of data protection law, including the EU **General Data Protection Regulation (GDPR)** and India’s **Digital Personal Data Protection Act, 2023**.

Key takeaways

- Define “fit for purpose” per AI use case; there is no single quality bar for all data.
- Lineage and provenance must be recorded before data reaches a model, not reconstructed afterwards.
- AI systems must respect the same access controls as the source data, including for retrieval.
- Privacy obligations — lawful basis, purpose limitation, minimisation and retention — apply to AI use too.
- A data catalogue with clear owners is the practical backbone of AI data governance.

FRAMEWORK

Anchoring data governance in the NIST AI RMF

The NIST AI RMF is a voluntary, sector-agnostic framework for managing risks to individuals, organisations and society from AI systems. Its core is organised into four functions. **Govern** is cross-cutting and informs the other three. Each function has clear implications for data teams.

Function	Purpose in the AI RMF	What it means for data governance
Govern	Cultivate a culture of risk management; set policies, roles, accountability and processes.	Named data owners and stewards; policies for acceptable data use in AI; approval process for new data sources.
Map	Establish context: intended purpose, users, impacts and the risks that follow.	Document which data each AI system uses, where it came from, who it describes and the legal basis for use.
Measure	Analyse, assess and track identified risks using quantitative and qualitative methods.	Measure data quality, representativeness and drift; test outputs for leakage of sensitive information.
Manage	Prioritise and act on risks; allocate resources; monitor and respond over time.	Remediate data issues, restrict or withdraw data sources, manage incidents and retire data when no longer needed.

NIST also publishes a companion AI RMF Playbook with suggested actions for each function, and in 2024 released a Generative AI Profile (NIST AI 600-1) that applies the framework to risks specific to generative systems. Both are useful references when turning the checklist below into internal standards.

QUALITY

Data quality: fit for the intended purpose

Data quality is usually described through a set of dimensions. The exact list varies between organisations, but the dimensions below are widely used. For each AI use case, agree which dimensions matter most, how they will be measured and what threshold is acceptable.

Dimension	Question to ask	Why it matters for AI
Accuracy	Does the data correctly describe the real-world entity or event?	Models learn and repeat errors at scale.
Completeness	Are required records and fields present?	Gaps can bias models towards well-documented groups or cases.
Consistency	Do values agree across systems and over time?	Conflicting sources produce contradictory answers.
Timeliness	Is the data current enough for the decision being made?	Stale documents in retrieval systems lead to outdated advice.
Validity	Does the data conform to agreed formats, types and rules?	Invalid values break pipelines or distort features.
Uniqueness	Is each entity recorded once?	Duplicates over-weight some records in training and retrieval.

- **Representativeness:** beyond the classic dimensions, check whether training data reflects the population and conditions in which the model will be used.
- **Unstructured content:** for documents used in retrieval-augmented generation, quality also means removing superseded versions, drafts and duplicates, and keeping clear authorship and dates.
- **Automated checks:** embed validation rules in data pipelines so that failures are caught before data is published for AI use.

TRACEABILITY

Lineage, provenance and the data catalogue

When a model produces a surprising or harmful output, teams need to answer quickly: which data was involved, where did it come from, and what transformations were applied? Lineage records the path of data through systems; provenance records its origin, ownership and terms of use.

- Register every dataset used for training, fine-tuning, evaluation or retrieval in a **data catalogue**, with owner, steward, description, classification and approved uses.
- Capture lineage automatically from pipelines and transformation tools wherever possible; manual documentation quickly goes out of date.
- Record the source and licence or contractual terms of third-party and publicly obtained data.
- Version datasets used for training and evaluation so that results can be reproduced and audited.
- Link each AI system in your AI inventory to the catalogue entries for the data it depends on.

SECURITY

Access control for AI systems

AI systems create new paths to data. A chatbot connected to a document store can surface any file the connector can read, not just files the user is entitled to see. Access control must therefore extend to training pipelines, vector databases, prompts and outputs.

- **Permission-aware retrieval:** retrieval systems should enforce the source system's permissions for the requesting user at query time, rather than indexing everything under one service account.
- **Least privilege for pipelines:** training and feature pipelines should use dedicated identities with access only to approved datasets.
- **Clean up before connecting:** review overshared sites, folders and drives before connecting them to AI assistants; AI will find content that was "hidden" only by obscurity.
- **Protect derived data:** embeddings, feature stores, fine-tuned models and logs of prompts and outputs can all contain sensitive information and need classification and access control of their own.
- **Monitor use:** log access to sensitive datasets and AI interactions in line with privacy requirements, and review them for misuse.

PRIVACY

Privacy and lawful use

Using personal data to build or operate AI systems is processing like any other, and existing data protection law applies. The principles in Article 5 of the GDPR provide a useful checklist even outside the EU: lawfulness, fairness and transparency; purpose limitation; data minimisation; accuracy; storage limitation; integrity and confidentiality; and accountability. Where processing is likely to result in a high risk to individuals, the GDPR requires a data protection impact assessment (DPIA).

India's Digital Personal Data Protection Act, 2023 establishes obligations for "data fiduciaries" that process digital personal data, including processing for a lawful purpose with consent or for certain legitimate uses, giving notice, maintaining reasonable security safeguards, and respecting the rights of "data principals". Organisations operating in India should track the rules and guidance issued under the Act and take legal advice on how they apply to specific AI uses.

- Confirm the lawful basis and the original purpose of collection before reusing personal data for AI.
- Minimise: remove or pseudonymise personal data that the use case does not need.
- Update privacy notices where AI use changes how personal data is processed.
- Plan how you will respond to access, correction and erasure requests that involve AI systems.
- Involve the data protection officer or privacy team early, and complete impact assessments where required.

LIFECYCLE

Retention and deletion

Retention schedules often stop at the source system, but copies made for AI — training snapshots, feature stores, vector indexes, evaluation sets and prompt logs — need retention rules too. Removing data from a model that has already been trained on it can be difficult, which is a strong reason to minimise and approve training data carefully in the first place.

- Extend the retention schedule to every AI-derived data store and log.
- Ensure deletions in source systems propagate to retrieval indexes promptly.
- Document when a model must be retrained or retired because its training data can no longer be retained.

BUYER GUIDANCE

Questions to ask data and AI platform vendors

- Does retrieval enforce each user's source-system permissions at query time?
- What lineage and catalogue integrations are supported, and can lineage be captured automatically?
- Is customer data used to train or improve the vendor's models, and can this be switched off contractually?
- Where are data, embeddings and logs stored and processed, and for how long are they retained?
- How are deletion requests propagated to indexes, caches and logs?
- What data quality monitoring and alerting is built in?
- Which controls map to the NIST AI RMF functions, and what evidence can the vendor provide?

ROADMAP

A phased approach to AI-ready data

Phase	Focus	Outcome
1. Inventory	List AI use cases and the datasets each one uses; assign owners and stewards; record classification.	A known, owned set of AI data sources.
2. Govern	Approve an AI data use policy; define quality thresholds per use case; set up an approval route for new data sources.	Clear rules and accountability (AI RMF Govern and Map).
3. Protect	Fix oversharing, enforce permission-aware retrieval, secure pipelines and derived data, complete privacy assessments.	Reduced exposure and lawful processing.
4. Measure	Automated quality checks, lineage capture, drift and leakage testing.	Evidence that data remains fit for purpose (AI RMF Measure).
5. Sustain	Retention for AI-derived stores, incident handling, periodic reviews and reassessment.	Ongoing risk management (AI RMF Manage).

Checklist: AI-ready data governance

- Each AI use case has a documented purpose, owner and list of data sources.
- Every dataset is in the catalogue with owner, classification and approved uses.
- Quality dimensions and thresholds are agreed and checked automatically.
- Lineage and provenance, including third-party licence terms, are recorded.
- Retrieval and pipelines enforce least privilege and source permissions.
- Lawful basis, minimisation and impact assessments are complete for personal data.
- Retention rules cover training snapshots, indexes, embeddings and prompt logs.
- Governance roles and review cadence are aligned with the NIST AI RMF.

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